Working Paper No. 755-6
September 2003

FUNCTIONAL SPECIFICATION FOR HLCAC PROPULSOR ASSEMBLY

By:

CDI Marine Systems Development Division
900 Ritchie Highway, Suite 102
Severna Park, Maryland 21146

For:

Receiving Officer, Bldg. 100
Coastsysta Dahlgren Div., NSWC
6703 West Highway 98
Panama City, Florida 32407-7001

In Performance of:

P.O. # N61331-03-F-1609

Data Item A002

THIS SPECIFICATION HAS BEEN PREPARED BASED ON A CFD ANALYSIS AND THE RESULTING DESIGN ANALYSES CONDUCTED BY CDI MARINE SDD. IT MAY BE UPDATED AS A RESULT OF THE MODEL AND FULL-SCALE FAN TEST RESULTS.

FOREWORD

The work described in this working paper was prepared by CDI Marine Systems Development Division (CDIM-SDD). This document presents a functional specification for the propeller shroud assembly for the HLCAC hovercraft.

CDIM-SDD points of contact for this task were Mr. Brian Forstell and Mr. Alan Becnel.

TABLE OF CONTENTS

PAGE

TABLE OF CONTENTS (continued)

PAGE

LIST OF ILLUSTRATIONS

LIST OF TABLES

LIST OF DRAWINGS

1.0 SCOPE

This specification presents the physical and performance requirements for a propeller assembly and for a propeller shroud assembly that will be employed on the HLCAC. These two elements compose the propulsor assembly and will provide primary propulsion for the craft. This specification also defines the geometry of the propeller shroud assembly through the inclusion of figures and tables of offsets as necessary.

For the purposes of this specification, a propeller shroud assembly consists of the propeller shroud, two aft rudders, seven stators connecting the shroud to the propeller hub centerbody, and the foundations by which the propeller shroud is attached to the deck. The propeller assembly consists of the propeller hub, composite propeller blades, a control module, a transfer housing, oil transfer tubes, a propeller support shaft, a drive adapter and a spinner. All components of the propeller assembly shall be documented by manufacturer-supplied interface control drawings.

2.0 APPLICABLE DOCUMENTS

Documents are applicable to the extent they are referred to in Sections 3.0, 4.0 and 5.0 of this specification. Unless stated otherwise, the current revision of the following documents will apply.

2.1 Government Documents

HLCAC Propulsor Interface Control Document.

2.2 Other Documents

INS 0041 – Subcontractors requirements (NFT document).

ISO 1940/73/05/01 – Mechanical vibration. Balance quality requirements of rigid rotors.

A Handbook of Balancing, AiResearch Mfg. Co., 1960.

An Introduction to Fatigue in Metals and Composites, R.L. Carlson and G.A. Kardomateas, Chapman & Hall, 1996.

MIL-T-31000 – MIlitary Specification, Technical Data Package

Drawings:

Dwg. #755-05 HLCAC Propulsor

3.0 REQUIREMENTS

3.1 Geometry

The HLCAC hovercraft includes two aft-mounted propulsor assemblies, one to port and the other to starboard.

The geometry of a single propulsor assembly is defined in the following paragraphs. Unless otherwise noted, the port and starboard propulsors are identical.

3.1.1 General Arrangement

Figures 3-1 and 3-2 show the general arrangement of the propeller, propeller shroud, stators, and rudders which make up the propulsor assembly. Detailed geometry is presented in the following sections.

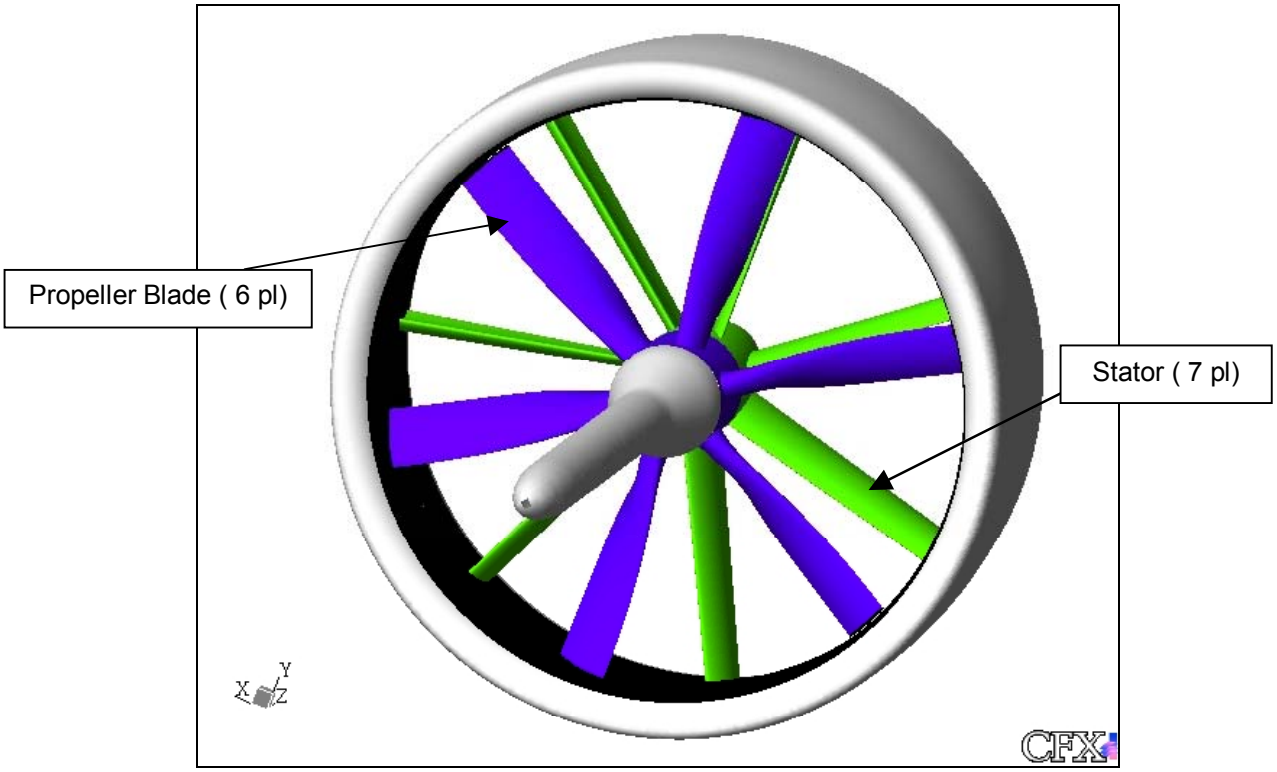


Figure 3-1. General Arrangement of the Propulsor Assembly (Port Assembly, View From Front)

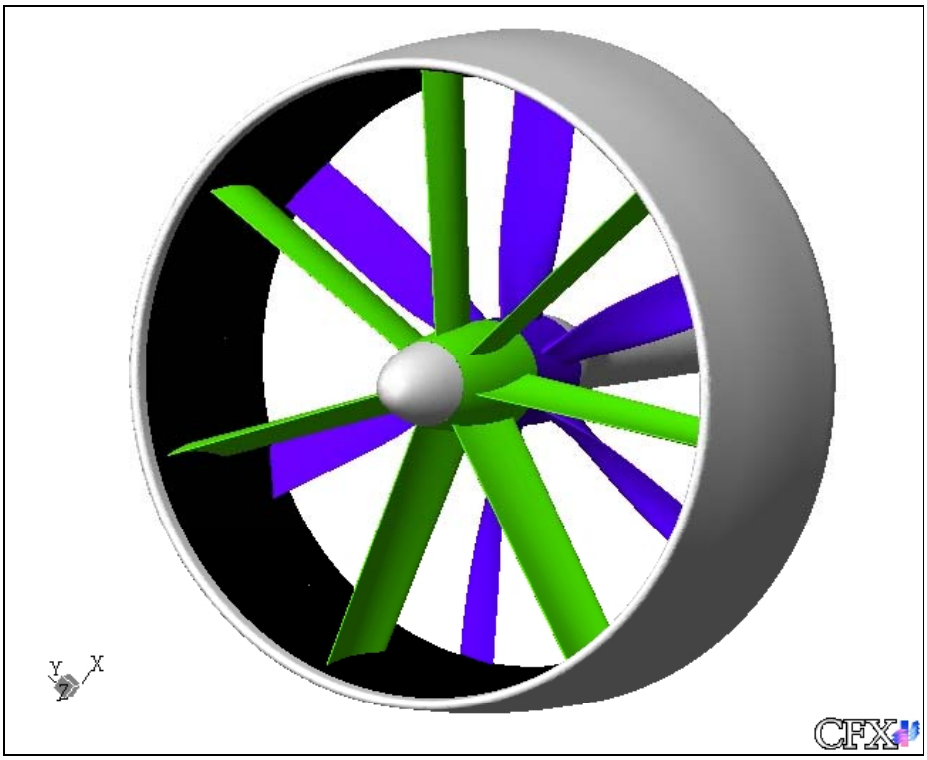


Figure 3-2. General Arrangement of the Propulsor Assembly (Port Assembly, View From Aft)

3.1.1.1 Propeller

Both the port and starboard propellers have a right-handed rotation. The propeller centerline is located 355.6 mm (14 inches) aft of the leading edge of the propeller shroud. The maximum diameter of the propeller shall be 3581.4 mm (141 inches) at the maximum operating condition. This maximum diameter should include the effects of the centrifugal load, thermal expansion, and all manufacturing tolerances. The detailed offsets for the propeller blade at different spans are presented in Appendix A.

3.1.1.2 Shroud

The shroud is a cylindrical airfoil surrounding the propeller. Figure 3-3 presents a cross-section of the shroud. The shroud has an inner diameter of 3606.8 mm (142 inches), providing a nominal 12.7 mm (0.5-inch) tip clearance with a 3581.4 mm (141inch) six-bladed propeller. The upper and lower surfaces of the shroud inlet lip are elliptical. The two elliptical surfaces meet at the shroud leading edge radius of 1998.9 mm (78.695 inches). The outer elliptical surface shall extend to 116.8 mm (4.6 inches) aft of the leading edge, and the inner elliptical surface shall extend to 236.2 mm (9.3 inches) aft of the leading edge.

The outer surface of the shroud contains a circular arc transition section starting 482.6 mm (19 inches) aft of the leading edge. The arc radius is 5993.4 mm (235.96 inches) and transitions to a straight line 990.6 mm (39 inches) aft of the leading edge.

The inner surface of the shroud also contains a circular arc transition, starting 609.6 mm (24 inches) aft of the leading edge with a radius of 751.8 mm (29.6 inches). This transitions to a straight line section 736.6 mm (29 inches) aft of the leading edge. Appendix F provides a table of shroud offset points.

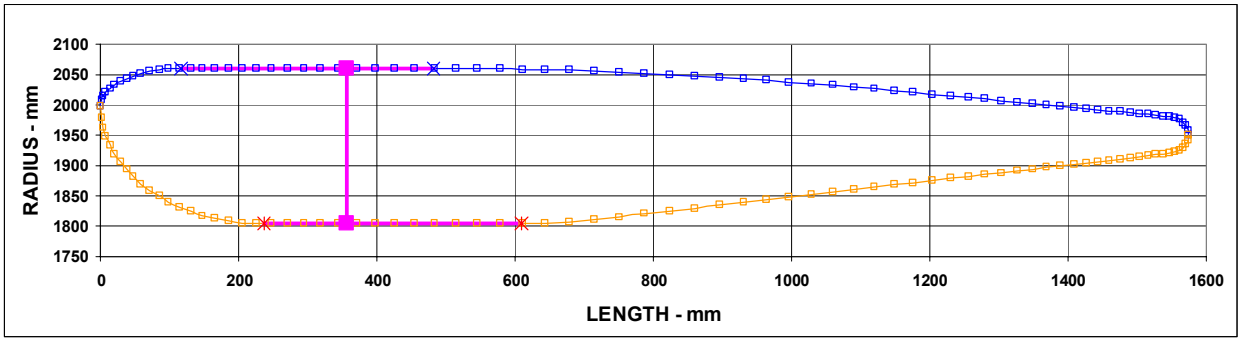


Figure 3-3. Propeller Shroud Airfoil Section

3.1.1.3 Stators

There are seven identical stator blades located aft of each propeller. The stators provide support for the propeller centerbody and carry the thrust and torque produced by the propeller out to the shroud where it is reacted to the deck. The stators are equally spaced at 0, 51.43, 102.86, 154.29, 205.71, 257.14, and 308.57 degrees, with 0 degrees representing top dead center. The geometry of an individual stator blade at the shroud and hub intersections (100 and 0 percent span) is shown in Figure 3-4. The geometry of the stator varies along the span, but the geometry is a ruled section between the presented hub and tip sections. The detailed offsets for the stator blade at different spans are presented in Appendix B. Appendix G provides a table of offsets to define the prop and stator hub shape that is needed to match the 0-percent span sections of both.

The (0, 0, 0) point of the stator is the centerline of the propeller, which is 355.6 mm (14 inches) from the leading edge of the shroud.

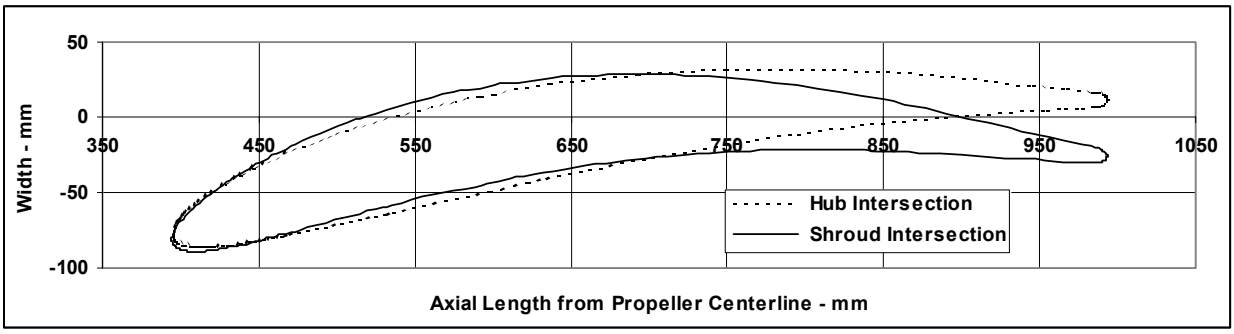


Figure 3-4. Stator Blade Geometry

3.1.1.4 Rudders

There are two rudders located behind each propeller shroud. The two rudders will be Government Furnished Equipment and are described in the HLCAC Propulsor Interface Control Document.

3.2 Performance Characteristics

3.2.1 General Performance

Performance characteristics have been determined at an ambient temperature of 37.7°C (100°F) and a nominal propeller rotational speed of 1257 rpm. All performance has been analyzed and predicted under government sponsorship and has resulted in the propeller blade section, blade geometry, and shroud geometry that is documented in this functional specification.

3.2.2 Minimum Rating

The aerodynamic performance rating of the propeller when operating in the duct, whose nominal discharge area ratio is 1.2, has been determined by the government. The government analysis has concluded that the bollard thrust of the propulsor unit will be at least 87 kN (19,556 lb) static thrust at 5057 kW (6781 shp) with an ambient air temperature of 37.3°C (100°F) at sea level and still air, a propeller speed of 1257 rpm, and a propeller pitch not to exceed 40 degrees measured at the three-quarter radius position with erosion protection system installed.

3.2.3 Other Guaranteed Rating Points

Table 3-1 provides the two primary aerodynamic performance rating points that have been evaluated by the government.

3.2.4 Attitude Conditions

The propeller system shall meet the performance requirements of the specification under the following conditions:

a) Level craft position and the craft rolled 5 degrees to either side.

b) Level craft position and the craft rolled 20 degrees to either side for 30 seconds.

c) Craft at 0 to 12 degrees pitch in either direction with up to 5 degrees roll to either side.

d) Craft at 0 to 12 degrees pitch in either direction with up to 20 degrees roll to either side for 30 seconds.

Table 3-1

Required Performance Points

Nominal Thrust at Bollard Conditions	
Thrust, kN	87
Propeller Input, Power, kW	5057
Propeller Speed, rpm	1257
Air Temperature, ^{o}C	37.7
Relative Air Speed, kts	0
Nominal Thrust at Cruise Conditions	
Thrust, kN	76.5
Propeller Input Power, kW	5057
Propeller Speed, rpm	1257
Air Temperature, ^{o}C	37.7
Relative Air Speed, kts	25

3.2.5 Air Speed and Altitude

The propeller system shall perform in accordance with the requirements of the specification at sea level for relative air velocities up to 75 kts and ambient temperatures from -23 to 37.7^{o}C.

3.2.6 Power Profile

For design purposes, the power profile for the HLCAC propeller shall be as defined in Table 3-2.

Table 3-2

Operational Load Spectrum

	Case 1 Idle	Case 2 Low	Case 3 Cruise
Propeller Power, kW	100	1300	5057
Speed, kts	0	5	25
Time at Load Case L, %	15	10	75

3.2.7 Rotational Speed

The steady speeds of rotation for the propeller system shall be as follows:

a) Normal: Up to 1257 rpm
b) Maximum: Up to 1313 rpm

3.2.8 Over Speed

The propeller shall be capable of withstanding an over speed to 1400 rpm for at least 10 seconds.

3.2.9 Crosswind Performance

The Aq (the angle of the air approaching the propeller duct inlet plane due to the combination of cross wind and craft forward speed multiplied by its dynamic pressure) shall correspond to a vehicle forward speed of 25 kts in the presence of a 16-kt cross wind. At 1257 rpm and 5057 kW (6781 shp), at sea level and 37.7^{o}C (100^{o}F), the estimated shaft bending moment and the estimated normal force shall be determined and provided to the USN.

3.2.10 Blade Activity Factor

The calculated blade activity factor was determined by the government analysis, determined in conjunction with the blade section properties to meet the specified performance. The blade design was based on using a total activity factor of 1002.

3.2.11 Polar Moment of Inertia

The contractor is responsible for calculating the polar moment of inertia of the propeller about the axis of propeller rotation.

3.2.12 Propeller System Life

The propeller system shall operate in the environment specified in Section 5.0 for a minimum of 6000 operating hours with the spectrum given in Table 3-2. The blades should provide a minimum of 500 hours of operation before servicing, except for replacement of leading edge protection that shall have a minimum of 250 hours of operation.

3.2.13 Propeller Loads

The propeller loads for the maximum power condition are shown in Appendix D. The averaged pressure distributions around the blade are tabulated for 0 to 100-percent span at 10-percent span increments.

3.2.14 Flutter

The propeller shall be free from flutter under all normal operating conditions that encompass static thrust, up through a maximum relative air speed of 75 kts.

3.2.15 Hydraulic Power

Loss of external hydraulic power to the propeller system shall result in the blades remaining at the pitch existing at the time of the failure when operating in the forward pitch range. If in reverse pitch, the blades shall move to a small negative angle established by the blade twisting moment associated with the propeller operating conditions.

3.2.16 Propeller System Weight

The propeller designer/builder is responsible for determining and reporting the weight of the propeller system.

3.2.17 Blade Pitch

The propeller shall incorporate means of adjusting the individual blade angle in increments of 0.1 degrees. The propeller shall either be so constructed that when the blades are assembled in the hub, the difference between their mean aerodynamic angle shall not exceed 0.1 degrees throughout the entire operating range as well as against the limiting pitch stops, or the propeller shall incorporate means of adjusting the individual blade angle in increments of 0.1 degrees.

The propeller control system shall function to provide control of the propeller in response to electrical signals from the craft control system. The control shall operate throughout the blade angle range specified. A block diagram of the required control system shall be provided and shown to be consistent with the HLCAC Propulsor Interface Control Document. The time from full forward to full reverse shall not exceed two seconds and the velocity gain shall not be less than 20 degrees per second.

3.2.18 Blade Angle Range

The maximum blade angle shall be 40^{o}. The minimum blade angle shall be -35^{o}.

3.3 Structural Design Requirements

The propulsor assembly shall satisfy the design criteria and loading requirements specified in this paragraph.

Loads are presented in metric units. When loads are presented as "±" cases, all possible combinations must be checked.

3.3.1 Propeller System Loads

3.3.1.1 Static Strength

The propeller system (propeller assembly, shaft adapter assembly, and associated mountings) shall withstand, without excessive deformation, yielding (i.e. 0.2% proof strain), or loss of utility, the loadings resulting from the critical combination of the following limit loads multiplied in each case by the yield factor of safety. In addition, the propeller system shall withstand, without failure, the loadings resulting from the critical combination of the following limit loads, multiplied in each case by the ultimate factor of safety:

a) Limit Loads

1. The limit torque of Figure 3-5.

2. The inertia load factors of Figure 3-6 multiplied by the mass of the components.

3. Loads due to static and dynamic deflections of the hull under hogging, sagging, and impact load conditions, in combination with the axial stiffness of associated couplings.

4. Loads due to thermal expansion differences between hull structure and propeller system components, in combination with the axial stiffness of the associated couplings.

5. Loads due to initial installation tolerances and interferences, in conjunction with the axial stiffness of the associated couplings.

6. Loads due to gyroscopics; at maximum-rated speed (rpm), the system shall withstand gyroscopic moments resulting from the following:

   i. Craft rotational velocity of $\theta = \pm 0.5$ rad/sec (pitch) combined with the bow impact inertia loads of Figure 3-2.

   ii. Craft rotational velocity of $\psi = \pm 0.5$ rad/sec (yaw) combined with inertia loads of $N_z = 1.0$ down, $N_y = \pm 1.76$, and $N_x = \pm 1.25$.

7. Thrust loads from propeller and bevel gears, where applicable.

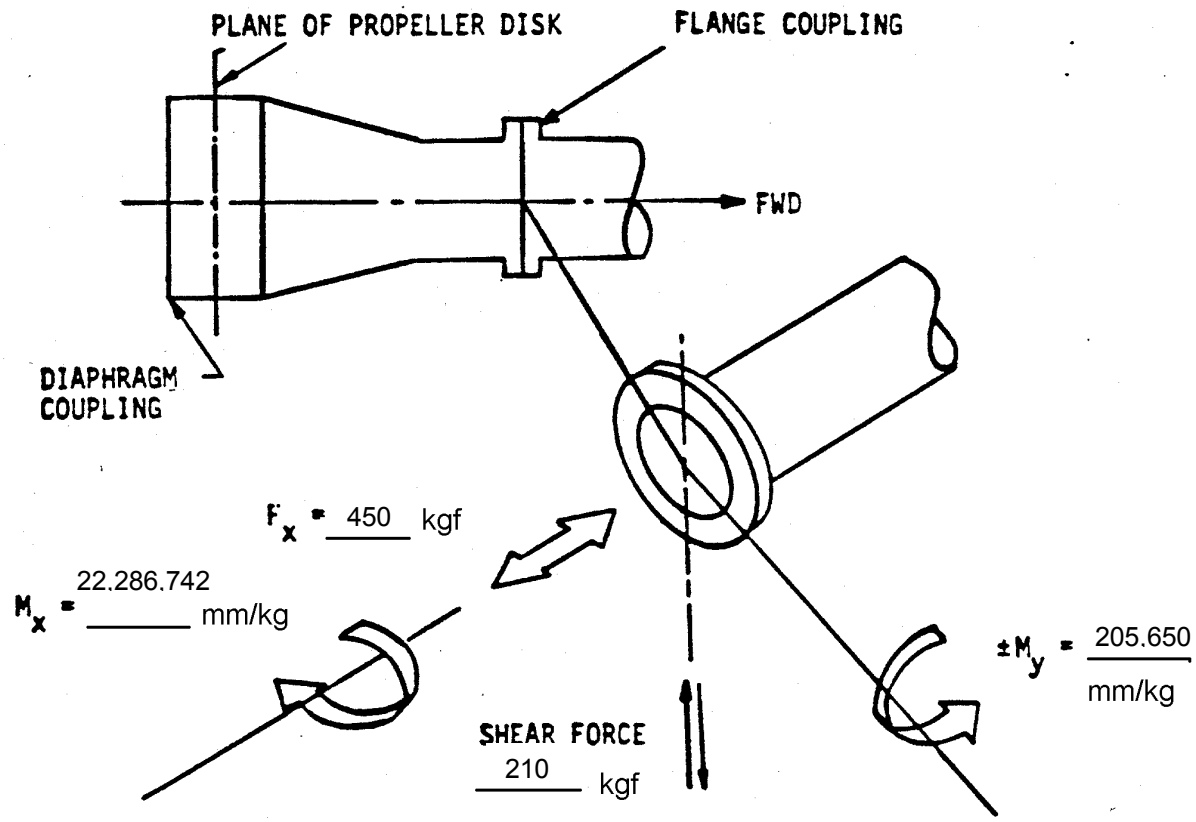
b) Factors of Safety

1. Yield = 1.0 x limit.

2. Ultimate = 1.5 x limit.

CASE 1: Torsional Only - M_x = 22,286,742 mm/kg is subject to shaft criteria where equivalent limit load = 2 x Operational Steady State Maximum Torque.

CASE 2: Combined Limit Loads.



CASE 3: Fatigue Loads. M_x = 22,286,742 mm/kg $\pm$ 11,143,371 mm/kg for Infinite Life.

Note that Ultimate Load = 1.5 x Limit Load.

Figure 3-5. Shaft Adapter Loads

Inertia Factor			
N_x	N_y	N_z	Design Condition
-1.0	±1.0	+4.6	Stern Impact
+2.0	±1.0	-3.2	Bow Impact
+8.0, -3.0	±3.0	+4.5, -3.0	Crash Case 3

1. Inertia load factor is defined as N where:

$$N = \frac{\text{Force on Body}}{\text{Weight of Body}} = -\frac{\text{Acceleration of Body}}{9}$$

2. Variations of loading due to the velocity inflow gradients shall be considered for static, dynamic, and fatigue requirement.

3. These are ultimate craft load factors to be applied separately for ultimate load design.

Positive Sign Convention

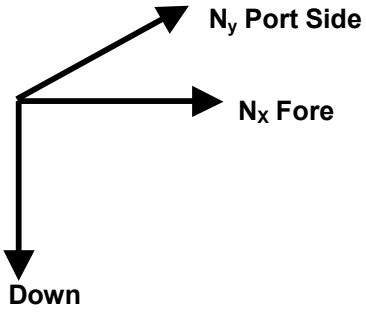


Figure 3-6. Inertia Load Factors

3.3.1.2 Repeated Load Strength

The propeller system shall withstand, without loss of structural integrity, the loads resulting from the most critical combination of the loadings. For substantiating fatigue life, allowable strengths shall be based on reference data with appropriate stress factors. Where applicable, allowable fatigue shall not be more than the average test specimen life divided by a factor of 2.0.

Analysis shall be conducted to show a positive margin of life after 6000 hours of craft operation. The maximum steady operating torque with ± 50% alternating shall be used at the maximum power rating for the operational load spectrum of Table 3-2. In addition, the stresses resulting from craft inertia, gyroscopics, centrifugal thermal growth, hull deflections, installation tolerances, and thrust loads described in Section 3.3.1.1 shall be combined with, or superimposed on, the stresses resulting from torsional loading.

In lieu of the preceding, an analysis may be conducted to show infinite life for the application of the maximum steady operating torques with ± 50% alternating, shown in Figure 3-5. The effects of maximum inertia loads, hull deflections, thermal expansions, installation tolerances, gyroscopics, centrifugal and thrust loads described in Section 3.3.1.1 shall be superimposed on, or combined with, the stresses from torsional effects.

3.3.1.3 Provisions

Provisions shall be made for attaching balance weights in one plane. Points of attachment must be readily accessible with the propeller mounted on the craft.

3.3.1.4 Drive Shaft Adapter

The drive shaft adapter shall be dynamically balanced. All balancing shall be accomplished by the removal of metal, and care shall be taken to prevent subsequent corrosion.

3.3.2 Load Cases

Table 3-3 identifies the required load cases. The shroud assembly shall be capable of withstanding the associated loads in accordance with the design criteria specified in Paragraph 3.3.3. Specific component loadings corresponding to these design cases are presented in Paragraphs 3.3.4 through 3.3.6. In many cases, the components must also react loads generated by other components, including the propeller. The details of the structural design will dictate how these additional loads are applied.

Table 3-3

Propulsion Duct Assembly Load Cases

Case	1	6
Descriptor	Ahead, Bollard	Max Design Load Speed Case
Ship Speed, Kts	0	25
Engine Power Setting	MCR	MCR
Propeller Power, kW	5056.6	5056.6
Propeller Speed, rpm	1257	1257
Rudder Defl., deg (Note 2)	± 20	± 20
Sideslip Angle, deg (Note 2)	0	± 40
Total Thrust, kN (lb)	86 (19,556)	76.5 (17,190)
Propeller Thrust, kN (lb)	45.3 (10,178)	39.8 (8,947)
Propeller Torque, N-M (lb-Ft)	38,413 (28,332)	38,413 (28,332)
Duct Thrust, kN (lb)	41.7 (9,378)	36.7 (8,243)
Temperature (°C)	37.8	37.8
Ambient Pressure, Bar (psi)	1.014 (14.7)	1.014 (14.7)
Seas	Calm	Max.
Wave Slap	N/A	Yes
Inertial Load (Note 3)	N/A	+2.0, -1.0 N_x, ±1.0 N_y, +4.6, -3.2 N_z
Propeller Gyroscopic Moment, kN-M (in.-lb) (Note 4)	N/A	±8.2 (±72,590)

Notes:

1. Loading scenarios for this design case are presented the loads section for each component, where applicable.
2. All combinations of ± rudder angle and ± sideslip angle should be checked for maximum side forces and generated moments. 20^{o} represents the angle of maximum rudder force, not the maximum deflection angle.
3. Sign convention is +Nx forward, +Ny to port, +Nz down.
4. Gyroscopic moments are present for both pitch rate and yaw rate motions, but will not occur simultaneously. The effect of gyroscopic moments shall be computed for both positive and negative moments. (Yaw moment occurs with pitch rate; pitch moment occurs with yaw rate).

3.3.3 Design Criteria

Loads defined in this document represent limit loads, that is, the maximum load expected under the stated operating conditions. The propeller and shroud assembly shall withstand these limit loads subject to the design criteria contained within this paragraph. If, on the basis of the structural analysis of Paragraph 8.1.2, the contractor believes that other more severe loads exist that will drive the design, the contractor must inform the USN and provide justification for those other loads.

3.3.3.1 Design Margins

The following rules for load cases apply.

- Yield = 1.0 * Limit
- Ultimate = 1.5 * Limit
- Yield loads are defined as limit loads times the yield factor of safety, while ultimate loads are defined as the limit loads times the ultimate factor of safety. The load cases defined herein, unless otherwise noted, represent limit loads.
- When subjected to yield loads, the structure shall not interfere with normal operation of the craft. When subjected to ultimate loads, the structure shall not fail.

All static load calculations must show a positive margin of safety when the margins of safety are defined as:

$$\text{M.S. (Yield)} = \frac{\text{Allowable Yield Load (Stress)}}{\text{Design Yield Load (Stress)}} - 1$$

$$\text{M.S. (Ultimate)} = \frac{\text{Allowable Ultimate Load (Stress)}}{\text{Design Ultimate Load (Stress)}} - 1$$

Material properties shall be used to define allowable loads (stresses) for yield and ultimate conditions.

All fittings and joints shall have an additional special safety factor of at least 1.15 added to the safety factors above applied to the fitting, the means of attachment, and the bearing on the joined parts.

3.3.3.2 Fatigue Criteria

The margin of safety for fatigue shall be positive when calculated using the following:

$$\text{M.S. (Fatigue)} = \frac{\text{Material Fatigue Strength, at 2N Cycles}}{\text{Design Load}} - 1$$

Material fatigue strength per the above definition shall depend on whether the fatigue load is applied as oscillations between plus and minus loading or between plus and zero loading (i.e. the appropriate R value must be considered). N is the cumulative number of cycles defined by the load spectrum and frequency. A factor of 2.0 is applied for margin. For composite materials, an equivalent definition of fatigue strength shall be used.

A craft operating life of 30 years with 200 operating hours per year shall be assumed. The operational load spectrum shall be as defined in Table 3-2. Specific information on fatigue loads is presented, where applicable, for each component.

3.3.3.3 Allowable Deflections and Deformations

The following requirements define the allowable deformations of the structure under loads:

- The maximum allowable axial deflection under load of the structure is 41 mm. The maximum deflection is defined at the uppermost point of the duct structure. Displacements at lower elevations shall be less than 41 mm.

- The maximum allowable eccentricity of the duct under load is 7 mm radial.

- All deflections of the structure shall be such that proper operation of the propeller, duct, and rudder are not hindered.

3.3.4 Duct Loads

The pressure distributions around the duct are determined for the maximum power case at the 25-knot design speed. Pressure distributions for the inside and outside of the duct are shown in Appendix C. The pressure distributions are shown for every 30 degrees of rotation around the duct.

Loads corresponding for each load case are presented in Table 3-3.

The duct shall react stator loads, rudder loads, and propeller thrust loads in addition to the loads defined in Table 3-4.

Table 3-4

Duct Loads

Case	1	2
Descriptor	Ahead, Bollard	Max Design Load Speed Case
Inertial Loads		
Shock Load	N/A	+2.0, -1.0 N_x, $\pm$1.0 N_y, +4.6, -3.2 N_z
Wave Slap Loads (Note1)		
Wave Slap, kPa (lb/in^2)	0	Figure 3-7
Thrust Loads		
Duct Thrust, kN (lb)	41.7 (9,378)	36.7 (8,243)
Aerodynamic Loads (Note 2)		
Side Force, kN (lb)	0	52.27 (11,751)

Notes:
1. Wave slap loads are applied normal to the surface of the duct. The wave slap load varies from a maximum at the lower surface to zero at the upper surface, as shown in Figure 3-7.
2. Side force loads shall be assumed to act at the quarter chord of the shroud airfoil cross-section, at the level of the propeller longitudinal axis.

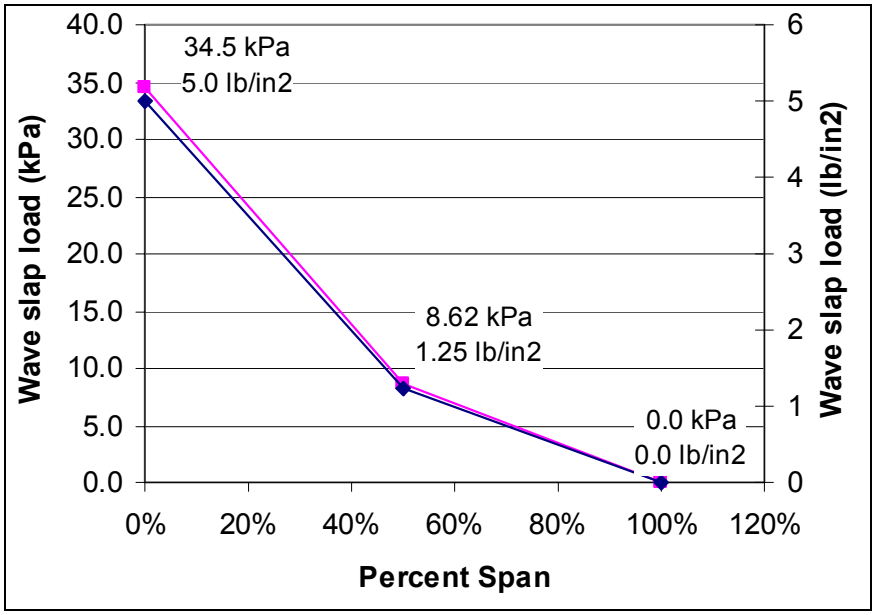


Figure 3-7. Duct Wave Slap Load Distribution

3.3.4.1 Duct Fatigue Loads

The duct will experience fatigue loading as a result of pressure pulses arising from the close passage of the propeller blade. Appendix C provides information on the peak blade passage pressures and the pressures midway between adjacent blades.

The frequency of the load will be at the primary blade passing frequency of 125.7 Hz (6P rate at 1257 rpm). Cycle life and operational loading shall be per that defined in Paragraph 3.3.3.2. (The idle case is assumed to not contribute to fatigue life.)

The oscillatory loads shall be applied in combination with the steady-state thrust loads as follows:

Lower Power:	Propeller Thrust = 24 kN	Duct Thrust = 20 kN
Maximum Power:	Propeller Thrust = 45.3 kN	Duct Thrust = 41.7 kN

3.3.5 Stator Loads

The pressure distributions for the stators are presented in Appendix E for the maximum power design point of 5056.6 kW and 25-knot craft speed. The pressure distributions represent the circumferential averaging of the pressures around the stator blades at different spans. Data is presented in both tabular form for 10-percent stator span increments and in graphic form for 0, 50, and 100-percent span. Table 3-5 summarizes additional stator loads.

3.3.5.1 Stator Fatigue Loads

Fatigue loading on the stators stems from the propeller crossing in front of the stator blade and from the varying thrust produced by each propeller blade during a single rotation (due to upstream flow blockage). Both loads will occur at a primary frequency of 125.7 Hz. Blade passage loads will oscillate between zero load and a maximum load (applied in addition to the steady aerodynamic loads on the stator). Propeller thrust variations will create a moment that oscillates between positive and negative maximum values.

These oscillatory stator loads must be included in the stress analysis of paragraph 8.1.2.

Table 3-5

Stator Loads

Case	1	2
Descriptor	Ahead, Bollard	Max Design Speed Load Case
Inertial Loads		
Shock Load	0	+2.0, -1.0 N_x, $\pm$1.0 N_y, +4.6, -3.2 N_z
Wave Slap Loads (Note 1)		
Wave Slap, kPa (lb/in^2)	0	Figure 3-8
Propeller Loads (Note 2)		
Thrust Per Stator, kN (lb)	12.94 (2908)	11.37 (2556)
Aerodynamic Loads (Note 3)		
Side Force Per Stator, kN (lb)	3.97 (893)	3.97 (893)
Thrust Force Per Stator, kN (lb)	1.89 (424)	1.66 (373)
Maintenance Loads (Note 4)		
Midspan Normal Load, kg (lb)	114 (250)	N/A
Axial Load, kg (lb)	114 (250)	N/A

Notes:

1. For purposes of design commonality, all stators shall be designed to withstand the wave slap in Figure 3-8. The maximum wave slap occurs at the interface to the shroud, i.e., the lowest point of the stator located at bottom dead center. For purposes of analysis of the entire propeller shroud assembly under simultaneous loading, stator wave slap loads shall not be included. (The maximum duct wave slap load represents a normal impact, which would effectively block the stators from receiving the wave slap load). In Figure 3-8, 0% span represents the stator location closest to the shroud (for the stator located at bottom dead center).
2. Propeller thrust loads stated in the table are twice the propeller thrust divided by the number of propeller blades. Each stator (and their connections with the shroud and propeller centerbody) shall be designed to withstand this 'twice average' load, but when performing analysis of the entire shroud assembly under simultaneous loading for the specified load cases, one half of this load should be applied to each stator, thus representing the actual propeller thrust load.
3. Aerodynamic loads should be assumed to act at 70% of the span (with 0% at the centerbody interface and 100% at the duct interface) and at 25% of the chord.
4. These loads are not applied during craft operation. However, they are included in the table to ensure the stator design can accommodate these loads, while the craft is non-operational. The axial load shall be applied to the connections between the stator and centerbody and the stator and shroud.

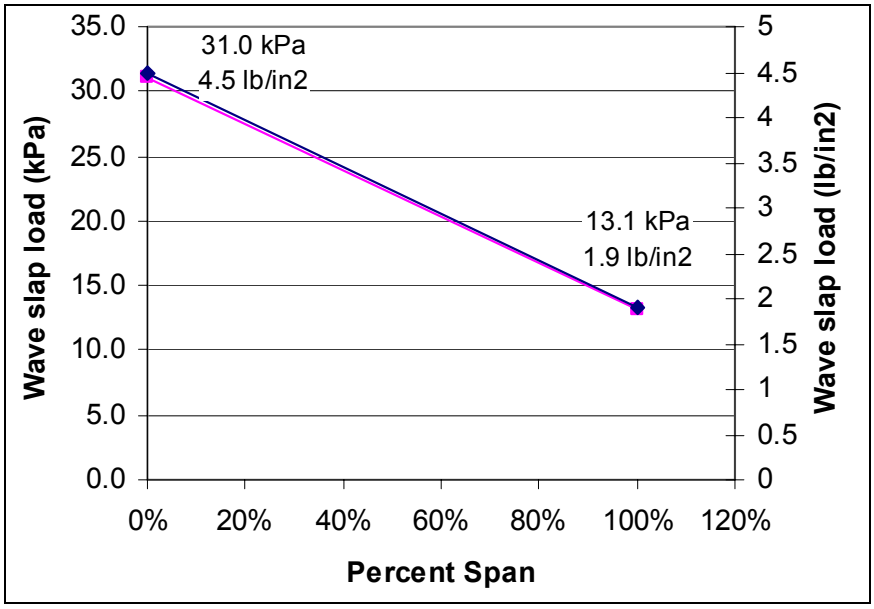


Figure 3-8. Stator Blade Wave Slap Load Distribution

3.3.6 Rudder Loads

The loads for the rudders are presented in Table 3-6. There are no critical fatigue loads for the rudder other than continued operation in the propeller wake for the operational life of the craft. The loads in Table 3-6 represent the loads on a single rudder (of the pair behind the propeller shroud). The design shall accommodate the loads created by two rudders deflected in tandem.

Table 3-6

Rudder Loads

Case	1	2	3	4
Descriptor	Ahead, Bollard	Astern, Bollard (Est)	Wave Slap @ Max Thrust	Max Design Speed Load Case
Inertial Loads				
Shock Load	N/A	N/A	N/A	+2.0, -1.0 N_x, ±1.0 N_y, +4.6, -3.2 N_z
Wave Slap Loads (Note 1)				
Wave Slap, kPa (lb/in^2)	0	0	Figure 3-9	0
Aerodynamic Loads (Note 2)				
Side Force, N (Per Single Rudder)	3333	4000	3333	3800
Drag Force, N (Per Single Rudder)	-102	2000	-102	117
Hinge Moment, N-m (Per Single Rudder	158	1400	158	181
Rudder Defl., deg	± 20	± 20	± 20	± 20

Table 3-6 (continued)

Notes:

1. Wave slap shall be applied per Figure 3-9. For design purposes, all of the wave slap load shall be reacted by the lower rudder hinge alone. 0% span represents the lowest point on the rudder.
2. Aerodynamic loads shall be assumed to act at the quarter chord of the rudder, at midspan (except for the specified hinge moment). The hinge moment for the reverse bollard thrust load case does not imply a requirement to produce this hinge moment. The linkage shall be designed for ahead conditions, and will simply provide whatever it can produce in astern conditions, the listed value represents the maximum possible load. There is no operational requirement to maneuver the vehicle in astern conditions. Sixteen degrees represents the load corresponding to maximum rudder side force.

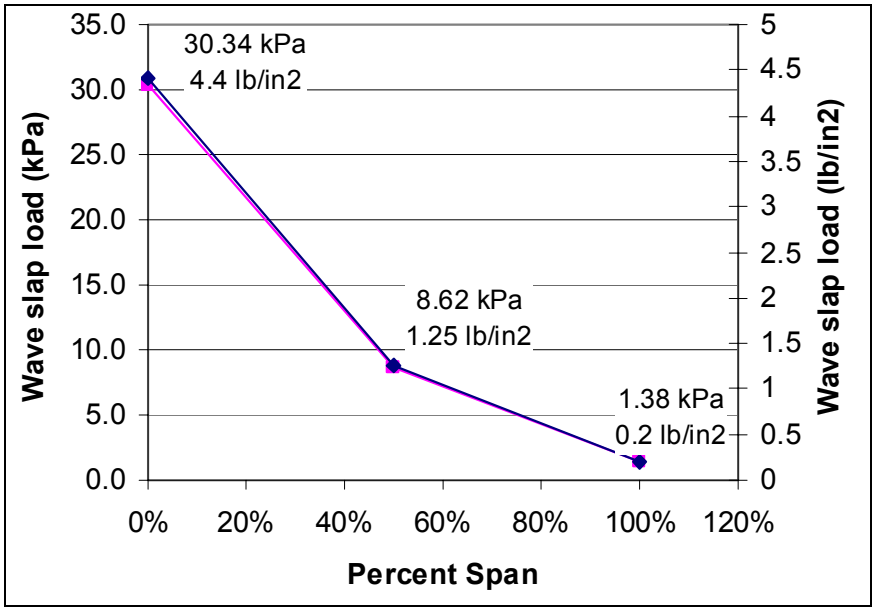


Figure 3-9. Rudder Wave Slap Distribution

3.3.7 Rudder Movement

3.3.7.1 Range of Deflection

The rudders shall be designed to provide a maximum deflection of $\pm$ 20°. The actuator stroke shall be designed to prevent the rudders from being deflected beyond these limits.

3.3.7.2 Slew Rate

The maximum slew rate for the rudders shall be approximately 20 degrees per second, based on the actuator interface specifications presented in Paragraph 3.5.2.

3.3.8 Balance

3.3.8.1 Blade

Each blade shall be balanced against a master balance blade. The blade shall be the complete and finished blade, to include any cuff, coating, and polyurethane leading edge strip. The blade shall balance horizontally and vertically at any two blade angles 90 degrees apart. It is permissible to use equipment of

equivalent accuracy in which the imbalance is determined with the blade centerline, located in either a horizontal or vertical position. Where balancing equipment other than knife edges is used, the unbalanced moment specified above may be applied as scale-reading deviations from the specified master moments. The above balance shall be accomplished on a finished composite blade, including cuff, coating, and polyurethane leading edge strip. The detachable rubber-covered leading-edge guards will be mass balanced.

3.3.8.2 Spinner

The means used to support the spinner for balancing shall provide the same degree of accuracy of centering and aligning the spinner as will be obtained when the spinner is installed on the propeller.

3.3.8.3 Dynamic

The entire propeller assembly shall be balanced to meet a balance quality grade of G6.3 or better.

3.4 Functional Requirements

3.4.1 De-Icing

The leading edge of the propeller shall be provided with a means for de-icing. (Note: The prototype craft will not be equipped with de-icing equipment, but the design shall accommodate its inclusion on production articles.)

3.4.2 Lift Points

The upper surface of the propeller shroud shall be equipped with lifting points so that the entire propulsor assembly can be suspended from these points.

The lift points and their mounts shall be designed with a yield factor of safety of 3.0.

3.4.3 Access Panels

Access panels shall be provided, as needed, in the duct surface to support replacement of stator blades and propeller blades.

3.5 Interfaces

3.5.1 Propeller Centerbody Interfaces

The stators shall interface with the propeller centerbody (hub assembly) as defined in Appendix G.

For information purposes only, the propeller centerbody is cylindrical in shape in the plane of the propeller, with a radius of 338.074 mm (13.31 inch), transitioning to an ellipsoidal shape 254 mm (10 inches) aft of the centerline of the propeller. The ellipsoid has minor axes of 338.074 mm (13.31 inches) radially and 1354 mm (53.307 inches) axially.

Details of this interface will be mutually agreed to between the supplier and the USN.

3.5.1.1 Hydraulics

The propeller shroud assembly shall provide hydraulic interfaces to support propeller blade angle control that is shown to be consistent with the appropriate HLCAC Propulsor Interface Control Document..

The hydraulic lines will be routed from the deck surface, through the propeller shroud foundations, propeller shroud, and a single stator to the centerbody. The hydraulic lines shall be routed internally within the propeller shroud assembly structure.

Details of the hydraulic fittings are provided in the HLCAC Propulsor Interface Control Document.

3.5.1.2 Load Sharing

The interface between the propeller centerbody and the stators shall support the load definitions provided elsewhere in this specification.

3.5.1.3 Electrical

The propeller shroud assembly shall provide sufficient internal wiring space to accommodate the wiring necessary for command and control of the variable pitch propeller mechanism. This wiring shall be located adjacent to the hydraulic lines to the extent possible.

3.5.2 Rudder Actuator Interface

Deflection of the rudders shall be via hydraulic control. Each rudder linkage shall interface with a hydraulic actuator whose performance is defined in the following paragraphs.

3.5.2.1 Actuator Stroke

Each rudder, linkage, and rudder attachment to the propeller shroud shall be designed to accommodate the maximum deflection angle that is specified in the appropriate HLCAC Propulsor Interface Control Document.

3.5.2.2 Actuator Fitting Interface Description

Refer to the HLCAC Propulsor Interface Control Document for details on the rudder and actuator interface to the propulsor shroud.

3.5.3 Deck Interfaces

The propeller shroud assembly shall be mounted on foundations such that the longitudinal centerline of the propeller is located 2190.75 mm above deck level.

The foundations shall be bolted to the deck.

3.5.4 Command and Control Interfaces

The propeller shroud assembly shall provide any necessary signal and electrical interfaces necessary for control of the rudders and the variable pitch propeller.

4.0 CONSTRUCTION

4.1 Nameplates and Product Marking

Equipment, assemblies, and parts shall be uniformly and legibly marked for identification. Label plates fitted in the weather shall be corrosion-resisting steel, QQ-S-766, Class 302, Finish 26. Information on the identification plate shall be as follows:

a) Propeller. Propellers shall be marked with the following information:

1. Model Designation
2. Serial Number
3. Manufacturer Identification

b) Hub. The following information shall be stamped or etched in a location such as to be readily visible when installed in the HLCAC propeller shroud, but not in a location to produce critical stress concentrations:

1. Model Designation (Propeller)
2. Serial Number
3. Part Number

c) Blades

1. Each blade shall have the following information stamped or etched on the base or ferrule, as applicable, in such a manner as not to affect the balance or strength of the blade:

i. Model Designation
ii. Serial Number
iii. Part Number

2. The following information shall be enameled, labeled, or painted on the blade, parallel to the longitudinal axis of the blade, and on the cambered face. This marking shall be given one coat of clear varnish or lacquer.

i. Model Designation
ii. Serial Number
iii. Part Number
iv. Manufacturer Identification

d) Spinner. The following markings shall be placed on the inside of the spinner shell or bulkhead at an appropriate and accessible location to ensure that this information will not be obliterated if outside surfaces of the spinner are painted. Locate markings in minimum erosion areas.

1. Part Number
2. Serial Number
3. Manufacturer Identification

e) Control. Controls shall be marked with the following information:

1. Model Designation
2. Serial Number
3. Manufacturer Identification.

f) Drive Shaft Adapter. The drive shaft adapter shall be marked with a part number and serial number, but not in a critical stress area.

4.1.1 Workmanship

Workmanship shall be in accordance with high industry standards.

4.1.2 Interchangeability

All parts having the same manufacturer part number shall be directly and completely interchangeable with each other with respect to installation and performance.

4.1.3 Safety

The propulsor system shall be designed to provide safety for operations and personnel.

4.2 Aerodynamic Surfaces and Contours

The aerodynamic surfaces of the propeller shroud assembly shall satisfy the following requirements:

4.2.1 Deviation From Flowlines

Deviation from the contours defined in Paragraph 3.1 shall not exceed 1.5 mm on the stator surfaces and the shroud internal surface, and shall not exceed 3.0 mm on the shroud external surface.

4.2.2 Discontinuities

Table 4-1 defines the allowable surface discontinuities for permanent joints on the propeller shroud assembly. The maximum allowable surface discontinuities for quick removal panels and hinged doors are less stringent, but shall be no greater than 1.5 times the values listed in Table 4-1.

Table 4-1

Surface Discontinuity Limits

Type	Allowable Discontinuity
Internal Shroud Surface and Stator Surfaces	
Forward Facing Step	0.8 mm
Aft Facing Step	1.2 mm
Longitudinal Step	1.6 mm
Transverse Gap	1.6 mm
Longitudinal Gap	1.6 mm
External Shroud Surface	
Forward Facing Step	1.6 mm
Aft Facing Step	1.6 mm
Longitudinal Step	1.6 mm
Transverse Gap	1.6 mm
Longitudinal Gap	2.4 mm

4.3 Water Intrusion

The propeller shroud assembly shall be designed to prohibit water intrusion. Sources of water intrusion include waves, spray, and rain, and include water shed from the propeller. Skin surfaces as well as joints shall be designed to prohibit water intrusion and absorption.

All internal and external surfaces shall be designed to prevent absorption of water.

4.3.1 Drain Plugs

If water intrusion cannot be eliminated, the propeller shroud assembly shall be fitted with drainage paths and drainage plugs which will allow the captured water to be drained.

4.4 Inner Duct Skin Joint Locations

To minimize fatigue risk, no inner duct skin joints are permitted in the plane of the propeller.

5.0 ENVIRONMENTAL REQUIREMENTS

5.1 Temperature

The propeller shroud assembly shall satisfy the requirements of Paragraph 3.0 in ambient temperatures ranging from –23°C to 49°C. Also, the propeller shall not suffer any adverse impact from temperature extremes, which include a –34°C cold soak and a 54°C heat exposure.

5.2 Humidity

The propeller shroud assembly shall satisfy the requirements of Paragraph 3.0 in relative humidity ranging from 10% to 100%.

5.3 Shock

The propeller shroud assembly shall satisfy the requirements of Paragraph 3.0 while experiencing shock loads.

5.4 Vibration

Propeller assembly must be balanced to meet or exceed the requirements of section 3.3.8.3.

5.5 Erosion – Wave Spray

The leading edges of the shroud, stators and rudders shall be designed to withstand erosion effects associated with operation in the marine environment (spray, blown sand, ice particles, etc.).

The leading edge of the rudders and stators shall be provided with replaceable erosion tape, or the equivalent.

6.0 FAILSAFE PROVISIONS

Failsafe provisions shall include physical stops that limit the maximum positive and maximum negative blade angles in the event of control system failure. In the event of a loss of electrical power to the locking device, the blade-angle servo actuator shall incorporate features to lock the propeller blade-angle input at the last actual position. A hydraulic lock shall be incorporated in the propeller to prevent reduction in pitch due to electrical or hydraulic failure when operating in forward pitch range.

7.0 USEFUL LIFE

The propeller shroud assembly shall be designed for a 20-year operating life with 200 operating hours per year. Normal preventive maintenance cycles shall be assumed. The blades should provide a minimum of 500 hours of operation before servicing, except for replacement of leading edge protection which shall have a minimum of 250 hours of operation.

8.0 DOCUMENTATION

8.1 Engineering Reports and Data

8.1.1 Engineering Analysis Report

An engineering analysis report shall be prepared summarizing the engineering analysis leading to the design of the propeller.

8.1.2 Stress Analysis

The report shall contain a summary of static load criteria, static stresses, and margins of safety for all major components. It shall include, as a minimum, the results of fatigue analyses of the shroud, propeller blade and hub, including design criteria, stresses and stress cycles, and material fatigue allowables. The report shall also indicate assumptions made on stress amplification due to blade dynamic response.

8.1.3 Acoustic Analysis

The report shall present an explanation of the analysis and methods used to predict the acoustic characteristics of the propeller.

8.1.4 Mechanical Operation and Control Analysis

The report shall contain a description of the pitch change mechanism and the method of control. It shall present a description of the analysis performed to show that the propeller mechanism meets the requirements of this specification.

8.1.5 Erosion Protection System Analysis

The report shall describe the analysis leading up to the selection of the erosion protection system, including the impact of the erosion protection system on performance and structural aspects of the design.

8.1.6 Propulsor Contractor Drawings

The propulsor manufacturer shall provide the following drawings and diagrams:

- Propeller assembly drawing.
- Blade and hub detail drawing.
- Propeller system installation drawing, including clearances for maintenance, checking adjustment, and removal of accessories and components subject to separate removal.
- Propeller accessory and component interface requirements (for units not mounted on the propeller).
- Electrical interface diagram showing the circuits internal and external to the propeller required for installation.
- Hydraulic installation interconnecting diagram showing interconnection between components.
- Electrical schematic of the propeller system.
- Craft interface drawing.

Drawings shall be prepared and maintained in accordance with MIL-T-31000 standards for mechanical engineering or equivalent.

8.1.7 Parts List

The parts list for the first propulsor system delivered shall constitute the approved parts list for any subsequent system of the same model to be delivered. Changes to the approved system parts list shall be approved by the USN.

8.1.8 Weight Status Reports

Weight status reports shall be submitted as weight changes occur, and attention shall be directed to any weight variations. The actual metric weight of each propeller system shall be determined and furnished prior to delivery.

8.1.9 Weight of Residual Fluids

The estimated metric weight of residual fluids remaining in a propeller system after operation and drainage shall be specified in the engineering analysis report.

8.1.10 Quality Assurance (Q/A) Reports

8.1.10.1 Dimensional Survey Reports

For the First Article and subsequent propulsors, a dimensional survey report, in metric units, shall be completed showing nominal (design drawing) dimensions and actual measured dimensions. Out-of-tolerance dimensions shall be highlighted. Out-of-tolerance items shall be resolved by means of correction or by waiver, depending on the sensitivity of the dimensions in question. Waivers will only be granted with the consent of the USN.

8.1.10.2 Material Reports

For each batch of material used, a report of the physical properties shall be submitted to the USN. Material documentation shall be traceable to point of manufacture. Where practicable, these properties should be confirmed by physical test of test specimens. Relevant dates shall be included.

8.1.10.3 Balancing Report

8.1.10.3.1 Blade Mass Properties

For the first article only, the weight and location of the center of gravity of each of the six blades shall be determined and recorded by serial number.

8.1.10.3.2 Propulsor Mass Properties

For the first article only, the mass properties, in metric units, including moment of inertia about the propeller centerline of the propeller assembly, shall be determined and recorded.

The report shall also contain:

- The weight of the major components of the shroud.
- The weight and CG location of the complete shroud assembly.
- The weight and CG location of the complete propulsor assembly.

8.1.10.3.3 Static Balance

During assembly, the manufacturer shall use reasonable diligence to ensure that each propeller is fairly well balanced statically by the use of selective blade assembly (by weight).

Static balance shall be determined and recorded prior to dynamic balancing.

8.1.10.3.4 Dynamic and Static Balance Report

Following completion of balancing in compliance with paragraph 3.3.8, a balancing report shall be submitted. This report shall include the blade mass properties report of paragraphs 8.1.8 and 8.1.9 and the moment of inertia of the propeller assembly as it exists prior to delivery, expressed in kg m^2 about the axis of rotation.

8.1.11 Delivery Reports

When the propulsor is ready for delivery, it shall be accompanied by a Delivery Report. This package shall contain copies of the dimensional survey report(s), balancing reports, and the weight report and dates of manufacture of components and date of assembly.

8.1.12 Technical Manuals

Source information shall be prepared to enable the USN to prepare technical manuals covering technical description, handling, installation and maintenance.

8.1.13 Test Plans and Procedures

Test plans and procedures shall be prepared in contractor format for development tests and qualification tests. An Acceptance Test Procedure shall be prepared and submitted to the USN for approval.

8.1.14 Configuration Control Requirements

The contractor shall maintain a configuration control system in accordance with DOD-STD-480 and MIL-STD-483 or equivalent.

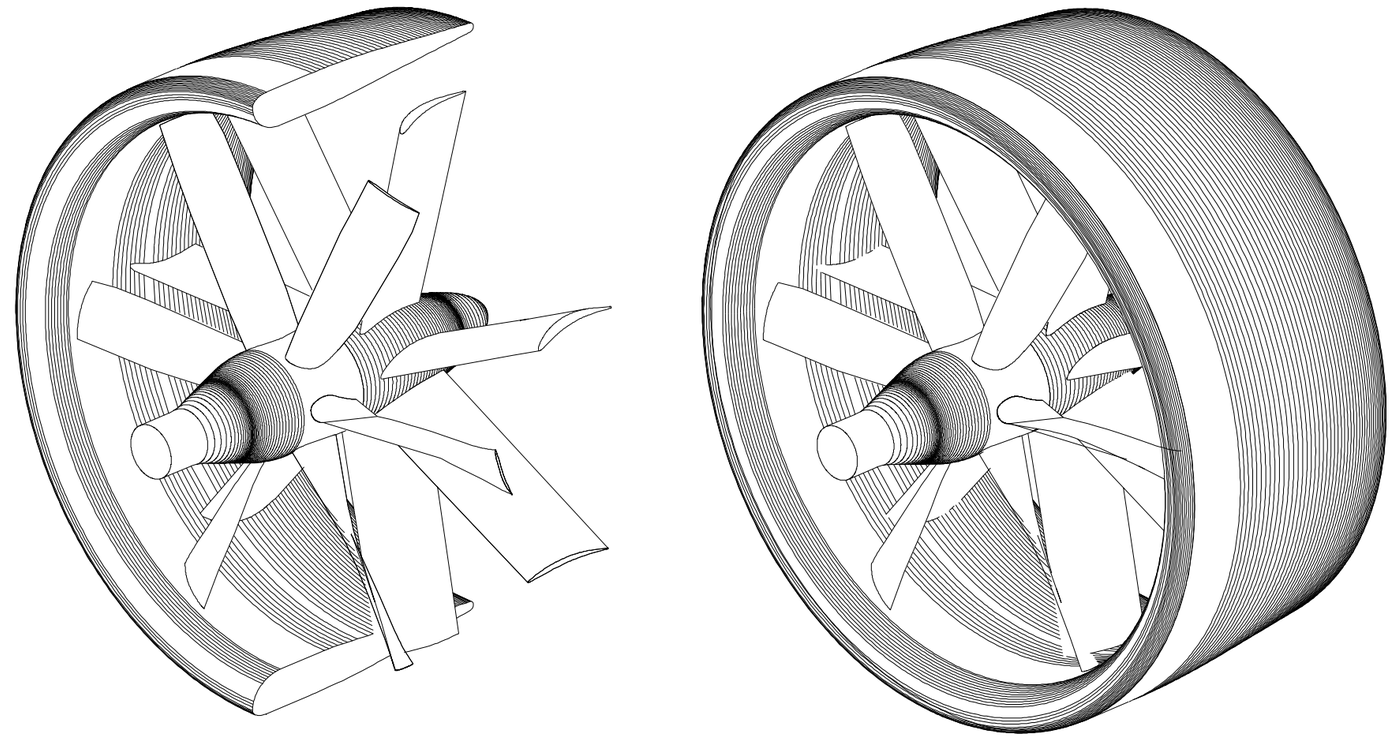
8.2 Logistics

8.2.1 Maintenance

The propulsor shall be designed to be maintainable and provide for easy regular inspections, periodic replacement of erosion protection film, and replacement of damaged blades.

8.2.2 Supply

The contractor shall propose methods to ensure economic availability of support resources concurrent with delivery of the equipment for test and evaluation, if required, for operational use.



HALF OF SHROUD
REMOVED FOR CLARITY

PROPULSOR

-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	FIND NO	NOMENCLATURE OR DESCRIPTION	CAGE CODE	PART OR IDENTIFYING NO	MATERIAL/SPECIFICATION	ZONE
QUANTITY																

PARTS LIST

METRIC DRAWING

THIS DRAWING HAS BEEN COMPUTER GENERATED USING AUTOCAD. DO NOT MAKE MANUAL CHANGES.

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS.
TOLERANCES ARE:
DECIMALS .X ±0.8 .XX ±0.25
ANGLES ±2°

DO NOT SCALE DRAWING

INTERPRET DRAWING IN ACCORDANCE WITH ASME Y14.100M

NEXT ASSY | USED ON
APPLICATION

CONTRACT NO. N61331-03-F-1609

APPROVALS	DATE
DRAWN W. BAKER	10-3-03
CHECKED J. PURNELL	10-3-03
ENGR A. BECNEL	10-3-03
DESIGN ACTIVITY	10-3-03

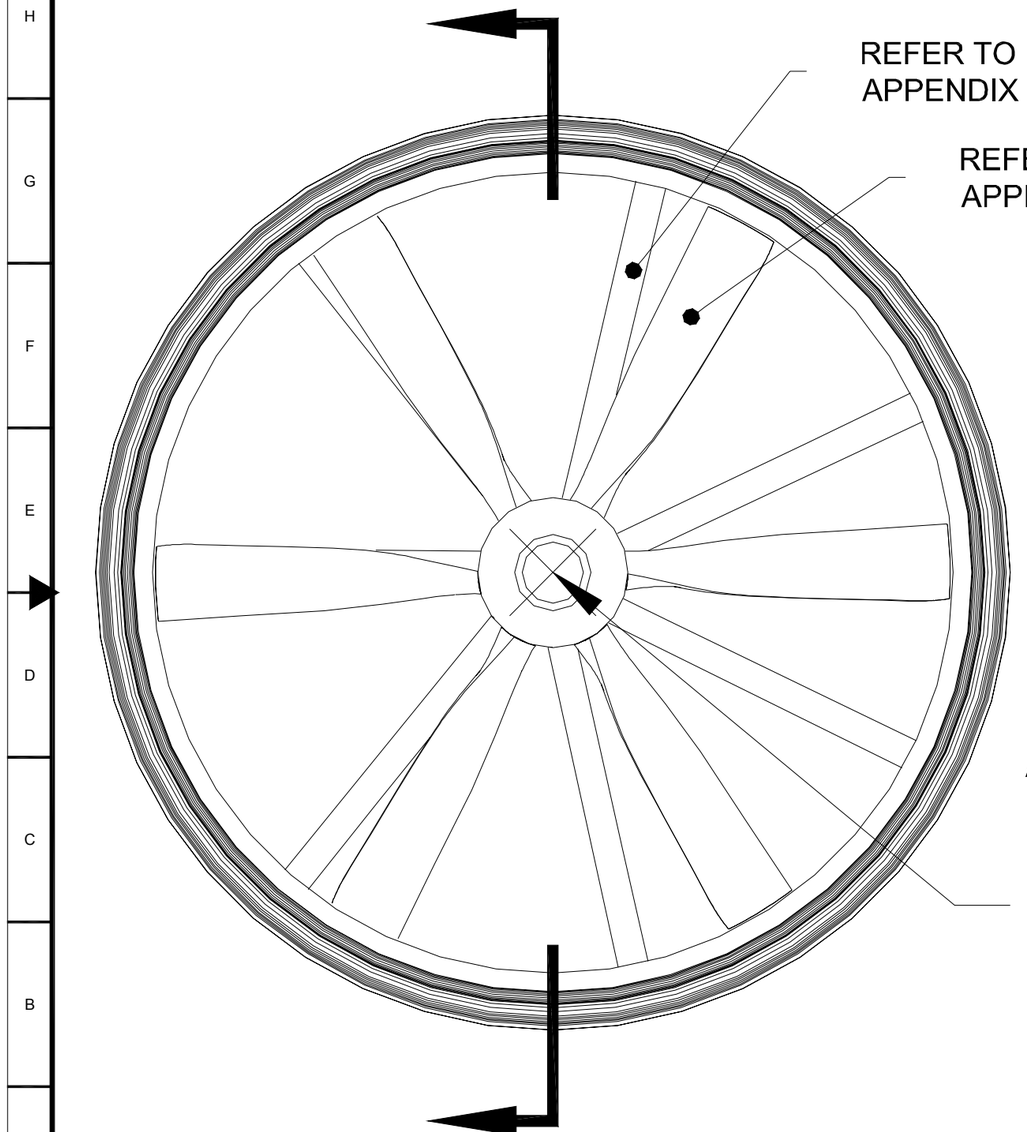
BAND, LAVIS & ASSOCIATES
A division of CDI Government Services
900 RITCHIE HIGHWAY, SEVERNA PARK, MD 21146
TELEPHONE: (410)544-2800

TITLE
HLCAC PROPULSOR

SIZE	CAGE CODE	DWG NO.	REV.
A1	9N195	755-05	-

SCALE NONE | CALC WT | ACT WT | SHEET 1 OF 2

CDIM-SDD DWG. #755-05 HLCAC Propulsor



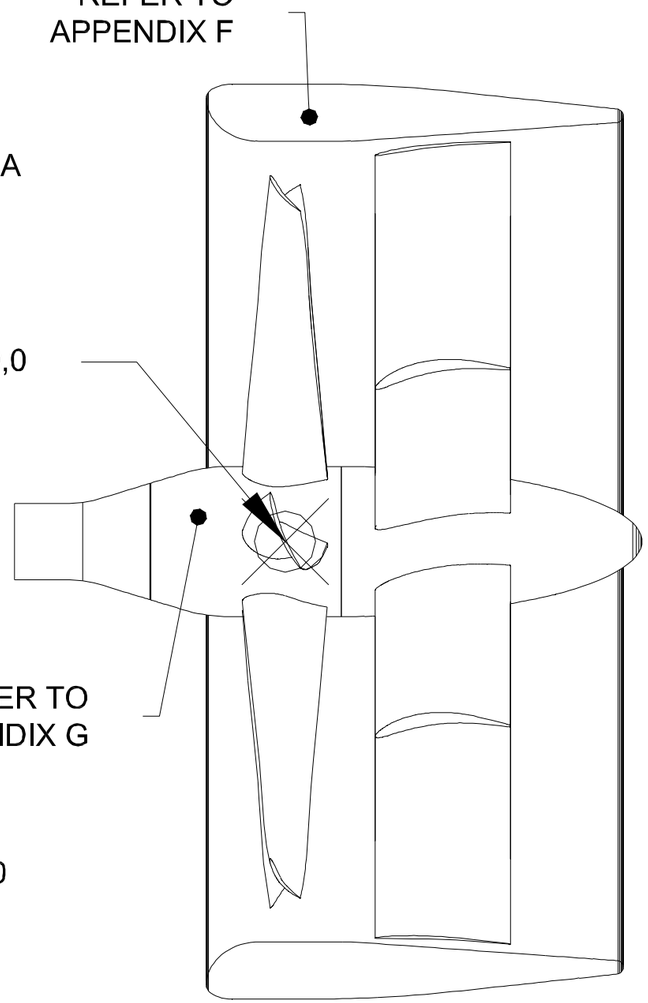
REFER TO
APPENDIX B

REFER TO
APPENDIX A

0,0,0

REFER TO
APPENDIX G

0,0,0



REFER TO
APPENDIX F

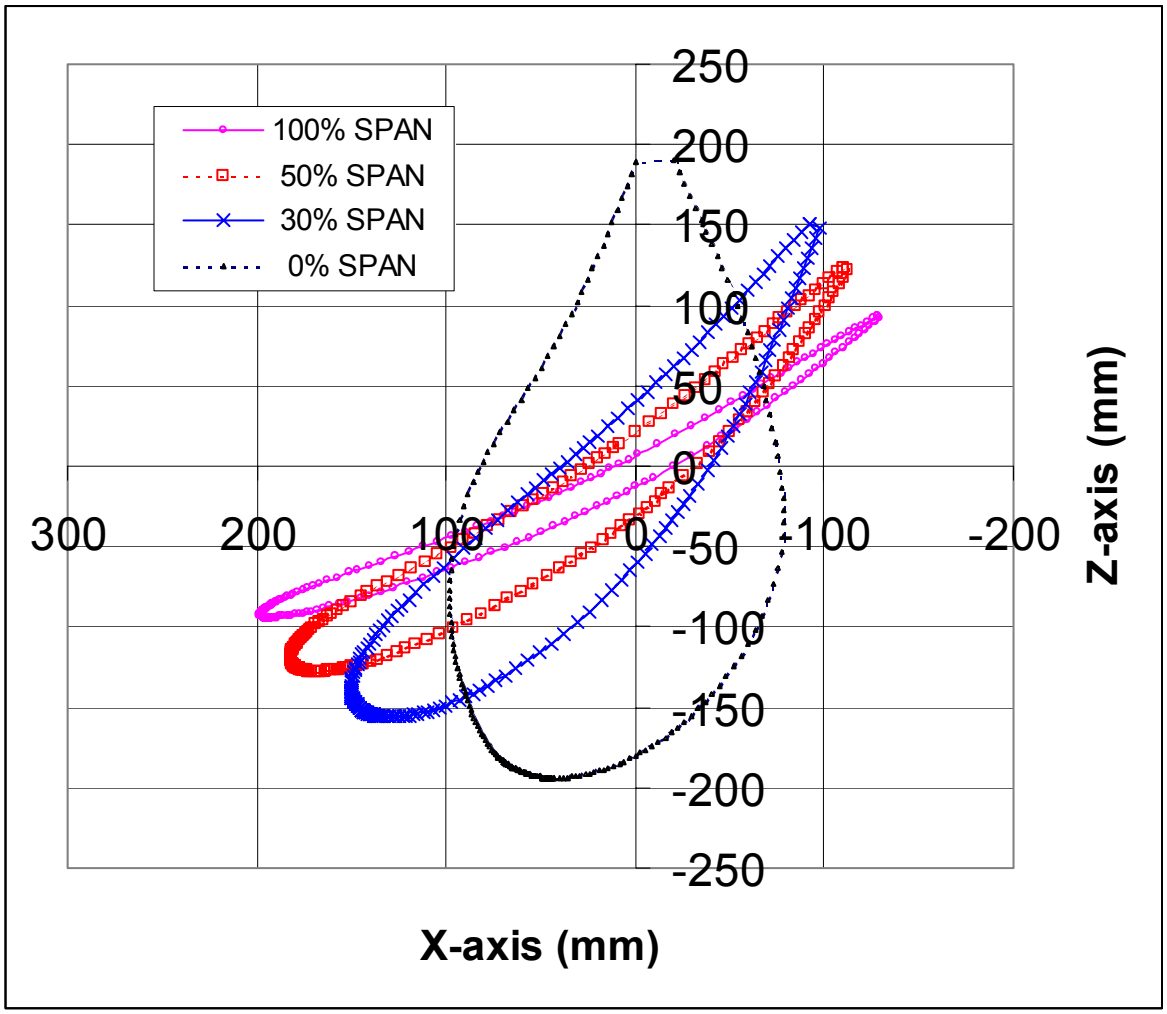
DWG TITLE: HLCAC PROPULSOR				
DRAWN BY: W. BAKER	SIZE: A1	CAGE CODE: 9N195	DWG NO.: 755-05	REV.: -
ISSUED: 10-3-03	SCALE: 1:10		SHEET: 2	

CDIM-SDD DWG. #755-05 HLCAC Propulsor

APPENDIX A

PROPELLER OFFSETS

The unwrapped propeller sections at several spans are shown in the Figure below. The X, Y, Z coordinates around the propeller blade from 0 to 100-percent span at 10-percent span increments is shown in the tables below. The data follows the right hand rule with the positive Z-axis being along the shaft. The propeller rotation as presented is for a counter-clockwise rotation when looking into the propeller inlet. All dimensions are presented in millimeters. Six identical propeller blades are used with a space of 60 degrees between each. The coordinate (0, 0, 0) represents the centerline location of the propeller.



0% SPAN			10% SPAN			20% SPAN			30% SPAN		
X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
-0.5126	338.0736	189.4600	-33.2054	482.1947	176.8987	-65.8900	625.1363	164.3461	-91.6011	768.4213	150.9140
1.9957	338.0681	181.9460	-30.1212	482.3972	170.1615	-62.2331	625.5110	158.3855	-87.5730	768.8909	145.7383
4.5037	338.0440	174.4310	-27.0316	482.5802	163.4154	-58.5658	625.8649	152.4083	-83.5245	769.3411	140.5316
7.0112	338.0013	166.9250	-23.9362	482.7436	156.6658	-54.8873	626.1984	146.4152	-79.4575	769.7719	135.2980
9.5230	337.9399	159.4360	-20.8365	482.8873	149.9149	-51.2047	626.5103	140.4022	-75.3840	770.1814	130.0310
12.0473	337.8593	151.9920	-17.7351	483.0111	143.1889	-47.5325	626.7996	134.3942	-71.3255	770.5679	124.7509
14.5985	337.7587	144.6120	-14.6206	483.1154	136.5081	-43.8611	627.0671	128.4126	-67.2752	770.9320	119.4791
17.1875	337.6368	137.2960	-11.4787	483.2003	129.8706	-40.1734	627.3143	122.4534	-63.2155	771.2756	114.2122
19.8220	337.4924	130.0450	-8.3015	483.2653	123.2774	-36.4617	627.5410	116.5179	-59.1380	771.5988	108.9502
22.5087	337.3239	122.8630	-5.0829	483.3100	116.7332	-32.7201	627.7471	110.6113	-55.0371	771.9022	103.6982
25.2528	337.1295	115.7550	-1.8167	483.3332	110.2419	-28.9420	627.9326	104.7365	-50.9059	772.1856	98.4583
28.0584	336.9076	108.7190	1.5024	483.3343	103.8027	-25.1207	628.0970	98.8939	-46.7363	772.4493	93.2313
30.9284	336.6563	101.7540	4.8783	483.3120	97.4150	-21.2516	628.2399	93.0833	-42.5223	772.6927	88.0170
33.8656	336.3735	94.8569	8.3149	483.2651	91.0770	-17.3298	628.3603	87.3043	-38.2580	772.9154	82.8150
36.8706	336.0574	88.0256	11.8146	483.1923	84.7876	-13.3513	628.4575	81.5566	-33.9377	773.1174	77.6252
39.9451	335.7058	81.2525	15.3800	483.0919	78.5415	-9.3123	628.5303	75.8373	-29.5555	773.2972	72.4452
43.0886	335.3169	74.5306	19.0127	482.9626	72.3339	-5.2099	628.5777	70.1438	-25.1042	773.4545	67.2706
46.3011	334.8884	67.8486	22.7141	482.8026	66.1571	-1.0411	628.5984	64.4719	-20.5762	773.5883	62.0945
49.5820	334.4184	61.1939	26.4853	482.6105	60.0022	3.1964	628.5911	58.8169	-15.9641	773.6971	56.9108
52.9305	333.9048	54.5502	30.3270	482.3843	53.8583	7.5052	628.5544	53.1729	-11.2604	773.7799	51.7134
56.3451	333.3456	47.8981	34.2396	482.1224	47.7127	11.8868	628.4868	47.5340	-6.4553	773.8349	46.4928
59.8250	332.7386	41.2138	38.2306	481.8223	41.5375	16.3570	628.3863	41.8685	-1.5236	773.8603	41.2149
63.3690	332.0819	34.4655	42.3178	481.4805	35.2827	20.9524	628.2499	36.1077	3.5788	773.8535	35.8155
66.9770	331.3731	27.6103	46.5185	481.0928	28.8960	25.7084	628.0732	30.1899	8.8949	773.8107	30.2398
70.6490	330.6097	20.5842	50.8425	480.6552	22.3279	30.6443	627.8519	24.0802	14.4556	773.7268	24.4608
74.3856	329.7890	13.2875	55.2912	480.1637	15.5228	35.7618	627.5811	17.7673	20.2751	773.5963	18.4807
76.9414	329.2021	8.1364	58.2856	479.8094	10.8364	39.1638	627.3781	13.5455	23.9488	773.4911	14.7275
79.5261	328.5873	2.7090	61.3299	479.4298	5.9580	42.6354	627.1517	9.2161	27.7183	773.3652	10.9103
82.1338	327.9452	-3.1340	64.4196	479.0244	0.8030	46.1730	626.9011	4.7498	31.5836	773.2170	7.0319
84.7350	327.2828	-9.6927	67.5366	478.5949	-4.8168	49.7711	626.6258	0.0700	35.5482	773.0449	3.0882
87.2862	326.6116	-16.9973	70.6568	478.1443	-10.9253	53.4257	626.3248	-4.8407	39.6186	772.8470	-0.9289
89.6949	325.9584	-25.0103	73.7252	477.6807	-17.5052	57.1219	625.9984	-9.9853	43.8028	772.6211	-5.0299
91.7762	325.3785	-33.5334	76.6283	477.2237	-24.4406	60.8237	625.6496	-15.3304	48.1114	772.3648	-9.2285
93.3982	324.9166	-42.0171	79.2891	476.7888	-31.3998	64.5129	625.2800	-20.7626	52.5606	772.0747	-13.5448
94.6182	324.5634	-50.0889	81.7557	476.3719	-38.1679	68.2280	624.8855	-26.2255	57.1778	771.7466	-18.0135
95.5126	324.3014	-57.6337	84.0963	475.9644	-44.7030	72.0280	624.4590	-31.7500	62.0065	771.3737	-22.6944
96.1210	324.1216	-64.6177	86.3691	475.5573	-51.0359	75.9891	623.9893	-37.4322	67.1215	770.9454	-27.6953
96.4673	324.0187	-71.0328	88.6158	475.1437	-57.2120	80.1699	623.4659	-43.3708	72.5955	770.4493	-33.1349
96.6063	323.9772	-76.9538	90.8589	474.7199	-63.2906	84.5589	622.8859	-49.6102	78.4249	769.8777	-39.0646
96.5925	323.9814	-82.4766	93.0392	474.2973	-69.2385	88.9787	622.2699	-55.9866	84.4039	769.2452	-45.2965
96.4657	324.0191	-87.6824	95.0865	473.8911	-74.9720	93.2456	621.6448	-62.2513	90.2840	768.5771	-51.5194
96.2545	324.0819	-92.6339	96.9762	473.5081	-80.4593	97.2797	621.0262	-68.2774	95.9601	767.8892	-57.5663
95.9786	324.1637	-97.3757	98.6844	473.1551	-85.6842	101.0123	620.4302	-73.9877	101.3684	767.1940	-63.3512
95.6419	324.2632	-101.9180	100.1805	472.8406	-90.6184	104.3772	619.8729	-79.3151	106.4466	766.5059	-68.8094
95.2478	324.3792	-106.2710	101.4384	472.5722	-95.2396	107.3181	619.3705	-84.2048	111.1294	765.8409	-73.8810
94.8006	324.5102	-110.4530	102.4592	472.3519	-99.5572	109.8334	618.9294	-88.6574	115.3783	765.2124	-78.5401
94.3132	324.6522	-114.5000	103.2858	472.1719	-103.6254	111.9971	618.5415	-92.7456	119.1743	764.6304	-82.7920
93.7873	324.8045	-118.4270	103.9506	472.0261	-107.4840	113.8743	618.1988	-96.5347	122.4693	764.1096	-86.6232
93.2211	324.9675	-122.2350	104.4755	471.9102	-111.1559	115.5110	617.8950	-100.0707	125.2576	763.6574	-90.0422
92.6107	325.1420	-125.9200	104.8753	471.8214	-114.6565	116.9412	617.6260	-103.3874	127.6406	763.2628	-93.1289
91.9351	325.3336	-129.4310	105.1470	471.7609	-117.9631	118.1792	617.3903	-106.4899	129.7398	762.9087	-95.9704
91.2782	325.5185	-132.4310	105.4620	471.6907	-121.0565	119.4838	617.1390	-109.6773	132.0567	762.5111	-99.1921
90.5794	325.7137	-135.3140	105.6724	471.6436	-123.9975	120.6195	616.9181	-112.6767	134.1240	762.1501	-102.1898
89.8446	325.9171	-138.0930	105.7995	471.6151	-126.8107	121.6237	616.7209	-115.5245	135.9972	761.8182	-105.0099
89.0794	326.1271	-140.7820	105.8680	471.5997	-129.5242	122.5401	616.5396	-118.2628	137.7315	761.5065	-107.7002
88.3057	326.3375	-143.4300	105.9125	471.5898	-132.1891	123.4164	616.3647	-120.9451	139.3735	761.2078	-110.3062
87.5413	326.5433	-146.0820	105.9266	471.5865	-134.8207	124.2216	616.2028	-123.5569	140.8914	760.9282	-112.8064
86.7781	326.7470	-148.7270	105.8832	471.5963	-137.3945	124.9089	616.0640	-126.0597	142.2444	760.6764	-115.1708
86.0099	326.9500	-151.3570	105.7689	471.6219	-139.8994	125.4583	615.9523	-128.4397	143.4139	760.4568	-117.3875
85.2299	327.1542	-153.9640	105.5853	471.6630	-142.3361	125.8800	615.8662	-130.7063	144.4104	760.2682	-119.4672
84.4302	327.3615	-156.5350	105.3437	471.7171	-144.7105	126.2044	615.7998	-132.8840	145.2680	760.1047	-121.4385
83.6035	327.5736	-159.0610	105.0508	471.7823	-147.0278	126.4531	615.7488	-134.9926	146.0125	759.9622	-123.3241
82.7421	327.7923	-161.5280	104.7079	471.8587	-149.2837	126.6355	615.7114	-137.0378	146.6610	759.8373	-125.1359
81.8320	328.0206	-163.9090	104.3112	471.9465	-151.4662	126.7592	615.6859	-139.0219	147.2310	759.7271	-126.8874
80.8717	328.2587	-166.1980	103.8635	472.0453	-153.5744	126.8309	615.6710	-140.9495	147.7321	759.6298	-128.5863
79.8622	328.5058	-168.3960	103.3648	472.1546	-155.6081	126.8493	615.6673	-142.8193	148.1667	759.5450	-130.2333

78.8044	328.7611	-170.5050	102.8129	472.2751	-157.5668	126.8092	615.6755	-144.6280	148.5312	759.4739	-131.8259
77.6991	329.0241	-172.5240	102.2065	472.4067	-159.4466	126.7071	615.6967	-146.3694	148.8246	759.4165	-133.3605
76.5471	329.2940	-174.4540	101.5426	472.5499	-161.2463	126.5363	615.7317	-148.0390	149.0426	759.3738	-134.8339
75.3489	329.5703	-176.2960	100.8186	472.7049	-162.9636	126.2911	615.7821	-149.6320	149.1818	759.3464	-136.2427
74.1054	329.8521	-178.0500	100.0341	472.8715	-164.5974	125.9692	615.8480	-151.1459	149.2414	759.3347	-137.5861
73.7116	329.9404	-178.5760	99.7771	472.9259	-165.1195	125.8499	615.8724	-151.6644	149.2462	759.3337	-138.0858
73.3134	330.0291	-179.0930	99.5125	472.9816	-165.6327	125.7198	615.8990	-152.1739	149.2394	759.3350	-138.5776
72.9111	330.1182	-179.6030	99.2416	473.0385	-166.1375	125.5811	615.9272	-152.6735	149.2226	759.3384	-139.0594
72.5046	330.2077	-180.1040	98.9644	473.0966	-166.6332	125.4340	615.9573	-153.1639	149.1959	759.3436	-139.5332
72.0941	330.2975	-180.5980	98.6809	473.1558	-167.1216	125.2782	615.9890	-153.6468	149.1598	759.3506	-139.9996
71.6797	330.3877	-181.0830	98.3917	473.2161	-167.6017	125.1148	616.0222	-154.1220	149.1147	759.3595	-140.4593
71.2613	330.4782	-181.5620	98.0981	473.2770	-168.0757	124.9467	616.0563	-154.5912	149.0635	759.3696	-140.9131
70.8389	330.5690	-182.0320	97.7997	473.3387	-168.5423	124.7729	616.0914	-155.0546	149.0058	759.3810	-141.3618
70.4126	330.6601	-182.4950	97.4979	473.4010	-169.0038	124.5961	616.1273	-155.5146	148.9434	759.3931	-141.8073
69.9824	330.7514	-182.9500	97.1929	473.4637	-169.4591	124.4168	616.1635	-155.9703	148.8777	759.4061	-142.2492
69.5481	330.8430	-183.3970	96.8839	473.5270	-169.9088	124.2336	616.2004	-156.4226	148.8070	759.4199	-142.6886
69.1099	330.9348	-183.8370	96.5701	473.5911	-170.3519	124.0448	616.2386	-156.8689	148.7302	759.4349	-143.1223
68.6677	331.0269	-184.2690	96.2509	473.6561	-170.7872	123.8489	616.2779	-157.3077	148.6462	759.4515	-143.5500
68.2213	331.1191	-184.6930	95.9254	473.7221	-171.2139	123.6447	616.3189	-157.7370	148.5527	759.4697	-143.9694
67.7706	331.2117	-185.1080	95.5928	473.7893	-171.6314	123.4303	616.3619	-158.1573	148.4481	759.4902	-144.3801
67.3157	331.3044	-185.5150	95.2533	473.8578	-172.0403	123.2066	616.4067	-158.5681	148.3318	759.5129	-144.7814
66.8557	331.3976	-185.9120	94.9067	473.9273	-172.4392	122.9734	616.4532	-158.9689	148.2043	759.5377	-145.1731
66.3907	331.4910	-186.2990	94.5527	473.9980	-172.8277	122.7307	616.5016	-159.3591	148.0644	759.5650	-145.5545
65.9190	331.5851	-186.6730	94.1905	474.0701	-173.2050	122.4780	616.5519	-159.7399	147.9126	759.5947	-145.9269
65.4301	331.6820	-187.0120	93.8138	474.1448	-173.5569	122.2136	616.6042	-160.1046	147.7500	759.6262	-146.2898
64.9224	331.7817	-187.3130	93.4221	474.2221	-173.8820	121.9377	616.6589	-160.4539	147.5768	759.6599	-146.6441
64.4064	331.8823	-187.5970	93.0218	474.3008	-174.1934	121.6531	616.7151	-160.7930	147.3939	759.6954	-146.9905
63.8862	331.9828	-187.8730	92.6159	474.3802	-174.4974	121.3615	616.7725	-161.1248	147.2023	759.7327	-147.3301
63.3638	332.0829	-188.1450	92.2057	474.4601	-174.7964	121.0634	616.8311	-161.4511	147.0022	759.7714	-147.6632
62.8403	332.1824	-188.4150	91.7922	474.5403	-175.0917	120.7597	616.8907	-161.7718	146.7950	759.8114	-147.9901
62.3156	332.2812	-188.6830	91.3758	474.6207	-175.3834	120.4511	616.9510	-162.0873	146.5811	759.8527	-148.3110
61.7904	332.3793	-188.9500	90.9562	474.7013	-175.6726	120.1373	617.0121	-162.3988	146.3606	759.8952	-148.6275
61.2645	332.4766	-189.2160	90.5346	474.7819	-175.9590	119.8195	617.0740	-162.7056	146.1351	759.9385	-148.9384
60.7384	332.5731	-189.4820	90.1109	474.8625	-176.2438	119.4978	617.1363	-163.0093	145.9047	759.9828	-149.2457
60.2120	332.6688	-189.7470	89.6852	474.9430	-176.5264	119.1726	617.1993	-163.3098	145.6693	760.0281	-149.5492
59.6842	332.7639	-190.0100	89.2549	475.0240	-176.8045	118.8392	617.2635	-163.6030	145.4232	760.0751	-149.8442
59.1561	332.8582	-190.2720	88.8229	475.1050	-177.0805	118.5029	617.3281	-163.8930	145.1732	760.1229	-150.1355
58.6276	332.9517	-190.5350	88.3884	475.1861	-177.3556	118.1618	617.3935	-164.1801	144.9173	760.1716	-150.4229
58.0988	333.0444	-190.7960	87.9519	475.2671	-177.6271	117.8170	617.4595	-164.4623	144.6563	760.2215	-150.7047
57.5692	333.1363	-191.0560	87.5122	475.3482	-177.8961	117.4668	617.5262	-164.7404	144.3886	760.2723	-150.9821
57.0385	333.2276	-191.3150	87.0698	475.4295	-178.1622	117.1118	617.5936	-165.0137	144.1147	760.3243	-151.2541
56.5067	333.3182	-191.5710	86.6239	475.5109	-178.4238	116.7512	617.6619	-165.2810	143.8333	760.3776	-151.5190
55.9728	333.4083	-191.8240	86.1741	475.5927	-178.6814	116.3847	617.7310	-165.5432	143.5444	760.4322	-151.7781
55.4347	333.4982	-192.0680	85.7183	475.6749	-178.9306	116.0106	617.8013	-165.7977	143.2457	760.4885	-152.0301
54.8880	333.5886	-192.2950	85.2538	475.7584	-179.1664	115.6277	617.8732	-166.0421	142.9375	760.5466	-152.2741
54.3230	333.6810	-192.4830	84.7749	475.8440	-179.3743	115.2340	617.9467	-166.2701	142.6194	760.6062	-152.5094
53.7409	333.7753	-192.6370	84.2813	475.9317	-179.5580	114.8280	618.0223	-166.4837	142.2898	760.6680	-152.7358
53.1522	333.8695	-192.7770	83.7794	476.0203	-179.7293	114.4122	618.0994	-166.6863	141.9482	760.7318	-152.9523
52.5584	333.9635	-192.9070	83.2706	476.1095	-179.8905	113.9875	618.1779	-166.8790	141.5952	760.7975	-153.1587
51.9601	334.0571	-193.0270	82.7546	476.1995	-180.0418	113.5527	618.2579	-167.0616	141.2299	760.8655	-153.3560
51.3573	334.1504	-193.1380	82.2315	476.2901	-180.1837	113.1085	618.3394	-167.2344	140.8533	760.9352	-153.5434
50.7502	334.2431	-193.2400	81.7014	476.3813	-180.3162	112.6543	618.4222	-167.3974	140.4651	761.0070	-153.7218
50.1392	334.3353	-193.3350	81.1654	476.4729	-180.4409	112.1923	618.5061	-167.5520	140.0683	761.0802	-153.8923
49.5241	334.4270	-193.4210	80.6234	476.5649	-180.5571	111.7224	618.5912	-167.6984	139.6636	761.1545	-154.0562
48.9052	334.5180	-193.5000	80.0768	476.6570	-180.6670	111.2471	618.6769	-167.8392	139.2527	761.2298	-154.2154
48.2826	334.6085	-193.5700	79.5269	476.7490	-180.7701	110.7689	618.7627	-167.9756	138.8379	761.3055	-154.3708
47.6561	334.6983	-193.6330	78.9738	476.8412	-180.8680	110.2879	618.8484	-168.1088	138.4193	761.3817	-154.5236
47.0258	334.7874	-193.6880	78.4168	476.9330	-180.9603	109.8031	618.9346	-168.2384	137.9955	761.4587	-154.6730
46.3915	334.8759	-193.7350	77.8554	477.0249	-181.0455	109.3137	619.0215	-168.3616	137.5659	761.5364	-154.8168
45.7535	334.9636	-193.7750	77.2896	477.1170	-181.1242	108.8189	619.1085	-168.4793	137.1297	761.6151	-154.9552
45.1117	335.0507	-193.8070	76.7180	477.2093	-181.1954	108.3162	619.1967	-168.5898	136.6842	761.6951	-155.0872
44.4662	335.1370	-193.8300	76.1410	477.3016	-181.2575	107.8065	619.2857	-168.6913	136.2306	761.7764	-155.2111
43.8166	335.2225	-193.8460	75.5573	477.3944	-181.3120	107.2877	619.3758	-168.7841	135.7668	761.8592	-155.3265
43.1635	335.3072	-193.8540	74.9675	477.4873	-181.3579	106.7598	619.4670	-168.8683	135.2924	761.9437	-155.4339
42.5060	335.3912	-193.8540	74.3706	477.5806	-181.3949	106.2225	619.5593	-168.9422	134.8074	762.0295	-155.5316
40.3552	335.6568	-193.7970	72.5080	477.8670	-181.4381	104.6436	619.8280	-169.0858	133.4937	762.2609	-155.7393
38.1634	335.9131	-193.6550	70.5878	478.1544	-181.3996	102.9901	620.1049	-169.1511	132.1018	762.5033	-155.8814
35.9310	336.1592	-193.4290	68.6122	478.4420	-181.2814	101.2663	620.3886	-169.1406	130.6336	762.7562	-155.9589

33.6591	336.3943	-193.1200	66.5836	478.7285	-181.0865	99.4764	620.6782	-169.0599	129.0916	763.0187	-155.9756
31.3479	336.6175	-192.7310	64.5062	479.0128	-180.8203	97.6277	620.9717	-168.9166	127.4798	763.2896	-155.9358
28.9993	336.8280	-192.2640	62.3839	479.2939	-180.4862	95.7273	621.2674	-168.7157	125.8026	763.5679	-155.8432
26.6140	337.0248	-191.7220	60.2190	479.5706	-180.0885	93.7786	621.5646	-168.4624	124.0609	763.8528	-155.6996
24.1933	337.2072	-191.1080	58.0140	479.8423	-179.6300	91.7853	621.8621	-168.1597	122.2553	764.1438	-155.5061
21.7351	337.3746	-190.4200	55.7632	480.1091	-179.1062	89.7382	622.1608	-167.8006	120.3744	764.4424	-155.2535
19.2280	337.5268	-189.6320	53.4551	480.3716	-178.4967	87.6259	622.4617	-167.3701	118.4036	764.7501	-154.9301
16.6687	337.6628	-188.7340	51.0756	480.6304	-177.7855	85.4238	622.7677	-166.8462	116.3139	765.0707	-154.5133
14.0553	337.7817	-187.7190	48.6096	480.8860	-176.9539	83.1035	623.0817	-166.1986	114.0712	765.4083	-153.9704
11.3865	337.8822	-186.5770	46.0362	481.1393	-175.9784	80.6246	623.4073	-165.3899	111.6326	765.7678	-153.2657
8.6582	337.9631	-185.2890	43.3427	481.3893	-174.8357	77.9663	623.7454	-164.3930	108.9781	766.1500	-152.3760
5.8649	338.0231	-183.8340	40.5284	481.6345	-173.5137	75.1319	624.0931	-163.2041	106.1107	766.5524	-151.3010
3.0018	338.0607	-182.1850	37.6063	481.8714	-172.0071	72.1533	624.4445	-161.8400	103.0564	766.9690	-150.0571
0.0920	338.0740	-180.3730	34.6057	482.0963	-170.3461	69.0656	624.7935	-160.3303	99.8361	767.3949	-148.6573
-2.8445	338.0620	-178.4330	31.5378	482.3067	-168.5481	65.8715	625.1383	-158.6746	96.4467	767.8282	-147.0897
-5.8061	338.0241	-176.3630	28.3910	482.5021	-166.5974	62.5461	625.4797	-156.8438	92.8594	768.2703	-145.3222
-8.7913	337.9597	-174.1640	25.1507	482.6818	-164.4791	59.0590	625.8187	-154.8061	89.0267	768.7239	-143.3085
-12.1528	337.8555	-171.5550	21.8089	482.8444	-162.1342	55.7452	626.1226	-152.7254	85.6875	769.1032	-141.4416
-15.5454	337.7164	-168.7710	18.3635	482.9876	-159.5878	52.2581	626.4232	-150.4169	82.0769	769.4970	-139.3075
-18.9950	337.5400	-165.7410	14.7748	483.1107	-156.7690	48.5445	626.7220	-147.8102	78.0410	769.9167	-136.7664
-22.5023	337.3243	-162.4400	11.0216	483.2110	-153.6354	44.5635	627.0176	-144.8459	73.4737	770.3660	-133.7013
-26.0654	337.0677	-158.8470	7.0812	483.2847	-150.1405	40.2675	627.3082	-141.4514	68.3843	770.8344	-130.0758
-29.6757	336.7690	-154.9500	2.9351	483.3278	-146.2372	35.6098	627.5898	-137.5438	62.8453	771.3057	-125.9018
-33.3158	336.4284	-150.7660	-1.4263	483.3345	-141.8953	30.5523	627.8564	-133.0448	56.9017	771.7671	-121.1708
-36.9793	336.0455	-146.2860	-5.9851	483.2996	-137.1012	25.1240	628.0969	-127.9359	50.6115	772.2050	-115.8941
-40.6591	335.6201	-141.4990	-10.6983	483.2183	-131.8661	19.4039	628.2997	-122.2506	44.0588	772.6067	-110.1126
-44.3564	335.1515	-136.3620	-15.5169	483.0875	-126.1942	13.4908	628.4545	-116.0405	37.3399	772.9605	-103.8823
-48.0714	334.6389	-130.8100	-20.3814	482.9067	-120.0877	7.5047	628.5544	-109.3757	30.5723	773.2577	-97.2747
-51.8013	334.0818	-124.7600	-25.2076	482.6789	-113.5532	1.6117	628.5972	-102.3528	23.9539	773.4910	-90.4175
-55.5361	333.4813	-118.1150	-29.8530	482.4138	-106.6637	-3.9122	628.5870	-95.2151	17.8162	773.6567	-83.6243
-59.2554	332.8405	-110.7490	-34.2244	482.1234	-99.4711	-8.8993	628.5363	-88.1932	12.3290	773.7635	-77.1713
-62.9130	332.1686	-102.5730	-38.3200	481.8152	-91.9416	-13.3928	628.4565	-81.3090	7.4066	773.8264	-71.0871
-66.4347	331.4822	-93.6195	-42.1548	481.4948	-84.0614	-17.4973	628.3557	-74.5024	2.9021	773.8563	-65.2904
-69.7242	330.8059	-83.9424	-45.7230	481.1692	-75.8214	-21.3005	628.2382	-67.7008	-1.3038	773.8607	-59.6938
-72.6261	330.1810	-73.6411	-48.9593	480.8506	-67.2553	-24.8313	628.1085	-60.8721	-5.2825	773.8438	-54.2402
-74.8924	329.6743	-63.1038	-51.7241	480.5610	-58.5893	-28.0645	627.9725	-54.0797	-9.0731	773.8086	-48.8989
-76.4041	329.3273	-52.9987	-53.9529	480.3159	-50.2292	-30.9946	627.8347	-47.4668	-12.7010	773.7576	-43.6508
-77.2853	329.1216	-43.6382	-55.7318	480.1128	-42.3622	-33.6683	627.6970	-41.0949	-16.1834	773.6926	-38.4830
-77.6518	329.0353	-35.1073	-57.1399	479.9473	-35.0358	-36.1257	627.5604	-34.9740	-19.5317	773.6154	-33.3866
-77.5983	329.0479	-27.3917	-58.2423	479.8147	-28.2366	-38.4000	627.4252	-29.0914	-22.7553	773.5271	-28.3546
-77.3005	329.1180	-20.1710	-59.1517	479.7034	-21.7638	-40.5373	627.2908	-23.3663	-25.8587	773.4297	-23.3840
-76.8341	329.2272	-13.2875	-59.9138	479.6089	-15.5228	-42.5515	627.1573	-17.7673	-28.8393	773.3243	-18.4807
-75.9128	329.4408	-3.5127	-60.8957	479.4852	-6.4364	-45.4733	626.9523	-9.3698	-33.4836	773.1371	-10.6411
-74.7818	329.6994	5.8965	-61.6306	479.3913	2.3420	-48.1123	626.7553	-1.2226	-37.7794	772.9391	-3.0308
-73.4820	329.9916	15.0476	-62.1433	479.3250	10.8689	-50.4749	626.5694	6.6797	-41.7380	772.7354	4.3383
-72.0370	330.3100	24.0055	-62.4593	479.2840	19.1898	-52.5884	626.3956	14.3634	-45.3929	772.5294	11.4824
-70.4611	330.6498	32.8108	-62.6126	479.2639	27.3554	-54.5061	626.2316	21.8890	-48.8040	772.3214	18.4560
-68.7628	331.0071	41.4887	-62.6352	479.2611	35.4128	-56.2838	626.0744	29.3259	-52.0335	772.1105	25.3251
-66.9478	331.3790	50.0554	-62.5431	479.2729	43.3862	-57.9472	625.9225	36.7060	-55.1173	771.8964	32.1263
-65.0205	331.7625	58.5202	-62.3421	479.2993	51.2837	-59.5034	625.7766	44.0362	-58.0713	771.6798	38.8723
-62.9840	332.1552	66.8881	-62.0358	479.3389	59.1086	-60.9564	625.6367	51.3186	-60.9043	771.4615	45.5679
-60.8421	332.5542	75.1625	-61.6284	479.3915	66.8636	-62.3102	625.5034	58.5545	-63.6258	771.2417	52.2180
-58.5984	332.9568	83.3446	-61.1236	479.4561	74.5490	-63.5688	625.3766	65.7438	-66.2445	771.0212	58.8275
-56.2573	333.3604	91.4368	-60.5263	479.5319	82.1665	-64.7372	625.2568	72.8871	-68.7692	770.8001	65.4000
-53.8236	333.7620	99.4395	-59.8413	479.6178	89.7162	-65.8202	625.1437	79.9842	-71.2064	770.5789	71.9365
-51.3027	334.1587	107.3560	-59.0746	479.7129	97.2003	-66.8243	625.0372	87.0365	-73.5636	770.3575	78.4387
-48.7007	334.5479	115.1880	-58.2325	479.8159	104.6200	-67.7561	624.9368	94.0446	-75.8485	770.1358	84.9075
-46.0243	334.9266	122.9380	-57.3221	479.9255	111.9773	-68.6230	624.8423	101.0100	-78.0692	769.9139	91.3443
-43.2810	335.2921	130.6100	-56.3511	480.0405	119.2746	-69.4333	624.7528	107.9332	-80.2348	769.6911	97.7495
-40.4793	335.6419	138.2080	-55.3289	480.1593	126.5154	-70.1968	624.6674	114.8176	-82.3559	769.4671	104.1262
-37.6279	335.9735	145.7390	-54.2649	480.2807	133.7054	-70.9242	624.5852	121.6673	-84.4434	769.2409	110.4779
-34.7366	336.2847	153.2090	-53.1679	480.4034	140.8486	-71.6235	624.5054	128.4848	-86.5050	769.0118	116.8047
-31.8184	336.5733	160.6140	-52.0513	480.5257	147.9397	-72.3086	624.4265	135.2630	-88.5553	768.7783	123.1006
-28.8872	336.8376	167.9800	-50.9338	480.6455	155.0019	-73.0033	624.3456	142.0225	-90.6196	768.5378	129.3840
-25.9508	337.0765	175.3310	-49.8207	480.7621	162.0582	-73.7102	624.2626	148.7852	-92.6958	768.2900	135.6713
-23.0138	337.2898	182.6790	-48.7048	480.8765	169.1088	-74.4110	624.1794	155.5397	-94.7577	768.0385	141.9431
-20.0760	337.4774	190.0340	-47.5821	480.9887	176.1535	-75.0986	624.0970	162.2757	-96.7932	767.7846	148.1802
-0.5126	338.0736	189.4600	-33.2054	482.1947	176.8987	-65.8900	625.1363	164.3461	-91.6011	768.4213	150.9140

40% SPAN			50% SPAN			60% SPAN			70% SPAN		
X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
-103.3953	913.2903	136.4461	-110.0777	1058.6797	123.6568	-113.8503	1204.2800	113.0283	-116.2487	1349.9161	104.6718
-99.4724	913.7258	132.1627	-106.4725	1059.0483	120.2631	-110.3093	1204.6095	109.9266	-112.9848	1350.1931	102.0700
-95.5195	914.1476	127.8355	-102.8444	1059.4067	116.8407	-106.7484	1204.9303	106.8038	-109.6893	1350.4648	99.4360
-91.5398	914.5546	123.4742	-99.1864	1059.7555	113.3841	-103.1620	1205.2426	103.6556	-106.3517	1350.7319	96.7606
-87.5421	914.9460	119.0728	-95.4973	1060.0944	109.8840	-99.5477	1205.5466	100.4730	-102.9675	1350.9940	94.0371
-83.5438	915.3197	114.6382	-91.7841	1060.4222	106.3321	-95.9138	1205.8412	97.2536	-99.5426	1351.2506	91.2633
-79.5462	915.6757	110.1867	-88.0543	1060.7385	102.7335	-92.2686	1206.1256	94.0019	-96.0864	1351.5009	88.4423
-75.5338	916.0154	105.7179	-84.2990	1061.0436	99.0902	-88.6067	1206.4000	90.7232	-92.6007	1351.7441	85.5818
-71.4948	916.3395	101.2286	-80.5030	1061.3384	95.3972	-84.9180	1206.6653	87.4177	-89.0814	1351.9806	82.6859
-67.4214	916.6484	96.7189	-76.6545	1061.6233	91.6466	-81.1932	1206.9216	84.0798	-85.5221	1352.2106	79.7544
-63.3059	916.9418	92.1897	-72.7342	1061.8989	87.8225	-77.3806	1207.1721	80.6542	-81.8755	1352.4363	76.7407
-59.1394	917.2198	87.6390	-68.7241	1062.1661	83.9106	-73.4312	1207.4187	77.0925	-78.0697	1352.6613	73.5732
-54.9128	917.4827	83.0647	-64.6129	1062.4241	79.9078	-69.3332	1207.6610	73.3920	-74.0670	1352.8862	70.2198
-50.6165	917.7297	78.4638	-60.3913	1062.6724	75.8130	-65.0899	1207.8972	69.5686	-69.8526	1353.1105	66.6752
-46.2415	917.9605	73.8329	-56.0494	1062.9103	71.6247	-60.7056	1208.1255	65.6394	-65.4313	1353.3314	62.9585
-41.7773	918.1744	69.1672	-51.5737	1063.1368	67.3380	-56.1777	1208.3445	61.6143	-60.8244	1353.5463	59.1053
-37.2100	918.3709	64.4562	-46.9470	1063.3512	62.9448	-51.4943	1208.5531	57.4921	-56.0349	1353.7531	55.1340
-32.5195	918.5490	59.6815	-42.1399	1063.5525	58.4212	-46.6337	1208.7504	53.2617	-51.0522	1353.9501	51.0486
-27.6818	918.7075	54.8216	-37.1096	1063.7399	53.7319	-41.5607	1208.9354	48.9000	-45.8518	1354.1361	46.8407
-22.6742	918.8447	49.8578	-31.8122	1063.9116	48.8427	-36.2275	1209.1069	44.3731	-40.3953	1354.3098	42.4898
-17.4676	918.9584	44.7657	-26.2067	1064.0643	43.7296	-30.5846	1209.2628	39.6512	-34.6200	1354.4698	37.9563
-12.0293	919.0457	39.5172	-20.2555	1064.1942	38.3746	-24.5761	1209.4000	34.7025	-28.4378	1354.6138	33.1825
-6.3225	919.1027	34.0850	-13.9156	1064.2960	32.7622	-18.1350	1209.5137	29.4921	-21.7384	1354.7378	28.1005
-0.3082	919.1243	28.4437	-7.1387	1064.3630	26.8746	-11.1881	1209.5979	23.9857	-14.4031	1354.8357	22.6465
6.0571	919.1044	22.5671	0.1306	1064.3870	20.6936	-3.6624	1209.6442	18.1581	-6.3362	1354.8973	16.7910
12.8172	919.0350	16.4315	7.9508	1064.3574	14.2007	4.5032	1209.6412	12.0008	2.4993	1354.9099	10.5636
16.5565	918.9753	13.0702	11.8203	1064.3214	11.0465	8.5205	1209.6196	9.0342	6.7214	1354.8955	7.6590
20.4220	918.8976	9.6280	15.8289	1064.2693	7.8196	12.6884	1209.5831	6.0010	11.0927	1354.8668	4.7025
24.4196	918.8000	6.1021	19.9817	1064.1995	4.5186	17.0094	1209.5300	2.9033	15.6109	1354.8223	1.7008
28.5543	918.6808	2.4911	24.2839	1064.1100	1.1433	21.4863	1209.4587	-0.2560	20.2770	1354.7605	-1.3423
32.8298	918.5379	-1.2047	28.7413	1063.9989	-2.3076	26.1236	1209.3676	-3.4757	25.0941	1354.6799	-4.4243
37.2507	918.3693	-4.9863	33.3631	1063.8640	-5.8384	30.9315	1209.2540	-6.7594	30.0675	1354.5786	-7.5449
41.8244	918.1724	-8.8578	38.1609	1063.7028	-9.4551	35.9227	1209.1160	-10.1124	35.2053	1354.4548	-10.7049
46.5617	917.9442	-12.8274	43.1484	1063.5121	-13.1656	41.1117	1208.9508	-13.5406	40.5183	1354.3063	-13.9073
51.4798	917.6816	-16.9100	48.3432	1063.2886	-16.9807	46.5151	1208.7550	-17.0517	46.0240	1354.1304	-17.1592
56.6025	917.3799	-21.1281	53.7634	1063.0282	-20.9133	52.1518	1208.5249	-20.6538	51.7521	1353.9235	-20.4762
61.9667	917.0332	-25.5194	59.4192	1062.7272	-24.9688	58.0411	1208.2563	-24.3561	57.7444	1353.6812	-23.8822
67.6232	916.6335	-30.1431	65.2989	1062.3822	-29.1327	64.1890	1207.9454	-28.1583	64.0203	1353.3989	-27.3867
73.6029	916.1727	-35.0512	71.3781	1061.9910	-33.3794	70.5716	1207.5892	-32.0377	70.5463	1353.0745	-30.9627
79.8148	915.6525	-40.1813	77.6303	1061.5522	-37.6800	77.1594	1207.1863	-35.9664	77.2802	1352.7065	-34.5722
86.0873	915.0839	-45.3634	84.0359	1061.0643	-42.0079	83.9325	1206.7343	-39.9242	84.2074	1352.2930	-38.1947
92.3589	914.4723	-50.5021	90.5895	1060.5249	-46.3489	90.8803	1206.2308	-43.8982	91.3289	1351.8307	-41.8264
98.6306	913.8171	-55.5783	97.2889	1059.9315	-50.7015	97.9995	1205.6733	-47.8813	98.6455	1351.3165	-45.4671
104.8907	913.1198	-60.5824	104.1254	1059.2817	-55.0644	105.2913	1205.0585	-51.8709	106.1554	1350.7473	-49.1165
111.0953	912.3856	-65.4894	111.0597	1058.5771	-59.4261	112.7305	1204.3853	-55.8619	113.8461	1350.1207	-52.7719
117.1386	911.6295	-70.2386	117.9916	1057.8269	-63.7430	120.2396	1203.6588	-59.8284	121.6750	1349.4377	-56.4213
122.7899	910.8855	-74.6942	124.7047	1057.0565	-67.9105	127.6176	1202.8990	-63.6899	129.5125	1348.7081	-60.0207
127.7525	910.2028	-78.6731	130.8873	1056.3088	-71.7699	134.4404	1202.1555	-67.2649	136.9525	1347.9729	-63.4195
131.8620	909.6165	-82.0749	136.2784	1055.6267	-75.1871	140.2861	1201.4874	-70.3704	143.2371	1347.3196	-66.3231
135.2474	909.1193	-84.9916	140.8257	1055.0298	-78.1355	145.1003	1200.9155	-72.9868	148.0567	1346.7985	-68.6103
138.1484	908.6829	-87.5864	144.6314	1054.5148	-80.6713	149.1638	1200.4175	-75.2400	152.1479	1346.3425	-70.5865
141.6550	908.1429	-90.8159	149.4159	1053.8474	-83.9677	154.5030	1199.7421	-78.2608	157.9419	1345.6752	-73.4109
144.6737	907.6669	-93.7169	153.3177	1053.2869	-86.7623	158.9687	1199.1586	-80.8506	162.7971	1345.0963	-75.8270
147.3516	907.2359	-96.3823	156.6491	1052.7966	-89.2312	162.7782	1198.6475	-83.1199	166.9138	1344.5918	-77.9221
149.7795	906.8383	-98.8727	159.5842	1052.3557	-91.4758	166.0830	1198.1940	-85.1481	170.4314	1344.1504	-79.7636
151.9939	906.4698	-101.2185	162.1864	1051.9579	-93.5380	168.9752	1197.7896	-86.9834	173.4527	1343.7638	-81.4011
154.0014	906.1309	-103.4278	164.4943	1051.5995	-95.4413	171.5205	1197.4276	-88.6604	176.0630	1343.4244	-82.8735
155.8036	905.8228	-105.5061	166.5327	1051.2786	-97.2029	173.7760	1197.1024	-90.2070	178.3600	1343.1213	-84.2219
157.4019	905.5464	-107.4540	168.3264	1050.9928	-98.8351	175.7894	1196.8085	-91.6450	180.4341	1342.8442	-85.4829
158.8063	905.3011	-109.2793	169.9120	1050.7377	-100.3584	177.5954	1196.5417	-92.9908	182.3379	1342.5870	-86.6781
160.0400	905.0839	-110.9968	171.3208	1050.5089	-101.7907	179.2202	1196.2994	-94.2566	184.1034	1342.3462	-87.8201
161.1223	904.8918	-112.6187	172.5811	1050.3025	-103.1452	180.6860	1196.0789	-95.4513	185.7516	1342.1190	-88.9168
162.0752	904.7217	-114.1573	173.7150	1050.1156	-104.4341	182.0109	1195.8781	-96.5828	187.2903	1341.9052	-89.9711
162.9214	904.5696	-115.6276	174.7448	1049.9447	-105.6686	183.2079	1195.6952	-97.6570	188.7126	1341.7059	-90.9799
163.6717	904.4342	-117.0370	175.6806	1049.7886	-106.8547	184.2875	1195.5293	-98.6795	190.0101	1341.5228	-91.9398
164.3336	904.3142	-118.3890	176.5273	1049.6465	-107.9929	185.2626	1195.3785	-99.6549	191.1778	1341.3569	-92.8478

164.9101	904.2093	-119.6857	177.2892	1049.5181	-109.0858	186.1452	1195.2415	-100.5879	192.2150	1341.2086	-93.7038
165.4056	904.1187	-120.9303	177.9699	1049.4028	-110.1354	186.9474	1195.1162	-101.4860	193.1276	1341.0775	-94.5105
165.8247	904.0419	-122.1255	178.5752	1049.3002	-111.1442	187.6861	1195.0004	-102.3559	193.9302	1340.9617	-95.2730
166.1720	903.9782	-123.2733	179.1075	1049.2094	-112.1129	188.3649	1194.8937	-103.1979	194.6432	1340.8583	-95.9998
166.4504	903.9270	-124.3774	179.5657	1049.1310	-113.0429	188.9789	1194.7968	-104.0109	195.2863	1340.7648	-96.6991
166.5501	903.9086	-124.8323	179.7490	1049.0996	-113.4516	189.2325	1194.7566	-104.3671	195.5573	1340.7253	-97.0078
166.6398	903.8920	-125.2805	179.9193	1049.0704	-113.8527	189.4723	1194.7186	-104.7170	195.8177	1340.6874	-97.3118
166.7178	903.8777	-125.7207	180.0739	1049.0439	-114.2461	189.6966	1194.6830	-105.0598	196.0662	1340.6510	-97.6117
166.7851	903.8653	-126.1550	180.2153	1049.0197	-114.6334	189.9073	1194.6495	-105.3963	196.3046	1340.6162	-97.9068
166.8433	903.8545	-126.5825	180.3441	1048.9974	-115.0126	190.1028	1194.6184	-105.7262	196.5314	1340.5830	-98.1980
166.8921	903.8456	-127.0039	180.4612	1048.9774	-115.3857	190.2847	1194.5895	-106.0495	196.7496	1340.5509	-98.4852
166.9313	903.8383	-127.4194	180.5671	1048.9592	-115.7526	190.4540	1194.5625	-106.3671	196.9567	1340.5205	-98.7683
166.9629	903.8325	-127.8300	180.6625	1048.9427	-116.1149	190.6108	1194.5375	-106.6794	197.1544	1340.4915	-99.0477
166.9867	903.8280	-128.2356	180.7502	1048.9276	-116.4730	190.7572	1194.5140	-106.9855	197.3424	1340.4639	-99.3228
167.0046	903.8248	-128.6371	180.8307	1048.9138	-116.8274	190.8924	1194.4924	-107.2879	197.5195	1340.4377	-99.5941
167.0170	903.8224	-129.0346	180.9072	1048.9006	-117.1775	191.0175	1194.4725	-107.5844	197.6852	1340.4132	-99.8600
167.0242	903.8210	-129.4292	180.9792	1048.8882	-117.5280	191.1319	1194.4541	-107.8773	197.8387	1340.3906	-100.1213
167.0263	903.8207	-129.8198	181.0464	1048.8766	-117.8749	191.2348	1194.4377	-108.1646	197.9800	1340.3698	-100.3778
167.0204	903.8218	-130.2057	181.1049	1048.8665	-118.2174	191.3259	1194.4230	-108.4465	198.1080	1340.3508	-100.6294
167.0036	903.8250	-130.5840	181.1510	1048.8584	-118.5539	191.4050	1194.4105	-108.7238	198.2230	1340.3339	-100.8751
166.9737	903.8304	-130.9540	181.1838	1048.8529	-118.8819	191.4724	1194.3997	-108.9943	198.3231	1340.3190	-101.1147
166.9302	903.8384	-131.3151	181.2003	1048.8499	-119.2022	191.5275	1194.3907	-109.2596	198.4097	1340.3063	-101.3496
166.8716	903.8494	-131.6668	181.2022	1048.8496	-119.5134	191.5714	1194.3838	-109.5197	198.4829	1340.2954	-101.5783
166.7976	903.8629	-132.0084	181.1870	1048.8523	-119.8170	191.6024	1194.3788	-109.7751	198.5415	1340.2867	-101.8027
166.7115	903.8788	-132.3414	181.1591	1048.8571	-120.1114	191.6219	1194.3757	-110.0240	198.5876	1340.2798	-102.0213
166.6110	903.8975	-132.6654	181.1164	1048.8644	-120.3998	191.6300	1194.3744	-110.2682	198.6213	1340.2748	-102.2344
166.4989	903.9181	-132.9823	181.0616	1048.8739	-120.6809	191.6267	1194.3749	-110.5065	198.6426	1340.2717	-102.4428
166.3770	903.9404	-133.2922	180.9964	1048.8851	-120.9559	191.6121	1194.3772	-110.7411	198.6517	1340.2704	-102.6469
166.2452	903.9648	-133.5956	180.9213	1048.8981	-121.2255	191.5871	1194.3813	-110.9693	198.6508	1340.2705	-102.8461
166.1055	903.9904	-133.8941	180.8360	1048.9128	-121.4907	191.5508	1194.3871	-111.1933	198.6385	1340.2722	-103.0420
165.9578	904.0176	-134.1873	180.7425	1048.9288	-121.7517	191.5047	1194.3944	-111.4130	198.6173	1340.2754	-103.2330
165.8043	904.0458	-134.4772	180.6421	1048.9463	-122.0084	191.4487	1194.4034	-111.6280	198.5861	1340.2800	-103.4213
165.6452	904.0749	-134.7622	180.5342	1048.9648	-122.2609	191.3830	1194.4141	-111.8382	198.5458	1340.2861	-103.6057
165.4810	904.1050	-135.0442	180.4203	1048.9844	-122.5100	191.3078	1194.4260	-112.0441	198.4979	1340.2931	-103.7857
165.3120	904.1359	-135.3234	180.3002	1049.0050	-122.7566	191.2226	1194.4397	-112.2461	198.4418	1340.3015	-103.9640
165.1291	904.1693	-135.5939	180.1648	1049.0282	-122.9943	191.1297	1194.4546	-112.4439	198.3629	1340.3131	-104.1318
164.9425	904.2033	-135.8615	180.0246	1049.0525	-123.2290	191.0268	1194.4711	-112.6377	198.2757	1340.3260	-104.2978
164.7502	904.2383	-136.1255	179.8770	1049.0778	-123.4607	190.9142	1194.4890	-112.8266	198.1800	1340.3402	-104.4595
164.5519	904.2745	-136.3858	179.7219	1049.1042	-123.6891	190.7918	1194.5087	-113.0115	198.0752	1340.3557	-104.6177
164.3475	904.3116	-136.6417	179.5602	1049.1320	-123.9123	190.6605	1194.5295	-113.1915	197.9617	1340.3724	-104.7723
164.1359	904.3500	-136.8936	179.3897	1049.1611	-124.1316	190.5177	1194.5524	-113.3674	197.8379	1340.3907	-104.9225
163.9161	904.3900	-137.1393	179.2099	1049.1919	-124.3463	190.3646	1194.5767	-113.5381	197.7039	1340.4104	-105.0693
163.6869	904.4315	-137.3793	179.0205	1049.2242	-124.5557	190.2009	1194.6028	-113.7034	197.5587	1340.4320	-105.2116
163.4470	904.4749	-137.6118	178.8198	1049.2584	-124.7578	190.0258	1194.6306	-113.8639	197.4015	1340.4551	-105.3485
163.1956	904.5203	-137.8371	178.6069	1049.2947	-124.9547	189.8397	1194.6603	-114.0195	197.2329	1340.4799	-105.4811
162.9310	904.5680	-138.0542	178.3807	1049.3331	-125.1434	189.6420	1194.6917	-114.1705	197.0516	1340.5065	-105.6089
162.6527	904.6180	-138.2620	178.1397	1049.3741	-125.3249	189.4326	1194.7249	-114.3148	196.8570	1340.5352	-105.7305
162.3596	904.6707	-138.4597	177.8831	1049.4177	-125.4973	189.2104	1194.7600	-114.4547	196.6479	1340.5658	-105.8479
162.0515	904.7260	-138.6480	177.6103	1049.4639	-125.6618	188.9775	1194.7969	-114.5880	196.4262	1340.5984	-105.9591
161.7297	904.7835	-138.8276	177.3226	1049.5125	-125.8173	188.7317	1194.8358	-114.7164	196.1893	1340.6329	-106.0646
161.3952	904.8433	-138.9980	177.0207	1049.5634	-125.9644	188.4737	1194.8765	-114.8389	195.9391	1340.6697	-106.1649
161.0491	904.9049	-139.1620	176.7064	1049.6165	-126.1063	188.2039	1194.9191	-114.9564	195.6754	1340.7081	-106.2590
160.6950	904.9679	-139.3201	176.3835	1049.6707	-126.2428	187.9222	1194.9634	-115.0687	195.3979	1340.7487	-106.3490
160.3367	905.0315	-139.4749	176.0564	1049.7256	-126.3768	187.6291	1195.0095	-115.1753	195.1084	1340.7908	-106.4329
159.9725	905.0959	-139.6266	175.7248	1049.7813	-126.5096	187.3259	1195.0570	-115.2776	194.8076	1340.8345	-106.5120
159.6033	905.1610	-139.7743	175.3884	1049.8374	-126.6398	187.0115	1195.1062	-115.3751	194.4943	1340.8799	-106.5868
159.2274	905.2272	-139.9178	175.0453	1049.8947	-126.7656	186.6870	1195.1569	-115.4676	194.1704	1340.9270	-106.6574
158.8435	905.2947	-140.0563	174.6935	1049.9534	-126.8876	186.3519	1195.2094	-115.5542	193.8365	1340.9752	-106.7233
158.4526	905.3632	-140.1894	174.3324	1050.0133	-127.0038	186.0032	1195.2635	-115.6367	193.4925	1341.0248	-106.7860
158.0527	905.4331	-140.3168	173.9603	1050.0751	-127.1144	185.6426	1195.3197	-115.7119	193.1392	1341.0758	-106.8445
157.6424	905.5046	-140.4389	173.5758	1050.1387	-127.2185	185.2684	1195.3778	-115.7810	192.7754	1341.1282	-106.8988
157.2230	905.5776	-140.5539	173.1787	1050.2042	-127.3156	184.8792	1195.4380	-115.8434	192.4013	1341.1819	-106.9490
156.7937	905.6520	-140.6615	172.7678	1050.2720	-127.4051	184.4746	1195.5005	-115.8996	192.0164	1341.2369	-106.9944
156.3528	905.7281	-140.7630	172.3429	1050.3417	-127.4877	184.0570	1195.5647	-115.9488	191.6200	1341.2937	-107.0364
155.9010	905.8061	-140.8568	171.9034	1050.4137	-127.5617	183.6241	1195.6315	-115.9909	191.2130	1341.3518	-107.0733
154.7892	905.9966	-141.0492	170.8821	1050.5803	-127.6973	182.6132	1195.7861	-116.0616	190.2693	1341.4861	-107.1368
153.6100	906.1973	-141.1967	169.7879	1050.7577	-127.7929	181.5382	1195.9498	-116.1033	189.2566	1341.6293	-107.1720
152.3586	906.4087	-141.2977	168.6200	1050.9457	-127.8483	180.4041	1196.1215	-116.1169	188.1532	1341.7844	-107.1719

151.0330	906.6305	-141.3489	167.3779	1051.1443	-127.8622	179.2061	1196.3014	-116.1020	186.9404	1341.9540	-107.1271
149.6268	906.8636	-141.3478	166.0543	1051.3542	-127.8339	177.9291	1196.4922	-116.0533	185.6036	1342.1394	-107.0332
148.1380	907.1080	-141.2936	164.6476	1051.5754	-127.7606	176.5607	1196.6948	-115.9616	184.1371	1342.3416	-106.8864
146.5620	907.3638	-141.1805	163.1537	1051.8082	-127.6385	175.0890	1196.9110	-115.8226	182.5410	1342.5594	-106.6873
144.8936	907.6319	-141.0081	161.5679	1052.0531	-127.4694	173.5010	1197.1422	-115.6317	180.8220	1342.7921	-106.4398
143.1219	907.9130	-140.7670	159.8812	1052.3107	-127.2454	171.7882	1197.3892	-115.3843	178.9889	1343.0376	-106.1468
141.2259	908.2098	-140.4457	158.0714	1052.5840	-126.9584	169.9365	1197.6534	-115.0743	177.0494	1343.2947	-105.8122
139.1817	908.5252	-140.0275	156.1172	1052.8756	-126.5925	167.9293	1197.9366	-114.6919	174.9958	1343.5638	-105.4317
136.9585	908.8630	-139.4919	153.9842	1053.1897	-126.1328	165.7390	1198.2416	-114.2286	172.8017	1343.8478	-104.9977
134.5277	909.2261	-138.8201	151.6351	1053.5305	-125.5572	163.3352	1198.5715	-113.6681	170.4331	1344.1503	-104.4945
131.8707	909.6152	-137.9978	149.0280	1053.9025	-124.8400	160.6806	1198.9303	-112.9906	167.8346	1344.4771	-103.8993
128.9773	910.0300	-137.0170	146.1307	1054.3081	-123.9653	157.7209	1199.3232	-112.1729	164.9120	1344.8387	-103.1719
125.8344	910.4699	-135.8633	142.9104	1054.7494	-122.9088	154.3918	1199.7565	-111.1814	161.5587	1345.2457	-102.2675
122.4183	910.9354	-134.5150	139.3139	1055.2306	-121.6369	150.6156	1200.2363	-109.9732	157.6784	1345.7059	-101.1389
118.7075	911.4265	-132.9487	135.2658	1055.7570	-120.0975	146.2889	1200.7712	-108.4905	153.1564	1346.2281	-99.7286
114.6454	911.9464	-131.1214	130.6270	1056.3409	-118.1976	141.2879	1201.3700	-106.6582	147.8749	1346.8185	-97.9699
110.0937	912.5070	-128.9331	125.0920	1057.0107	-115.7453	135.4037	1202.0475	-104.3601	141.6500	1347.4874	-95.7745
106.4388	912.9405	-127.0671	120.8023	1057.5096	-113.7159	130.9921	1202.5363	-102.5418	137.2957	1347.9380	-94.1796
102.3057	913.4130	-124.8392	115.7742	1058.0718	-111.2147	125.8273	1203.0875	-100.3172	132.2146	1348.4459	-92.2432
97.4326	913.9456	-122.0284	109.8907	1058.6991	-108.1419	119.6191	1203.7207	-97.5156	125.6468	1349.0737	-89.5896
91.6925	914.5393	-118.4895	103.2108	1059.3711	-104.4915	112.4227	1204.4142	-94.1166	117.9104	1349.7719	-86.3052
85.2663	915.1609	-114.3035	96.0174	1060.0474	-100.3924	104.6779	1205.1119	-90.3036	109.7811	1350.4574	-82.7159
78.4772	915.7680	-109.6897	88.6363	1060.6899	-96.0301	96.8190	1205.7688	-86.2971	101.6717	1351.0922	-79.0169
71.5547	916.3350	-104.8200	81.2771	1061.2793	-91.5410	89.0405	1206.3682	-82.2099	93.7042	1351.6682	-75.2753
64.5979	916.8515	-99.7675	74.0306	1061.8094	-86.9927	81.4104	1206.9070	-78.0880	85.9147	1352.1855	-71.5127
57.6527	917.3145	-94.5628	66.9294	1062.2806	-82.4159	73.9501	1207.3872	-73.9496	78.3162	1352.6470	-67.7378
50.7446	917.7226	-89.2143	59.9831	1062.6956	-77.8224	66.6650	1207.8113	-69.7957	70.9135	1353.0553	-63.9547
43.9016	918.0754	-83.7172	53.1946	1063.0570	-73.2163	59.5643	1208.1823	-65.6281	63.7054	1353.4137	-60.1664
37.2421	918.3696	-78.1278	46.5816	1063.3672	-68.6026	52.6648	1208.5026	-61.4563	56.6946	1353.7256	-56.3746
30.9716	918.6025	-72.6206	40.1762	1063.6285	-63.9980	45.9947	1208.7749	-57.2956	49.9056	1353.9929	-52.5864
25.1604	918.7800	-67.3071	34.0154	1063.8434	-59.4299	39.5922	1209.0016	-53.1717	43.3945	1354.2172	-48.8301
19.7373	918.9125	-62.1763	28.1284	1064.0153	-54.9265	33.4850	1209.1862	-49.1102	37.1990	1354.4015	-45.1356
14.6227	919.0081	-57.1894	22.5263	1064.1486	-50.5082	27.6644	1209.3333	-45.1201	31.2951	1354.5508	-41.5052
9.7646	919.0724	-52.3199	17.1941	1064.2482	-46.1787	22.1075	1209.4475	-41.2001	25.6344	1354.6697	-37.9246
5.1267	919.1100	-47.5491	12.1048	1064.3181	-41.9328	16.7915	1209.5331	-37.3466	20.1828	1354.7618	-34.3831
0.6870	919.1242	-42.8662	7.2373	1064.3624	-37.7640	11.6970	1209.5930	-33.5556	14.9217	1354.8301	-30.8761
-3.5704	919.1175	-38.2640	2.5736	1064.3839	-33.6679	6.8073	1209.6305	-29.8235	9.8388	1354.8766	-27.4017
-7.6545	919.0926	-33.7394	-1.9000	1064.3853	-29.6405	2.1085	1209.6478	-26.1469	4.9264	1354.9032	-23.9598
-11.5702	919.0516	-29.2930	-6.1942	1064.3690	-25.6799	-2.4111	1209.6472	-22.5239	0.1786	1354.9122	-20.5516
-15.3212	918.9967	-24.9261	-10.3159	1064.3370	-21.7857	-6.7560	1209.6307	-18.9563	-4.4073	1354.9050	-17.1796
-18.9130	918.9299	-20.6389	-14.2704	1064.2914	-17.9591	-10.9285	1209.6002	-15.4474	-8.8316	1354.8834	-13.8480
-22.3509	918.8526	-16.4314	-18.0626	1064.2336	-14.2007	-14.9308	1209.5575	-12.0008	-13.0907	1354.8489	-10.5637
-28.4876	918.6829	-8.7158	-25.6419	1064.0782	-6.4097	-22.9950	1209.4310	-4.7975	-21.9439	1354.7346	-3.4764
-34.1306	918.4905	-1.2746	-32.5644	1063.8887	1.0683	-30.3232	1209.2694	2.0828	-29.9302	1354.5815	3.2576
-39.3270	918.2827	5.9052	-38.8902	1063.6763	8.2389	-36.9792	1209.0842	8.6387	-37.0855	1354.4047	9.5993
-44.1250	918.0646	12.8412	-44.6809	1063.4487	15.1127	-43.0433	1208.8837	14.8878	-43.5153	1354.2133	15.5686
-48.5744	917.8400	19.5580	-49.9942	1063.2123	21.7038	-48.5994	1208.6730	20.8597	-49.3538	1354.0131	21.2220
-52.7219	917.6110	26.0830	-54.8823	1062.9712	28.0280	-53.7236	1208.4561	26.5869	-54.7245	1353.8066	26.6229
-56.6113	917.3793	32.4454	-59.3917	1062.7288	34.1017	-58.4808	1208.2351	32.0998	-59.7265	1353.5952	31.8263
-60.2778	917.1458	38.6697	-63.5708	1062.4869	39.9486	-62.9273	1208.0117	37.4270	-64.4294	1353.3795	36.8703
-63.7498	916.9109	44.7737	-67.4720	1062.2465	45.6016	-67.1178	1207.7861	42.6018	-68.8764	1353.1604	41.7748
-67.0558	916.6751	50.7784	-71.1451	1062.0067	51.0962	-71.0922	1207.5587	47.6469	-73.0955	1352.9391	46.5484
-70.2199	916.4382	56.7013	-74.6259	1061.7677	56.4564	-74.8765	1207.3300	52.5742	-77.0999	1352.7169	51.1888
-73.2596	916.2002	62.5532	-77.9352	1061.5299	61.6914	-78.4855	1207.1007	57.3859	-80.8875	1352.4956	55.6793
-76.1874	915.9614	68.3395	-81.0899	1061.2936	66.8080	-81.9232	1206.8722	62.0744	-84.4385	1352.2786	59.9873
-79.0153	915.7217	74.0651	-84.1037	1061.0591	71.8103	-85.1874	1206.6462	66.6250	-87.7497	1352.0677	64.0967
-81.7552	915.4811	79.7342	-86.9877	1060.8264	76.7000	-88.2762	1206.4242	71.0241	-90.8397	1351.8636	68.0140
-84.4183	915.2394	85.3509	-89.7568	1060.5958	81.4838	-91.2055	1206.2063	75.2767	-93.7527	1351.6648	71.7728
-87.0164	914.9962	90.9190	-92.4349	1060.3658	86.1798	-94.0307	1205.9893	79.4334	-96.5667	1351.4667	75.4447
-89.5622	914.7504	96.4437	-95.0462	1060.1349	90.8074	-96.8093	1205.7695	83.5503	-99.3326	1351.2661	79.0761
-92.0661	914.5018	101.9296	-97.6017	1059.9026	95.3731	-99.5510	1205.5463	87.6311	-102.0553	1351.0632	82.6651
-94.5381	914.2496	107.3769	-100.1160	1059.6681	99.8806	-102.2645	1205.3192	91.6751	-104.7412	1350.8577	86.2100
-96.9963	913.9921	112.7869	-102.6100	1059.4294	104.3404	-104.9655	1205.0868	95.6871	-107.3986	1350.6489	89.7134
-99.4605	913.7272	118.1778	-105.0908	1059.1864	108.7690	-107.6553	1204.8496	99.6754	-110.0196	1350.4381	93.1758
-101.9210	913.4559	123.5548	-107.5474	1058.9398	113.1668	-110.3237	1204.6082	103.6396	-112.5978	1350.2255	96.5958
-104.3558	913.1810	128.9031	-109.9731	1058.6906	117.5310	-112.9646	1204.3634	107.5779	-115.1309	1350.0120	99.9750
-106.7548	912.9037	134.2069	-112.3723	1058.4386	121.8667	-115.5832	1204.1150	111.4955	-117.6305	1349.7964	103.3228
-103.3953	913.2903	136.4461	-110.0777	1058.6797	123.6568	-113.8503	1204.2800	113.0283	-116.2487	1349.9161	104.6718

80% SPAN			90% SPAN			100% SPAN		
X	Y	Z	X	Y	Z	X	Y	Z
-118.5767	1495.4812	98.8337	-122.4250	1640.8767	95.6216	-128.4031	1786.0905	93.4609
-115.4901	1495.7227	96.5445	-119.5709	1641.0872	93.6492	-125.5682	1786.2920	91.6186
-112.3694	1495.9604	94.2233	-116.5398	1641.3052	91.5178	-122.6042	1786.4980	89.6704
-109.1893	1496.1959	91.8473	-113.3665	1641.5275	89.2605	-119.5113	1786.7075	87.6171
-105.9433	1496.4292	89.4082	-110.0735	1641.7515	86.8969	-116.2872	1786.9202	85.4576
-102.6303	1496.6600	86.9010	-106.6795	1641.9756	84.4394	-112.9315	1787.1354	83.1892
-99.2541	1496.8878	84.3211	-103.1988	1642.1980	81.8963	-109.4491	1787.3521	80.8095
-95.8123	1497.1121	81.6691	-99.6439	1642.4175	79.2765	-105.8440	1787.5692	78.3187
-92.2955	1497.3330	78.9410	-96.0139	1642.6338	76.5846	-102.1121	1787.7864	75.7168
-88.6898	1497.5508	76.1300	-92.3033	1642.8464	73.8222	-98.2488	1788.0027	73.0040
-84.9740	1497.7662	73.2191	-88.5076	1643.0553	70.9888	-94.2486	1788.2180	70.1802
-81.1281	1497.9795	70.1941	-84.6214	1643.2601	68.0841	-90.1103	1788.4314	67.2473
-77.1423	1498.1901	67.0525	-80.6372	1643.4603	65.1060	-85.8324	1788.6418	64.2087
-73.0132	1498.3970	63.7977	-76.5436	1643.6561	62.0504	-81.4133	1788.8483	61.0690
-68.7271	1498.5996	60.4272	-72.3238	1643.8472	58.9091	-76.8524	1789.0500	57.8335
-64.2605	1498.7979	56.9272	-67.9444	1644.0341	55.6598	-72.1480	1789.2460	54.5079
-59.5763	1498.9913	53.2756	-63.3342	1644.2181	52.2484	-67.2866	1789.4354	51.0882
-54.6230	1499.1801	49.4383	-58.4056	1644.4005	48.6106	-62.2049	1789.6193	47.5322
-49.3326	1499.3634	45.3702	-53.0625	1644.5817	44.6801	-56.8087	1789.7987	43.7756
-43.6545	1499.5396	41.0483	-47.2148	1644.7599	40.4031	-50.9709	1789.9744	39.7331
-37.5499	1499.7047	36.4641	-40.8287	1644.9308	35.7808	-44.5382	1790.1460	35.3079
-30.9748	1499.8550	31.6107	-33.8908	1645.0883	30.8357	-37.4199	1790.3091	30.4619
-23.8797	1499.9847	26.4808	-26.3797	1645.2260	25.5887	-29.5638	1790.4559	25.1940
-16.2074	1500.0873	21.0678	-18.2645	1645.3361	20.0565	-20.9197	1790.5779	19.5132
-7.8963	1500.1541	15.3674	-9.5021	1645.4100	14.2502	-11.4457	1790.6635	13.4407
1.1195	1500.1744	9.3789	-0.0372	1645.4375	8.1764	-1.1116	1790.6997	7.0123
5.2661	1500.1655	6.6921	4.3059	1645.4318	5.4583	3.4606	1790.6967	4.2348
9.5759	1500.1443	3.9429	8.8017	1645.4138	2.6893	8.1872	1790.6813	1.4066
14.0650	1500.1089	1.1250	13.4569	1645.3823	-0.1305	13.0680	1790.6523	-1.4674
18.7451	1500.0577	-1.7644	18.2756	1645.3361	-2.9988	18.0996	1790.6084	-4.3808
23.6226	1499.9888	-4.7240	23.2607	1645.2731	-5.9126	23.2779	1790.5487	-7.3263
28.6989	1499.9003	-7.7484	28.4150	1645.1921	-8.8687	28.5984	1790.4717	-10.2967
33.9716	1499.7902	-10.8295	33.7414	1645.0914	-11.8636	34.0562	1790.3761	-13.2851
39.4364	1499.6565	-13.9584	39.2425	1644.9694	-14.8941	39.6483	1790.2610	-16.2855
45.0892	1499.4971	-17.1259	44.9218	1644.8241	-17.9570	45.3781	1790.1250	-19.2965
50.9295	1499.3099	-20.3258	50.7824	1644.6537	-21.0491	51.2518	1789.9664	-22.3187
56.9600	1499.0930	-23.5543	56.8281	1644.4557	-24.1679	57.2758	1789.7838	-25.3530
63.1840	1498.8436	-26.8087	63.0626	1644.2285	-27.3107	63.4567	1789.5753	-28.4000
69.6025	1498.5593	-30.0849	69.4895	1643.9695	-30.4759	69.8004	1789.3391	-31.4607
76.2174	1498.2374	-33.3794	76.1123	1643.6760	-33.6619	76.3123	1789.0732	-34.5360
83.0303	1497.8754	-36.6900	82.9319	1643.3462	-36.8669	82.9963	1788.7756	-37.6268
90.0430	1497.4702	-40.0153	89.9479	1642.9771	-40.0886	89.8549	1788.4442	-40.7333
97.2546	1497.0190	-43.3532	97.1584	1642.5665	-43.3245	96.8868	1788.0770	-43.8550
104.6611	1496.5195	-46.7018	104.5575	1642.1121	-46.5719	104.0859	1787.6725	-46.9899
112.2500	1495.9694	-50.0571	112.1234	1641.6128	-49.8245	111.4284	1787.2297	-50.1315
119.9854	1495.3689	-53.4078	119.6953	1641.0781	-53.0326	118.8645	1786.7507	-53.2628
127.7930	1494.7219	-56.7294	127.0577	1640.5245	-56.1171	126.3109	1786.2396	-56.3548
135.4958	1494.0433	-59.9622	134.3182	1639.9460	-59.1117	133.6253	1785.7074	-59.3574
142.6273	1493.3794	-62.9452	141.1907	1639.3687	-61.9223	140.3901	1785.1884	-62.1250
148.5833	1492.7986	-65.4628	147.3232	1638.8289	-64.4315	146.1474	1784.7261	-64.4944
153.2853	1492.3230	-67.4918	152.4593	1638.3591	-66.5531	150.8245	1784.3370	-66.4425
159.6034	1491.6606	-70.2693	159.1944	1637.7184	-69.3779	157.1684	1783.7894	-69.1278
164.2580	1491.1552	-72.3955	164.3706	1637.2069	-71.5976	162.1589	1783.3428	-71.2796
168.3681	1490.6967	-74.2965	168.5520	1636.7817	-73.4325	166.2884	1782.9624	-73.0925
172.0504	1490.2762	-76.0252	172.0505	1636.4177	-75.0094	169.8026	1782.6311	-74.6674
175.3125	1489.8959	-77.5925	175.0546	1636.0990	-76.4047	172.8368	1782.3395	-76.0604
178.1446	1489.5599	-79.0001	177.7003	1635.8138	-77.6697	175.4782	1782.0813	-77.3074
180.6075	1489.2634	-80.2736	180.0823	1635.5533	-78.8411	177.7874	1781.8524	-78.4325
182.7893	1488.9972	-81.4453	182.2522	1635.3130	-79.9375	179.8173	1781.6488	-79.4553
184.7493	1488.7552	-82.5382	184.2332	1635.0911	-80.9684	181.6181	1781.4661	-80.3951
186.5318	1488.5330	-83.5679	186.0416	1634.8861	-81.9394	183.2335	1781.3007	-81.2678
188.1716	1488.3265	-84.5469	187.6918	1634.6976	-82.8550	184.7030	1781.1489	-82.0876
189.6963	1488.1331	-85.4850	189.1936	1634.5244	-83.7188	186.0596	1781.0077	-82.8661
191.1146	1487.9515	-86.3845	190.5632	1634.3652	-84.5355	187.3157	1780.8761	-83.6077
192.4268	1487.7823	-87.2462	191.8130	1634.2191	-85.3093	188.4769	1780.7534	-84.3149
193.6369	1487.6254	-88.0703	192.9536	1634.0848	-86.0444	189.5491	1780.6396	-84.9893

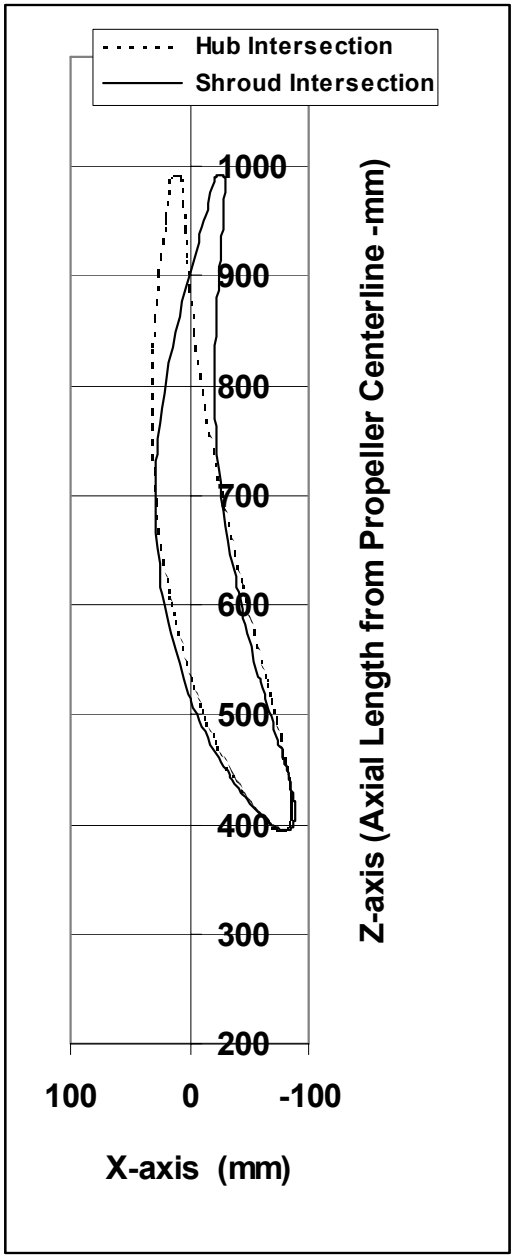
194.7462	1487.4806	-88.8577	193.9953	1633.9614	-86.7439	190.5371	1780.5342	-85.6329
195.7570	1487.3479	-89.6091	194.9452	1633.8484	-87.4107	191.4460	1780.4366	-86.2473
196.6727	1487.2271	-90.3257	195.8115	1633.7449	-88.0472	192.2801	1780.3469	-86.8338
197.4970	1487.1178	-91.0087	196.6000	1633.6501	-88.6557	193.0423	1780.2643	-87.3941
198.2353	1487.0197	-91.6598	197.3157	1633.5638	-89.2379	193.7370	1780.1888	-87.9291
198.5375	1486.9792	-91.9401	197.6104	1633.5282	-89.4880	194.0160	1780.1586	-88.1522
198.8241	1486.9409	-92.2147	197.8929	1633.4940	-89.7334	194.2828	1780.1294	-88.3710
199.0949	1486.9048	-92.4838	198.1633	1633.4613	-89.9743	194.5396	1780.1014	-88.5856
199.3518	1486.8704	-92.7475	198.4205	1633.4301	-90.2110	194.7842	1780.0746	-88.7959
199.5950	1486.8376	-93.0061	198.6667	1633.4001	-90.4433	195.0171	1780.0492	-89.0022
199.8254	1486.8068	-93.2601	198.9017	1633.3716	-90.6716	195.2403	1780.0247	-89.2044
200.0438	1486.7773	-93.5096	199.1257	1633.3442	-90.8959	195.4520	1780.0015	-89.4027
200.2512	1486.7494	-93.7551	199.3389	1633.3182	-91.1166	195.6535	1779.9792	-89.5972
200.4497	1486.7227	-93.9971	199.5427	1633.2933	-91.3336	195.8448	1779.9583	-89.7878
200.6391	1486.6971	-94.2363	199.7360	1633.2697	-91.5472	196.0264	1779.9382	-89.9748
200.8231	1486.6724	-94.4729	199.9212	1633.2471	-91.7574	196.1983	1779.9193	-90.1580
201.0018	1486.6482	-94.7080	200.0975	1633.2253	-91.9647	196.3604	1779.9014	-90.3376
201.1754	1486.6248	-94.9410	200.2658	1633.2048	-92.1689	196.5124	1779.8846	-90.5138
201.3398	1486.6024	-95.1706	200.4265	1633.1851	-92.3705	196.6556	1779.8689	-90.6866
201.4914	1486.5819	-95.3955	200.5778	1633.1665	-92.5687	196.7891	1779.8541	-90.8555
201.6281	1486.5634	-95.6151	200.7188	1633.1492	-92.7632	196.9127	1779.8405	-91.0212
201.7473	1486.5472	-95.8283	200.8468	1633.1334	-92.9531	197.0278	1779.8278	-91.1833
201.8495	1486.5333	-96.0347	200.9618	1633.1193	-93.1383	197.1327	1779.8162	-91.3419
201.9323	1486.5221	-96.2347	201.0625	1633.1068	-93.3181	197.2274	1779.8055	-91.4969
201.9981	1486.5131	-96.4281	201.1471	1633.0966	-93.4925	197.3134	1779.7960	-91.6482
202.0471	1486.5065	-96.6157	201.2156	1633.0881	-93.6610	197.3884	1779.7878	-91.7959
202.0812	1486.5020	-96.7973	201.2690	1633.0815	-93.8239	197.4539	1779.7805	-91.9397
202.1012	1486.4991	-96.9740	201.3067	1633.0769	-93.9817	197.5092	1779.7743	-92.0798
202.1092	1486.4979	-97.1461	201.3314	1633.0737	-94.1342	197.5545	1779.7693	-92.2163
202.1051	1486.4985	-97.3140	201.3417	1633.0725	-94.2821	197.5886	1779.7654	-92.3487
202.0910	1486.5006	-97.4782	201.3414	1633.0725	-94.4258	197.6117	1779.7631	-92.4769
202.0688	1486.5035	-97.6394	201.3303	1633.0740	-94.5658	197.6240	1779.7616	-92.6010
202.0375	1486.5078	-97.7973	201.3100	1633.0764	-94.7024	197.6236	1779.7617	-92.7206
201.9992	1486.5129	-97.9526	201.2816	1633.0800	-94.8363	197.6110	1779.7631	-92.8354
201.9548	1486.5190	-98.1058	201.2466	1633.0842	-94.9676	197.5852	1779.7659	-92.9456
201.8921	1486.5276	-98.2520	201.1913	1633.0911	-95.0919	197.5337	1779.7716	-93.0461
201.8224	1486.5370	-98.3959	201.1293	1633.0986	-95.2137	197.4694	1779.7787	-93.1419
201.7455	1486.5475	-98.5371	201.0603	1633.1072	-95.3327	197.3924	1779.7872	-93.2329
201.6606	1486.5590	-98.6753	200.9814	1633.1169	-95.4483	197.3031	1779.7972	-93.3195
201.5675	1486.5717	-98.8103	200.8915	1633.1279	-95.5604	197.2025	1779.8083	-93.4017
201.4635	1486.5857	-98.9416	200.7905	1633.1404	-95.6680	197.0913	1779.8207	-93.4799
201.3483	1486.6013	-99.0687	200.6756	1633.1545	-95.7710	196.9687	1779.8342	-93.5541
201.2212	1486.6185	-99.1913	200.5480	1633.1700	-95.8690	196.8363	1779.8489	-93.6245
201.0791	1486.6377	-99.3088	200.4042	1633.1877	-95.9616	196.6934	1779.8647	-93.6910
200.9220	1486.6589	-99.4207	200.2454	1633.2073	-96.0485	196.5405	1779.8816	-93.7540
200.7491	1486.6824	-99.5265	200.0704	1633.2288	-96.1298	196.3780	1779.8995	-93.8132
200.5583	1486.7081	-99.6256	199.8793	1633.2521	-96.2054	196.2054	1779.9186	-93.8689
200.3487	1486.7363	-99.7182	199.6743	1633.2772	-96.2757	196.0241	1779.9385	-93.9209
200.1205	1486.7671	-99.8040	199.4548	1633.3041	-96.3411	195.8319	1779.9597	-93.9693
199.8766	1486.7999	-99.8836	199.2243	1633.3320	-96.4021	195.6311	1779.9818	-94.0142
199.6167	1486.8348	-99.9574	198.9817	1633.3617	-96.4593	195.4201	1780.0050	-94.0555
199.3441	1486.8713	-100.0269	198.7310	1633.3922	-96.5131	195.2001	1780.0292	-94.0935
199.0625	1486.9091	-100.0932	198.4722	1633.4237	-96.5642	194.9705	1780.0542	-94.1277
198.7755	1486.9474	-100.1567	198.2046	1633.4563	-96.6121	194.7312	1780.0804	-94.1585
198.4842	1486.9865	-100.2191	197.9292	1633.4896	-96.6573	194.4816	1780.1077	-94.1856
198.1857	1487.0261	-100.2793	197.6448	1633.5242	-96.6989	194.2230	1780.1360	-94.2092
197.8800	1487.0669	-100.3355	197.3506	1633.5597	-96.7373	193.9545	1780.1653	-94.2290
197.5644	1487.1089	-100.3889	197.0464	1633.5963	-96.7718	193.6756	1780.1957	-94.2450
197.2378	1487.1522	-100.4379	196.7309	1633.6344	-96.8025	193.3868	1780.2271	-94.2570
196.8993	1487.1971	-100.4831	196.4055	1633.6736	-96.8293	193.0860	1780.2596	-94.2653
196.5470	1487.2437	-100.5235	196.0680	1633.7141	-96.8521	192.7751	1780.2933	-94.2693
196.1819	1487.2919	-100.5589	195.7194	1633.7559	-96.8706	192.4541	1780.3281	-94.2694
195.8027	1487.3419	-100.5884	195.3589	1633.7990	-96.8848	192.1208	1780.3641	-94.2652
195.4071	1487.3939	-100.6119	194.9859	1633.8436	-96.8944	191.7759	1780.4012	-94.2568
194.9966	1487.4478	-100.6306	194.5992	1633.8896	-96.8994	191.4197	1780.4396	-94.2440
194.0156	1487.5760	-100.6491	193.6789	1633.9990	-96.8926	190.5464	1780.5332	-94.1969
192.9467	1487.7151	-100.6360	192.6848	1634.1166	-96.8592	189.6049	1780.6337	-94.1244
191.7872	1487.8650	-100.5891	191.6128	1634.2427	-96.7978	188.5916	1780.7413	-94.0258

190.5326	1488.0262	-100.5061	190.4574	1634.3776	-96.7060	187.5040	1780.8562	-93.8991
189.1816	1488.1986	-100.3878	189.2113	1634.5225	-96.5813	186.3377	1780.9786	-93.7431
187.7298	1488.3824	-100.2336	187.8662	1634.6776	-96.4210	185.0873	1781.1090	-93.5562
186.1763	1488.5775	-100.0407	186.4137	1634.8438	-96.2218	183.7488	1781.2476	-93.3366
184.5198	1488.7837	-99.8111	184.8422	1635.0223	-95.9799	182.3164	1781.3948	-93.0822
182.7588	1489.0009	-99.5429	183.1395	1635.2139	-95.6908	180.7833	1781.5510	-92.7909
180.8848	1489.2297	-99.2340	181.2914	1635.4197	-95.3502	179.1383	1781.7172	-92.4586
178.8708	1489.4729	-98.8746	179.2881	1635.6406	-94.9544	177.3491	1781.8960	-92.0730
176.6779	1489.7347	-98.4511	177.1122	1635.8776	-94.4983	175.3746	1782.0916	-91.6198
174.2587	1490.0195	-97.9449	174.7456	1636.1321	-93.9742	173.1707	1782.3071	-91.0818
171.5498	1490.3339	-97.3327	172.1607	1636.4061	-93.3721	170.6828	1782.5470	-90.4390
168.4610	1490.6862	-96.5786	169.3055	1636.7041	-92.6720	167.8586	1782.8152	-89.6699
164.9239	1491.0817	-95.6539	166.0790	1637.0345	-91.8341	164.6335	1783.1158	-88.7486
160.9408	1491.5168	-94.5529	162.3383	1637.4098	-90.8022	160.9145	1783.4554	-87.6366
156.4992	1491.9894	-93.2609	157.8802	1637.8457	-89.4908	156.5590	1783.8430	-86.2717
151.5012	1492.5052	-91.7301	152.4002	1638.3645	-87.7683	151.3318	1784.2941	-84.5510
144.8168	1493.1686	-89.4996	145.3535	1639.0048	-85.4016	144.7454	1784.8405	-82.2702
139.8953	1493.6378	-87.7685	140.0316	1639.4680	-83.5229	139.9314	1785.2244	-80.5314
133.7146	1494.2037	-85.4876	133.7212	1639.9948	-81.2140	134.0392	1785.6764	-78.3331
126.3491	1494.8446	-82.6482	126.6623	1640.5552	-78.5495	127.1373	1786.1810	-75.6779
118.4101	1495.4944	-79.4714	119.2035	1641.1139	-75.6520	119.6855	1786.6959	-72.7301
110.3699	1496.1093	-76.1481	111.6380	1641.6459	-72.6323	112.1020	1787.1876	-69.6551
102.4086	1496.6754	-72.7574	103.8717	1642.1555	-69.4269	104.5341	1787.6461	-66.5103
94.5953	1497.1895	-69.3324	96.1206	1642.6276	-66.1220	97.0615	1788.0676	-63.3297
86.9633	1497.6520	-65.8895	88.5389	1643.0536	-62.7975	89.7348	1788.4503	-60.1350
79.5264	1498.0656	-62.4372	81.1472	1643.4353	-59.4661	82.5754	1788.7950	-56.9375
72.2908	1498.4320	-58.9806	73.9526	1643.7748	-56.1334	75.5912	1789.1039	-53.7427
65.2574	1498.7548	-55.5236	66.9576	1644.0746	-52.8032	68.7832	1789.3785	-50.5529
58.4257	1499.0366	-52.0680	60.1631	1644.3372	-49.4786	62.1490	1789.6212	-47.3697
51.7952	1499.2805	-48.6169	53.5689	1644.5652	-46.1627	55.6851	1789.8340	-44.1933
45.3665	1499.4888	-45.1742	47.1735	1644.7611	-42.8583	49.3865	1790.0188	-41.0245
39.1402	1499.6642	-41.7441	40.9743	1644.9271	-39.5678	43.2480	1790.1777	-37.8629
33.1146	1499.8092	-38.3301	34.9687	1645.0657	-36.2946	37.2636	1790.3124	-34.7087
27.2887	1499.9265	-34.9368	29.1545	1645.1791	-33.0419	31.4273	1790.4243	-31.5619
21.6646	1500.0184	-31.5700	23.5288	1645.2692	-29.8130	25.7330	1790.5151	-28.4224
16.2488	1500.0868	-28.2386	18.0893	1645.3380	-26.6113	20.1779	1790.5864	-25.2918
11.0469	1500.1342	-24.9515	12.8331	1645.3873	-23.4410	14.7667	1790.6392	-22.1747
6.0622	1500.1626	-21.7168	7.7582	1645.4191	-20.3053	9.5050	1790.6748	-19.0772
1.2940	1500.1742	-18.5413	2.8618	1645.4349	-17.2080	4.3988	1790.6947	-16.0058
-3.2648	1500.1713	-15.4277	-1.8587	1645.4363	-14.1526	-0.5468	1790.7000	-12.9673
-7.6269	1500.1555	-12.3752	-6.4070	1645.4249	-11.1419	-5.3279	1790.6920	-9.9677
-11.8100	1500.1283	-9.3790	-10.7900	1645.4021	-8.1767	-9.9434	1790.6724	-7.0124
-20.8556	1500.0299	-2.6616	-20.2998	1645.3123	-1.5188	-20.3362	1790.5845	-0.1349
-29.1225	1499.8921	3.7815	-29.0439	1645.1812	4.8877	-29.8040	1790.4519	6.4144
-36.6782	1499.7264	9.9438	-37.0799	1645.0195	11.0309	-38.3781	1790.2887	12.5935
-43.5878	1499.5415	15.8236	-44.4520	1644.8368	16.8956	-46.1044	1790.1064	18.3754
-49.9134	1499.3442	21.4236	-51.1940	1644.6407	22.4620	-53.0377	1789.9144	23.7465
-55.7101	1499.1401	26.7484	-57.3287	1644.4385	27.7077	-59.2373	1789.7200	28.7047
-61.0270	1498.9331	31.8037	-62.8739	1644.2357	32.6094	-64.8009	1789.5271	33.2844
-65.9091	1498.7263	36.5972	-67.8681	1644.0371	37.1645	-69.8919	1789.3356	37.5783
-70.4130	1498.5215	41.1516	-72.4104	1643.8434	41.4245	-74.6454	1789.1436	41.6691
-74.6135	1498.3181	45.5106	-76.6053	1643.6532	45.4545	-79.1608	1788.9495	45.6195
-78.5682	1498.1160	49.7084	-80.5469	1643.4648	49.3168	-83.5046	1788.7520	49.4710
-82.3178	1497.9147	53.7677	-84.3116	1643.2759	53.0651	-87.6924	1788.5515	53.2284
-85.8899	1497.7141	57.7029	-87.9357	1643.0859	56.7219	-91.7263	1788.3491	56.8867
-89.2994	1497.5146	61.5178	-91.4375	1642.8949	60.2957	-95.6089	1788.1459	60.4414
-92.5526	1497.3171	65.2103	-94.8298	1642.7025	63.7920	-99.3425	1787.9424	63.8891
-95.6628	1497.1216	68.7852	-98.1230	1642.5092	67.2139	-102.9313	1787.7393	67.2279
-98.6520	1496.9276	72.2582	-101.3237	1642.3148	70.5632	-106.3773	1787.5376	70.4567
-101.5434	1496.7343	75.6459	-104.4380	1642.1198	73.8401	-109.6842	1787.3376	73.5748
-104.3503	1496.5411	78.9543	-107.4682	1641.9242	77.0433	-112.8599	1787.1399	76.5828
-107.0867	1496.3478	82.1896	-110.4211	1641.7283	80.1707	-115.9112	1786.9447	79.4834
-109.7625	1496.1539	85.3602	-113.2905	1641.5327	83.2197	-118.8377	1786.7524	82.2797
-112.3740	1495.9601	88.4691	-116.0597	1641.3392	86.1812	-121.6352	1786.5642	84.9722
-114.9200	1495.7666	91.5192	-118.7075	1641.1498	89.0407	-124.2988	1786.3809	87.5614
-117.4048	1495.5737	94.5154	-121.2097	1640.9669	91.7771	-126.8313	1786.2029	90.0472
-119.8531	1495.3795	97.4802	-123.5302	1640.7939	94.3587	-129.2321	1786.0306	92.4294
-118.5767	1495.4812	98.8337	-122.4250	1640.8767	95.6216	-128.4031	1786.0905	93.4609

APPENDIX B

STATOR OFFSETS

The following is a list of offsets for the stator blade geometry, with all dimensions in millimeters (mm) and are oriented for a right hand rule with positive Z being along the shaft axis or the axis of rotation for the prop. The stator blade at 0 and 100-percent span are shown in the figure below. Data points for the 0, 50, and 100-percent span locations are shown with the 0-percent span being the hub intersection and the 100-percent span being the shroud or tip intersection. The points are shown starting from the trailing edge location (Z = 939.079 mm) of the blade going forward around the suction side of the blade to the leading edge location (Z = 394.895 mm) and back around the pressure side of the blade to the starting trailing edge point. The Z-axis represents axial distance along the shaft from the centerline of the propeller, which was located 355.6 mm (14 inches) behind the leading edge of the shroud. The stator sections between the shroud and hub intersections are ruler surfaces, that is, a straight lines can be drawn from corresponding points at the hub and tip to define intermediate section points. Additional stator sections are available at 10-percent span increments in a data file. Seven identical stator blades are used with a clocking for each blade of 1/7th of 360 degrees.



X	Y	Z (axial)	X	Y	Z (axial)	X	Y	Z (axial)
(0 % Span) Hub Section			(50 % Span) Mid Section			(100 % Span) Tip Section		
11.7451	283.0041	993.0790	-7.2410	1088.7092	993.0790	-26.2243	1894.0372	993.0790
11.9141	282.9975	993.0760	-7.0724	1088.7114	993.0845	-26.0560	1894.0414	993.0930
12.0832	282.9926	993.0621	-6.9030	1088.7139	993.0790	-25.8864	1894.0441	993.0960
12.2521	282.9895	993.0371	-6.7332	1088.7164	993.0621	-25.7157	1894.0453	993.0870
12.4206	282.9881	993.0001	-6.5631	1088.7191	993.0341	-25.5441	1894.0451	993.0680
12.5885	282.9885	992.9522	-6.3933	1088.7219	992.9941	-25.3723	1894.0432	993.0360
12.7557	282.9905	992.8942	-6.2234	1088.7250	992.9441	-25.2000	1894.0400	992.9940
12.9219	282.9943	992.8242	-6.0542	1088.7280	992.8821	-25.0276	1894.0351	992.9400
13.0867	282.9998	992.7442	-5.8858	1088.7313	992.8101	-24.8556	1894.0290	992.8760
13.2501	283.0068	992.6543	-5.7183	1088.7346	992.7282	-24.6839	1894.0215	992.8020
13.4118	283.0153	992.5553	-5.5520	1088.7378	992.6367	-24.5131	1894.0126	992.7180
13.5716	283.0254	992.4463	-5.3871	1088.7415	992.5352	-24.3431	1894.0024	992.6240
13.7293	283.0371	992.3284	-5.2238	1088.7451	992.4246	-24.1742	1893.9910	992.5210
13.8846	283.0502	992.2014	-5.0624	1088.7488	992.3051	-24.0069	1893.9784	992.4090
14.0374	283.0644	992.0674	-4.9033	1088.7524	992.1782	-23.8414	1893.9647	992.2890
14.1876	283.0801	991.9254	-4.7463	1088.7562	992.0427	-23.6777	1893.9498	992.1600
14.3347	283.0968	991.7775	-4.5921	1088.7600	991.9012	-23.5164	1893.9340	992.0250
14.4788	283.1147	991.6225	-4.4405	1088.7639	991.7527	-23.3573	1893.9173	991.8830
14.6195	283.1337	991.4615	-4.2920	1088.7678	991.5983	-23.2012	1893.8997	991.7350
14.7566	283.1536	991.2955	-4.1469	1088.7719	991.4387	-23.0480	1893.8814	991.5820
14.8901	283.1743	991.1256	-4.0052	1088.7758	991.2742	-22.8981	1893.8623	991.4230
15.0197	283.1958	990.9516	-3.8671	1088.7797	991.1057	-22.7517	1893.8426	991.2600
15.1453	283.2179	990.7746	-3.7330	1088.7837	990.9343	-22.6089	1893.8225	991.0940
15.2665	283.2407	990.5946	-3.6029	1088.7876	990.7598	-22.4700	1893.8019	990.9250
15.3834	283.2639	990.4136	-3.4770	1088.7914	990.5839	-22.3354	1893.7810	990.7540
15.4958	283.2876	990.2307	-3.3558	1088.7953	990.4058	-22.2052	1893.7597	990.5810
15.8092	283.3237	989.9027	-3.0264	1088.8033	990.0923	-21.8601	1893.7244	990.2820
16.0933	283.3821	989.4458	-2.7199	1088.8127	989.6478	-21.5311	1893.6712	989.8500
16.3436	283.4600	988.8798	-2.4417	1088.8235	989.0919	-21.2250	1893.6028	989.3040
16.5559	283.5543	988.2258	-2.1967	1088.8353	988.4464	-20.9475	1893.5220	988.6670
16.7270	283.6604	987.5129	-1.9898	1088.8474	987.7385	-20.7048	1893.4321	987.9640
17.9744	285.3178	976.6500	-0.1763	1089.0031	976.9045	-18.3264	1892.0340	977.1590
19.2286	286.9331	965.7781	1.6885	1089.1377	966.0710	-15.8519	1890.6350	966.3640
20.4773	288.5176	954.8923	3.5878	1089.2559	955.2296	-13.3035	1889.2331	955.5670
21.7081	290.0543	943.9895	5.5042	1089.3477	944.3763	-10.7030	1887.8271	944.7630
23.2000	291.9428	930.3377	7.8945	1089.4418	930.7903	-7.4164	1886.0628	931.2430
24.6302	293.7721	916.6579	10.2598	1089.5002	917.1785	-4.1185	1884.2897	917.6990
25.9836	295.5558	902.9462	12.5755	1089.5289	903.5361	-0.8430	1882.5070	904.1260
27.2486	297.3028	889.2044	14.8213	1089.5315	889.8622	2.3808	1880.7143	890.5200
28.4359	298.9941	875.4287	16.9997	1089.4988	876.1533	5.5476	1878.9115	876.8780
29.5128	300.6653	861.6179	19.0708	1089.4473	862.4054	8.6102	1877.0982	863.1930
30.4695	302.2780	847.7740	21.0178	1089.3573	848.6186	11.5449	1875.2747	849.4630
31.2890	303.8811	833.8952	22.8176	1089.2528	834.7896	14.3227	1873.4413	835.6840
31.8248	305.4433	819.9883	24.3179	1089.1138	820.9151	16.7858	1871.5984	821.8420
32.2102	307.0001	806.0493	25.6472	1088.9630	807.0002	19.0576	1869.7476	807.9510
32.4491	308.5070	792.0794	26.8045	1088.7793	793.0462	21.1324	1867.8901	794.0130
32.5349	310.0047	778.0803	27.7791	1088.5833	779.0527	22.9952	1866.0263	780.0250
32.4296	311.4649	764.0553	28.5284	1088.3605	765.0221	24.5993	1864.1577	765.9890
32.1656	312.9056	750.0032	29.0812	1088.1215	750.9541	25.9696	1862.2846	751.9050
31.7440	314.3186	735.9271	29.4350	1087.8634	736.8510	27.0998	1860.4080	737.7750
31.1506	315.6965	721.8269	29.5718	1087.5825	722.7140	27.9683	1858.5288	723.6010
30.1687	317.0843	707.7317	29.2714	1087.2983	708.5609	28.3516	1856.6517	709.3900
29.0127	318.4120	693.6194	28.7471	1086.9818	694.3822	28.4613	1854.7743	695.1450
27.6981	319.7494	679.4961	28.0110	1086.6691	680.1826	28.3066	1852.8969	680.8690
26.2106	320.9974	665.3598	27.0464	1086.3110	665.9614	27.8676	1851.0198	666.5630
24.2977	322.2668	651.2525	25.5984	1085.9623	651.7552	26.8874	1849.1507	652.2580
22.2129	323.4706	637.1412	23.9205	1085.5830	637.5396	25.6192	1847.2831	637.9380
19.9779	324.6367	623.0318	22.0315	1085.1887	623.3189	24.0786	1845.4167	623.6060
17.5864	325.7669	608.9215	19.9223	1084.7803	609.0912	22.2538	1843.5508	609.2610
15.9785	326.4004	600.4723	18.4524	1084.5154	600.5681	20.9231	1842.4344	600.6640
14.3085	327.0283	592.0251	16.8962	1084.2495	592.0450	19.4817	1841.3180	592.0650
12.5874	327.6493	583.5778	15.2639	1083.9822	583.5189	17.9389	1840.2007	583.4600
10.7937	328.2410	575.1266	13.5338	1083.7021	574.9893	16.2729	1839.0828	574.8520
7.2358	329.1510	561.1273	10.0261	1083.2075	560.8587	12.8162	1837.2324	560.5900

3.4927	330.0242	547.1270	6.2610	1082.7029	546.7265	9.0291	1835.3769	546.3260
-0.4089	330.7854	533.1267	2.2570	1082.1503	532.5888	4.9230	1833.5130	532.0510
-4.4997	331.4693	519.1185	-2.0222	1081.5675	518.4423	0.4553	1831.6388	517.7660
-6.3201	331.7240	513.5414	-3.9420	1081.3304	512.8137	-1.5638	1830.8904	512.0860
-8.1930	331.9674	507.9643	-5.9284	1081.0900	507.1877	-3.6632	1830.1402	506.4110
-10.1000	332.1685	502.3832	-7.9628	1080.8301	501.5596	-5.8247	1829.3874	500.7360
-12.0574	332.3480	496.8051	-10.0618	1080.5618	495.9366	-8.0648	1828.6326	495.0680
-14.1453	332.5095	491.2531	-12.3049	1080.2896	490.3446	-10.4623	1827.8790	489.4360
-16.2850	332.6552	485.7051	-14.6130	1080.0128	484.7620	-12.9379	1827.1236	483.8190
-18.4622	332.7852	480.1580	-16.9716	1079.7307	479.1850	-15.4763	1826.3656	478.2120
-20.7050	332.8965	474.6220	-19.4076	1079.4436	473.6255	-18.1035	1825.6063	472.6290
-23.1527	332.9721	469.1450	-22.0578	1079.1484	468.1355	-20.9533	1824.8513	467.1260
-25.6649	332.9887	463.6830	-24.7822	1078.8291	462.6685	-23.8866	1824.0947	461.6540
-28.2128	332.9832	458.2301	-27.5511	1078.5032	457.2175	-26.8720	1823.3357	456.2050
-30.8109	332.9531	452.7912	-30.3772	1078.1700	451.7881	-29.9210	1822.5745	450.7850
-32.1628	332.9248	450.0892	-31.8450	1078.0004	449.0951	-31.5015	1822.1945	448.1010
-33.5351	332.8887	447.3952	-33.3342	1077.8290	446.4116	-33.1042	1821.8141	445.4280
-34.9196	332.8455	444.7043	-34.8368	1077.6554	443.7341	-34.7210	1821.4332	442.7640
-36.3291	332.7935	442.0223	-36.3650	1077.4792	441.0677	-36.3638	1821.0520	440.1130
-37.7945	332.7285	439.3614	-37.9493	1077.3007	438.4252	-38.0622	1820.6717	437.4890
-39.2850	332.6537	436.7084	-39.5584	1077.1198	435.7947	-39.7848	1820.2915	434.8810
-40.7894	332.5705	434.0585	-41.1808	1076.9363	433.1707	-41.5195	1819.9106	432.2830
-42.3225	332.4737	431.4185	-42.8306	1076.7489	430.5603	-43.2800	1819.5296	429.7020
-43.9213	332.3443	428.8026	-44.5444	1076.5502	427.9778	-45.1018	1819.1497	427.1530
-45.5486	332.2029	426.1977	-46.2851	1076.3485	425.4094	-46.9484	1818.7695	424.6210
-47.1901	332.0512	423.6028	-48.0394	1076.1438	422.8509	-48.8073	1818.3884	422.0990
-48.8700	331.8851	421.0278	-49.8317	1075.9354	420.3120	-50.7029	1818.0068	419.5960
-50.6490	331.6939	418.4979	-51.7224	1075.7219	417.8205	-52.6949	1817.6271	417.1430
-52.4651	331.4866	415.9890	-53.6502	1075.5044	415.3500	-54.7231	1817.2468	414.7110
-54.2973	331.2663	413.4871	-55.5930	1075.2832	412.8890	-56.7642	1816.8654	412.2910
-56.1835	331.0264	410.9942	-57.5838	1075.0579	410.4480	-58.8461	1816.4845	409.9020
-57.7943	330.8078	409.0332	-59.2726	1074.8724	408.5376	-60.6007	1816.1818	408.0420
-59.4524	330.5724	407.0843	-61.0034	1074.6835	406.6451	-62.3906	1815.8793	406.2060
-61.1414	330.3225	405.1444	-62.7588	1074.4911	404.7647	-64.1980	1815.5764	404.3850
-62.9035	330.0490	403.2315	-64.5809	1074.2935	402.9143	-66.0640	1815.2739	402.5970
-64.3322	329.8152	401.8466	-66.0525	1074.1392	401.5748	-67.5649	1815.0482	401.3030
-65.8194	329.5624	400.4957	-67.5830	1073.9801	400.2638	-69.1238	1814.8220	400.0320
-67.3583	329.2911	399.1757	-69.1663	1073.8162	398.9779	-70.7354	1814.5949	398.7800
-69.0151	328.9859	397.9158	-70.8698	1073.6448	397.7489	-72.4673	1814.3687	397.5820
-70.2514	328.7477	397.1378	-72.1395	1073.5231	396.9914	-73.7562	1814.2197	396.8450
-71.5685	328.4858	396.3998	-73.4920	1073.3961	396.2734	-75.1284	1814.0714	396.1470
-72.9498	328.2032	395.6928	-74.9107	1073.2646	395.5859	-76.5673	1813.9232	395.4790
-74.4166	327.8939	395.0279	-76.4175	1073.1270	394.9409	-78.0951	1813.7757	394.8540
-74.5922	327.8562	394.9569	-76.5977	1073.1107	394.8719	-78.2778	1813.7590	394.7870
-74.7681	327.8181	394.8889	-76.7784	1073.0946	394.8064	-78.4608	1813.7428	394.7240
-74.9442	327.7799	394.8249	-76.9592	1073.0786	394.7449	-78.6440	1813.7271	394.6650
-75.1205	327.7413	394.7649	-77.1401	1073.0630	394.6874	-78.8272	1813.7119	394.6100
-75.2969	327.7026	394.7079	-77.3211	1073.0475	394.6329	-79.0104	1813.6971	394.5580
-75.4933	327.6592	394.6489	-77.5225	1073.0302	394.5769	-79.2142	1813.6812	394.5050
-75.6897	327.6155	394.5959	-77.7241	1073.0133	394.5265	-79.4181	1813.6660	394.4570
-75.8862	327.5715	394.5479	-77.9255	1072.9966	394.4810	-79.6218	1813.6514	394.4140
-76.0826	327.5272	394.5049	-78.1268	1072.9801	394.4410	-79.8253	1813.6375	394.3770
-76.2788	327.4827	394.4679	-78.3279	1072.9639	394.4070	-80.0284	1813.6245	394.3460
-76.4749	327.4379	394.4369	-78.5286	1072.9480	394.3785	-80.2312	1813.6121	394.3200
-76.6704	327.3930	394.4109	-78.7288	1072.9324	394.3555	-80.4333	1813.6005	394.3000
-76.8656	327.3478	394.3899	-78.9285	1072.9171	394.3380	-80.6348	1813.5897	394.2860
-77.0600	327.3025	394.3759	-79.1275	1072.9020	394.3265	-80.8356	1813.5796	394.2770
-77.2539	327.2571	394.3659	-79.3257	1072.8873	394.3200	-81.0354	1813.5703	394.2740
-77.4469	327.2116	394.3629	-79.5231	1072.8728	394.3195	-81.2343	1813.5617	394.2760
-77.6390	327.1660	394.3649	-79.7193	1072.8590	394.3245	-81.4320	1813.5539	394.2840
-77.8300	327.1204	394.3729	-79.9145	1072.8452	394.3355	-81.6285	1813.5469	394.2980
-78.0199	327.0747	394.3860	-80.1084	1072.8318	394.3515	-81.8237	1813.5406	394.3170
-78.2087	327.0291	394.4040	-80.3011	1072.8188	394.3730	-82.0175	1813.5351	394.3420
-78.3960	326.9835	394.4290	-80.4923	1072.8062	394.4010	-82.2098	1813.5305	394.3730
-78.5821	326.9379	394.4590	-80.6820	1072.7937	394.4340	-82.4004	1813.5266	394.4090
-78.7665	326.8925	394.4940	-80.8700	1072.7817	394.4720	-82.5892	1813.5234	394.4500
-78.9493	326.8471	394.5350	-81.0563	1072.7703	394.5165	-82.7763	1813.5212	394.4980
-79.1303	326.8019	394.5820	-81.2407	1072.7592	394.5660	-82.9613	1813.5196	394.5500
-79.3097	326.7569	394.6340	-81.4231	1072.7484	394.6215	-83.1444	1813.5190	394.6090
-79.4869	326.7121	394.6910	-81.6036	1072.7379	394.6815	-83.3253	1813.5190	394.6720

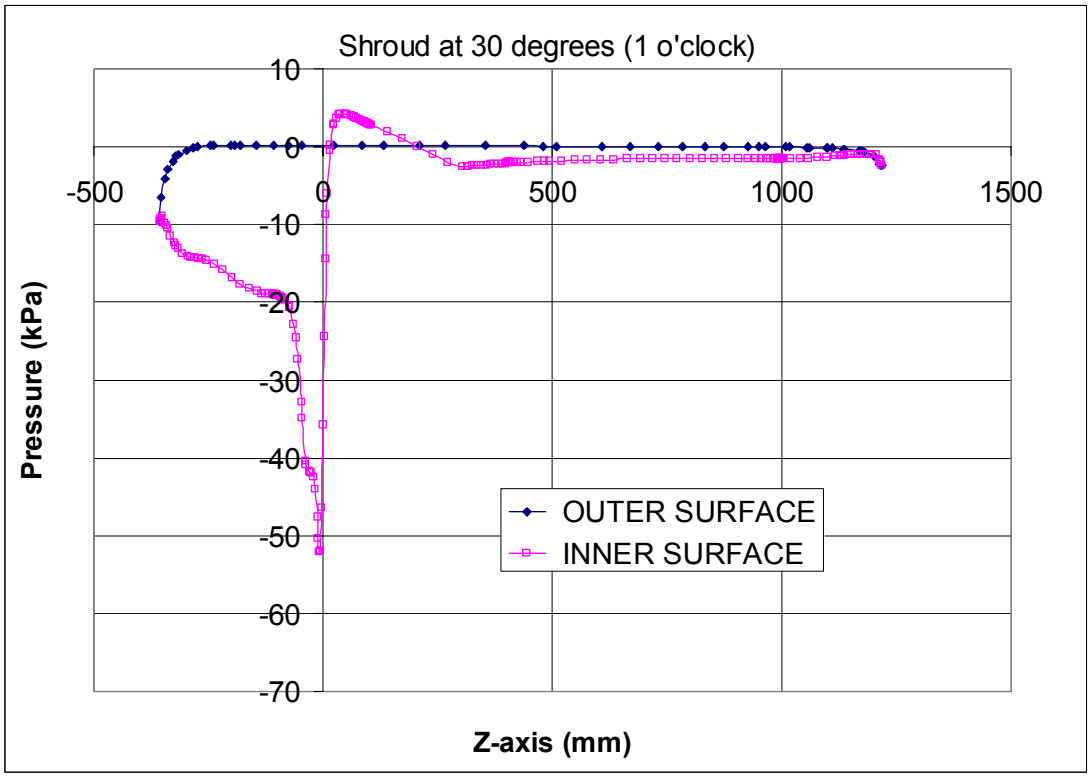
-79.6622	326.6674	394.7540	-81.7819	1072.7280	394.7475	-83.5039	1813.5199	394.7410
-79.8355	326.6231	394.8220	-81.9580	1072.7184	394.8190	-83.6802	1813.5216	394.8160
-80.0064	326.5790	394.8950	-82.1317	1072.7094	394.8950	-83.8541	1813.5240	394.8950
-80.1752	326.5352	394.9740	-82.3030	1072.7007	394.9770	-84.0254	1813.5273	394.9800
-80.3414	326.4918	395.0580	-82.4719	1072.6924	395.0645	-84.1942	1813.5314	395.0710
-80.5053	326.4487	395.1470	-82.6380	1072.6847	395.1565	-84.3602	1813.5363	395.1660
-80.6665	326.4060	395.2420	-82.8015	1072.6774	395.2545	-84.5234	1813.5420	395.2670
-80.8251	326.3638	395.3410	-82.9622	1072.6703	395.3565	-84.6837	1813.5483	395.3720
-80.9810	326.3219	395.4460	-83.1201	1072.6638	395.4645	-84.8411	1813.5556	395.4830
-81.1340	326.2806	395.5550	-83.2750	1072.6578	395.5765	-84.9954	1813.5635	395.5980
-81.2841	326.2397	395.6700	-83.4268	1072.6522	395.6940	-85.1466	1813.5723	395.7180
-81.4313	326.1994	395.7890	-83.5755	1072.6473	395.8165	-85.2945	1813.5819	395.8440
-81.5753	326.1596	395.9140	-83.7210	1072.6426	395.9440	-85.4392	1813.5922	395.9740
-81.7163	326.1204	396.0420	-83.8632	1072.6384	396.0750	-85.5804	1813.6032	396.1080
-81.8541	326.0818	396.1761	-84.0022	1072.6349	396.2115	-85.7183	1813.6151	396.2470
-81.9885	326.0438	396.3141	-84.1376	1072.6317	396.3525	-85.8525	1813.6277	396.3910
-82.1196	326.0065	396.4571	-84.2696	1072.6289	396.4980	-85.9833	1813.6410	396.5390
-82.2472	325.9698	396.6041	-84.3980	1072.6267	396.6475	-86.1103	1813.6550	396.6910
-82.3714	325.9338	396.7551	-84.5227	1072.6250	396.8015	-86.2336	1813.6698	396.8480
-82.4920	325.8986	396.9111	-84.6437	1072.6238	396.9600	-86.3531	1813.6854	397.0090
-82.6090	325.8641	397.0701	-84.7611	1072.6230	397.1220	-86.4688	1813.7016	397.1740
-82.7223	325.8303	397.2341	-84.8746	1072.6229	397.2885	-86.5806	1813.7186	397.3430
-82.8319	325.7974	397.4021	-84.9841	1072.6229	397.4585	-86.6883	1813.7361	397.5150
-82.9376	325.7652	397.5741	-85.0897	1072.6238	397.6330	-86.7921	1813.7544	397.6920
-83.0395	325.7339	397.7501	-85.1913	1072.6250	397.8110	-86.8917	1813.7734	397.8720
-83.1374	325.7035	397.9291	-85.2889	1072.6267	397.9925	-86.9872	1813.7931	398.0560
-83.2316	325.6738	398.1121	-85.3824	1072.6290	398.1780	-87.0785	1813.8135	398.2440
-83.3216	325.6451	398.2981	-85.4716	1072.6317	398.3666	-87.1655	1813.8345	398.4350
-83.4001	325.6198	398.4681	-85.5494	1072.6344	398.5381	-87.2412	1813.8536	398.6080
-83.4758	325.5952	398.6401	-85.6243	1072.6375	398.7121	-87.3140	1813.8733	398.7840
-83.5488	325.5711	398.8151	-85.6963	1072.6410	398.8886	-87.3838	1813.8934	398.9620
-83.6188	325.5478	398.9921	-85.7652	1072.6448	399.0676	-87.4505	1813.9141	399.1430
-83.6861	325.5250	399.1711	-85.8314	1072.6488	399.2486	-87.5143	1813.9351	399.3260
-84.2001	325.3455	400.7091	-86.3336	1072.6895	400.8021	-87.9960	1814.1186	400.8950
-84.6296	325.1883	402.2072	-86.7493	1072.7345	402.3146	-88.3905	1814.3007	402.4220
-84.9968	325.0477	403.6722	-87.1008	1072.7831	403.7951	-88.7197	1814.4819	403.9180
-85.2857	324.9284	405.0992	-87.3711	1072.8362	405.2371	-88.9664	1814.6619	405.3750
-85.5289	324.8020	407.1442	-87.5796	1072.9271	407.3061	-89.1358	1814.9294	407.4680
-85.6636	324.7057	409.1303	-87.6725	1073.0248	409.3196	-89.1845	1815.1961	409.5090
-85.7562	324.6215	411.0853	-87.7168	1073.1257	411.3072	-89.1787	1815.4627	411.5290
-85.8025	324.5506	413.0064	-87.7068	1073.2300	413.2662	-89.1117	1815.7292	413.5260
-85.7427	324.4901	415.5005	-87.5609	1073.3766	415.8137	-88.8806	1816.0834	416.1270
-85.6314	324.4440	417.9676	-87.3565	1073.5262	418.3313	-88.5847	1816.4363	418.6950
-85.5078	324.4015	420.4267	-87.1349	1073.6765	420.8373	-88.2674	1816.7883	421.2480
-85.3529	324.3675	422.8727	-86.8790	1073.8280	423.3243	-87.9132	1817.1387	423.7760
-85.0521	324.3543	425.8898	-86.4496	1074.0225	426.3814	-87.3604	1817.5736	426.8730
-84.7132	324.3511	428.8969	-85.9830	1074.2177	429.4179	-86.7723	1818.0059	429.9390
-84.3706	324.3481	431.8960	-85.5128	1074.4121	432.4444	-86.1803	1818.4366	432.9930
-84.0048	324.3302	434.8750	-85.0179	1074.5967	435.4500	-85.5624	1818.8654	436.0250
-83.5569	324.3348	437.8091	-84.4387	1074.7856	438.4091	-84.8593	1819.2917	439.0090
-83.0876	324.3450	440.7231	-83.8365	1074.9749	441.3476	-84.1320	1819.7160	441.9720
-82.6222	324.3540	443.6262	-83.2370	1075.1630	444.2761	-83.4060	1820.1387	444.9260
-82.1471	324.3653	446.5182	-82.6278	1075.3507	447.1906	-82.6703	1820.5594	447.8630
-81.6260	324.3883	449.3873	-81.9727	1075.5399	450.0777	-81.8897	1820.9775	450.7680
-81.0945	324.4136	452.2453	-81.3086	1075.7285	452.9507	-81.1013	1821.3934	453.6560
-80.5669	324.4372	455.1003	-80.6503	1075.9155	455.8172	-80.3206	1821.8073	456.5340
-80.0320	324.4620	457.9474	-79.9868	1076.1017	458.6717	-79.5369	1822.2188	459.3960
-79.4598	324.4959	460.7734	-79.2879	1076.2886	461.5022	-78.7199	1822.6279	462.2310
-78.8808	324.5309	463.5904	-78.5842	1076.4747	464.3217	-77.9004	1823.0350	465.0530
-78.3070	324.5637	466.4034	-77.8885	1076.6592	467.1347	-77.0912	1823.4401	467.8660
-77.7311	324.5963	469.2095	-77.1934	1076.8425	469.9388	-76.2852	1823.8432	470.6680
-76.5298	324.6339	474.7854	-75.7620	1077.1898	475.5027	-74.6406	1824.6429	476.2200
-75.3513	324.6590	480.3464	-74.3660	1077.5291	481.0442	-73.0433	1825.4351	481.7420
-74.2100	324.6720	485.8984	-73.0212	1077.8619	486.5702	-71.5103	1826.2205	487.2420
-73.0781	324.6797	491.4343	-71.6998	1078.1898	492.0727	-70.0140	1826.9991	492.7110
-71.8185	324.7147	496.9103	-70.2638	1078.5194	497.5047	-68.4173	1827.7694	498.0990
-70.5655	324.7440	502.3752	-68.8491	1078.8445	502.9196	-66.8561	1828.5340	503.4640
-69.3449	324.7538	507.8391	-67.4820	1079.1600	508.3290	-65.3567	1829.2937	508.8190
-68.1406	324.7242	513.2980	-66.1465	1079.4554	513.7286	-63.9032	1830.0486	514.1590
-66.8741	324.7047	518.7298	-64.7620	1079.7506	519.0964	-62.4145	1830.7987	519.4630

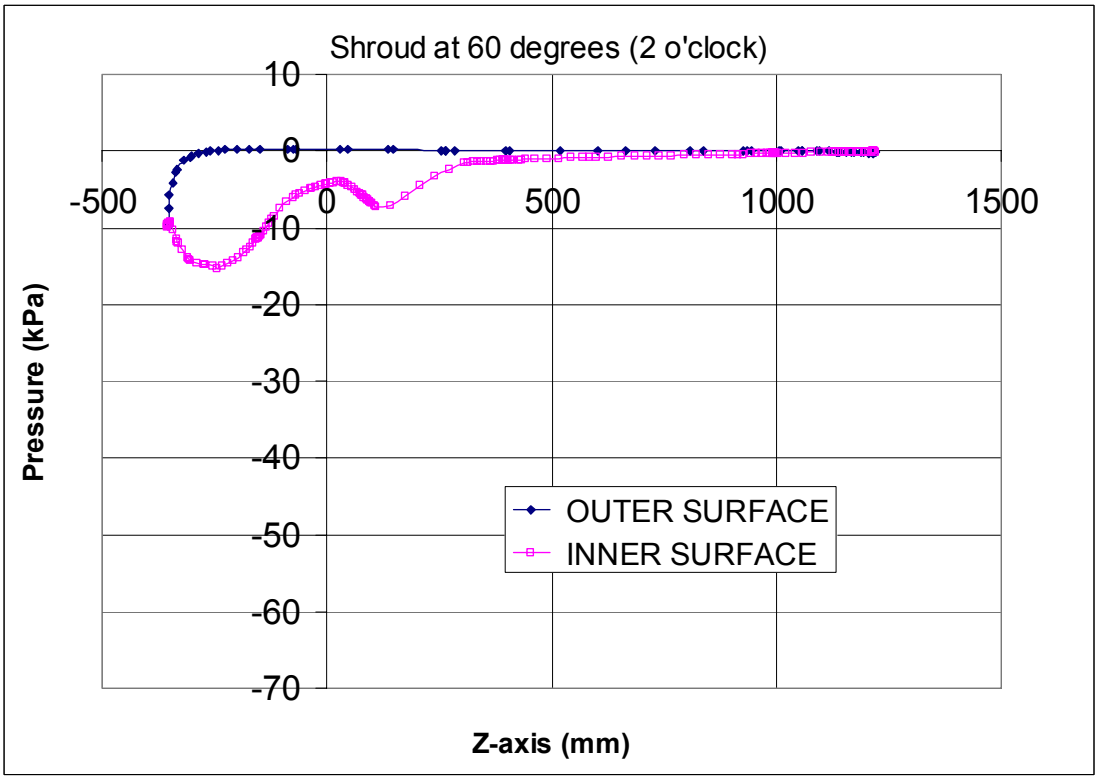
-65.6209	324.6779	524.1587	-63.4051	1080.0417	524.4593	-60.9668	1831.5453	524.7600
-64.3950	324.6409	529.5915	-62.0895	1080.3287	529.8243	-59.5737	1832.2889	530.0570
-63.1752	324.5984	535.0234	-60.7938	1080.6127	535.1862	-58.2137	1833.0297	535.3490
-59.9075	324.4772	548.5320	-57.3915	1081.3008	548.5120	-54.7061	1834.8689	548.4920
-56.7642	324.2459	562.0475	-54.1929	1081.9404	561.8478	-51.4774	1836.6951	561.6480
-53.7667	323.9620	575.5560	-51.2123	1082.5608	575.1845	-48.5352	1838.5092	574.8130
-50.8851	323.5572	589.0616	-48.4146	1083.1272	588.5213	-45.8399	1840.3126	587.9810
-48.9571	323.3245	597.1123	-46.5659	1083.4633	596.4711	-44.0818	1841.3892	595.8300
-47.0555	323.0771	605.1640	-44.7671	1083.7942	604.4235	-42.3962	1842.4630	603.6830
-45.2005	322.8103	613.2136	-43.0377	1084.1187	612.3779	-40.8017	1843.5340	611.5420
-43.3828	322.4737	621.2594	-41.3676	1084.4109	620.3312	-39.2872	1844.6021	619.4030
-40.2886	321.9017	634.6379	-38.5651	1084.8929	633.5624	-36.7893	1846.3766	632.4870
-37.3185	321.2777	648.0104	-35.9446	1085.3577	646.7972	-34.5288	1848.1449	645.5840
-34.4893	320.5307	661.3750	-33.5195	1085.7700	660.0345	-32.5165	1849.9077	658.6940
-31.7882	319.7478	674.7375	-31.2751	1086.1727	673.2782	-30.7358	1851.6665	671.8190
-28.9637	318.8966	688.0651	-28.9568	1086.5435	686.5035	-28.9301	1853.4235	684.9420
-26.2672	317.9784	701.3977	-26.8173	1086.8904	699.7464	-27.3524	1855.1794	698.0950
-23.7178	317.0035	714.7364	-24.8730	1087.2188	713.0082	-26.0170	1856.9347	711.2800
-21.3032	315.9301	728.0821	-23.1096	1087.5071	726.2906	-24.9077	1858.6905	724.4990
-18.8079	314.8452	741.4179	-21.3088	1087.7958	739.5859	-23.8041	1860.4503	737.7540
-16.4454	313.6469	754.7687	-19.6844	1088.0376	752.9109	-22.9195	1862.2125	751.0530
-14.2303	312.4165	768.1346	-18.2477	1088.2726	766.2673	-22.2626	1863.9779	764.4000
-12.1595	311.1016	781.5196	-16.9933	1088.4739	779.6558	-21.8255	1865.7463	777.7920
-10.1965	309.7369	794.9206	-15.8817	1088.6586	793.0778	-21.5660	1867.5194	791.2350
-8.3742	308.3103	808.3416	-14.9426	1088.8196	806.5338	-21.5106	1869.2964	804.7260
-6.6916	306.8192	821.7838	-14.1718	1088.9552	820.0244	-21.6519	1871.0774	818.2650
-5.1358	305.2810	835.2479	-13.5523	1089.0735	833.5500	-21.9688	1872.8627	831.8520
-3.5611	303.6734	848.7292	-12.9348	1089.1648	847.1156	-22.3085	1874.6560	845.5020
-2.1019	302.0242	862.2335	-12.4483	1089.2408	860.7177	-22.7948	1876.4540	859.2020
-0.7599	300.2998	875.7608	-12.0888	1089.2844	874.3539	-23.4176	1878.2562	872.9470
0.4710	298.5343	889.3092	-11.8435	1089.3116	888.0216	-24.1576	1880.0621	886.7340
1.5785	296.7007	902.8787	-11.7168	1089.3081	901.7179	-25.0116	1881.8711	900.5570
2.5953	294.8184	916.4672	-11.6676	1089.2833	915.4406	-25.9298	1883.6832	914.4140
3.5356	292.8795	930.0717	-11.6723	1089.2328	929.1859	-26.8791	1885.4984	928.3000
4.4145	290.8766	943.6902	-11.7054	1089.1527	942.9496	-27.8241	1887.3161	942.2090
5.0887	289.2431	954.5937	-11.7297	1089.0747	953.9714	-28.5465	1888.7722	953.3490
5.7451	287.5623	965.5021	-11.7374	1088.9744	964.9985	-29.2181	1890.2296	964.4950
6.3958	285.8484	976.4155	-11.7109	1088.8586	976.0297	-29.8156	1891.6883	975.6440
7.0557	284.0958	987.3270	-11.6289	1088.7246	987.0549	-30.3113	1893.1472	986.7830
7.1892	283.9751	988.0480	-11.5325	1088.7158	987.7870	-30.2518	1893.2460	987.5260
7.3672	283.8630	988.7091	-11.3885	1088.7087	988.4615	-30.1419	1893.3383	988.2140
7.5877	283.7634	989.2851	-11.1978	1088.7039	989.0521	-29.9808	1893.4206	988.8190
7.8479	283.6804	989.7522	-10.9618	1088.7012	989.5356	-29.7690	1893.4897	989.3190
8.1443	283.6167	990.0922	-10.6834	1088.7009	989.8926	-29.5086	1893.5431	989.6930
8.2471	283.5834	990.2783	-10.5902	1088.6998	990.0851	-29.4250	1893.5706	989.8920
8.3546	283.5500	990.4643	-10.4924	1088.6987	990.2776	-29.3368	1893.5981	990.0910
8.4664	283.5167	990.6483	-10.3900	1088.6978	990.4687	-29.2438	1893.6256	990.2890
8.5827	283.4836	990.8303	-10.2832	1088.6968	990.6577	-29.1466	1893.6530	990.4850
8.7032	283.4508	991.0094	-10.1720	1088.6959	990.8437	-29.0446	1893.6799	990.6780
8.8278	283.4185	991.1844	-10.0565	1088.6954	991.0262	-28.9381	1893.7066	990.8680
8.9563	283.3866	991.3554	-9.9369	1088.6948	991.2048	-28.8276	1893.7328	991.0540
9.0886	283.3554	991.5215	-9.8132	1088.6943	991.3782	-28.7125	1893.7583	991.2350
9.2245	283.3249	991.6815	-9.6857	1088.6941	991.5463	-28.5934	1893.7833	991.4110
9.3639	283.2953	991.8355	-9.5544	1088.6938	991.7083	-28.4699	1893.8076	991.5810
9.5066	283.2666	991.9825	-9.4195	1088.6938	991.8633	-28.3428	1893.8309	991.7440
9.6524	283.2389	992.1226	-9.2810	1088.6940	992.0118	-28.2118	1893.8536	991.9010
9.8012	283.2123	992.2546	-9.1391	1088.6941	992.1519	-28.0768	1893.8751	992.0490
9.9526	283.1868	992.3786	-8.9943	1088.6946	992.2844	-27.9384	1893.8957	992.1900
10.1067	283.1626	992.4937	-8.8462	1088.6951	992.4073	-27.7965	1893.9150	992.3210
10.2632	283.1399	992.5987	-8.6955	1088.6958	992.5213	-27.6515	1893.9333	992.4440
10.4219	283.1185	992.6947	-8.5420	1088.6967	992.6258	-27.5031	1893.9504	992.5570
10.5825	283.0985	992.7808	-8.3860	1088.6976	992.7204	-27.3517	1893.9661	992.6600
10.7449	283.0802	992.8558	-8.2278	1088.6990	992.8044	-27.1977	1893.9806	992.7530
10.9089	283.0633	992.9208	-8.0675	1088.7002	992.8779	-27.0411	1893.9936	992.8350
11.0742	283.0481	992.9749	-7.9052	1088.7017	992.9404	-26.8817	1894.0052	992.9060
11.2407	283.0346	993.0179	-7.7412	1088.7034	992.9919	-26.7203	1894.0154	992.9660
11.4082	283.0226	993.0499	-7.5758	1088.7051	993.0325	-26.5569	1894.0242	993.0150
11.5763	283.0125	993.0700	-7.4090	1088.7072	993.0615	-26.3915	1894.0315	993.0530
11.7451	283.0041	993.0790	-7.2410	1088.7092	993.0790	-26.2243	1894.0372	993.0790

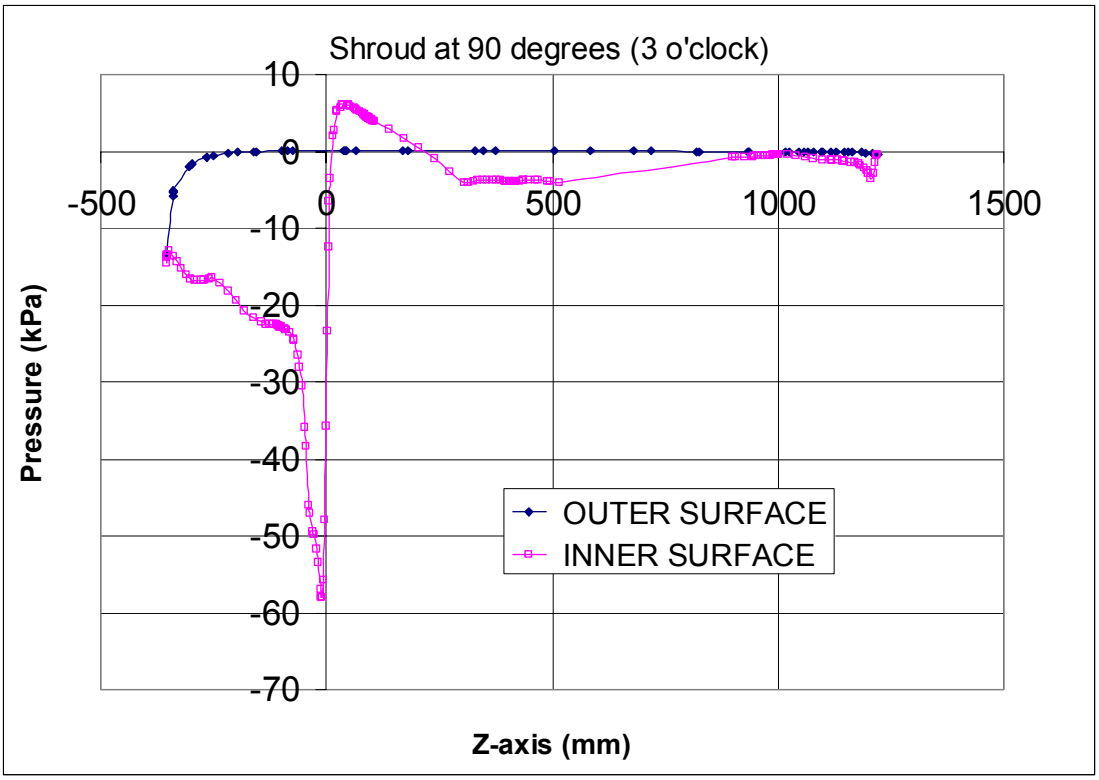
APPENDIX C

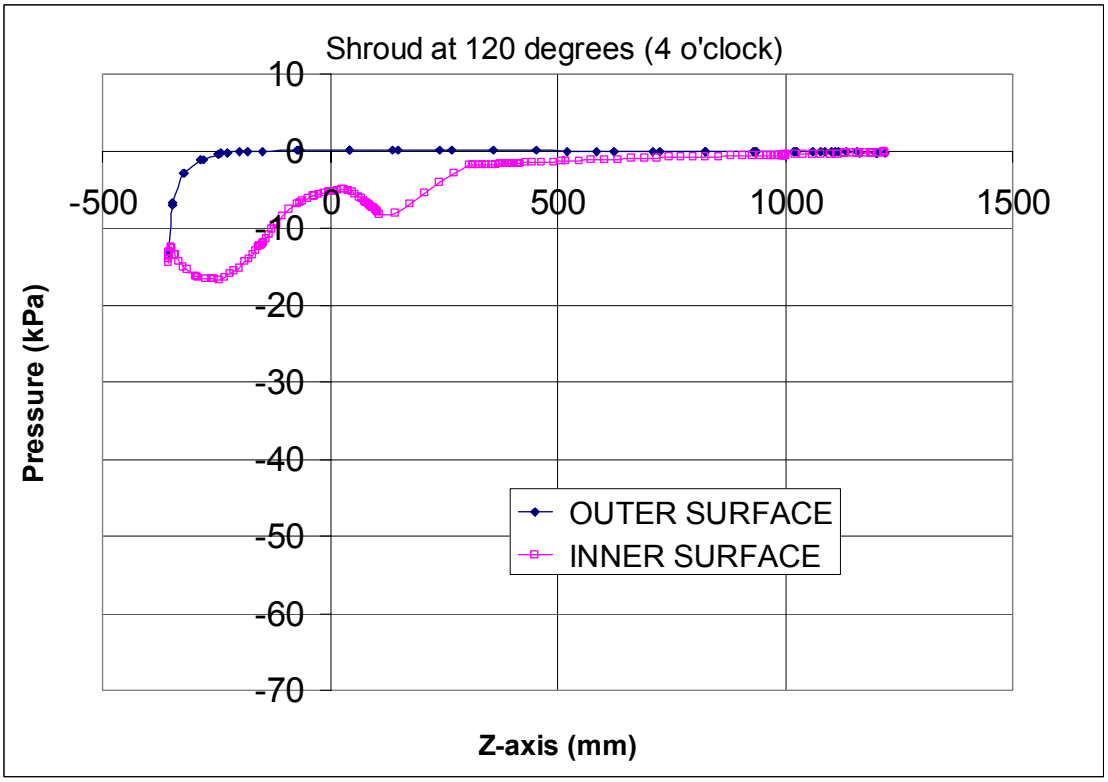
SHROUD PRESSURE DISTRIBUTIONS

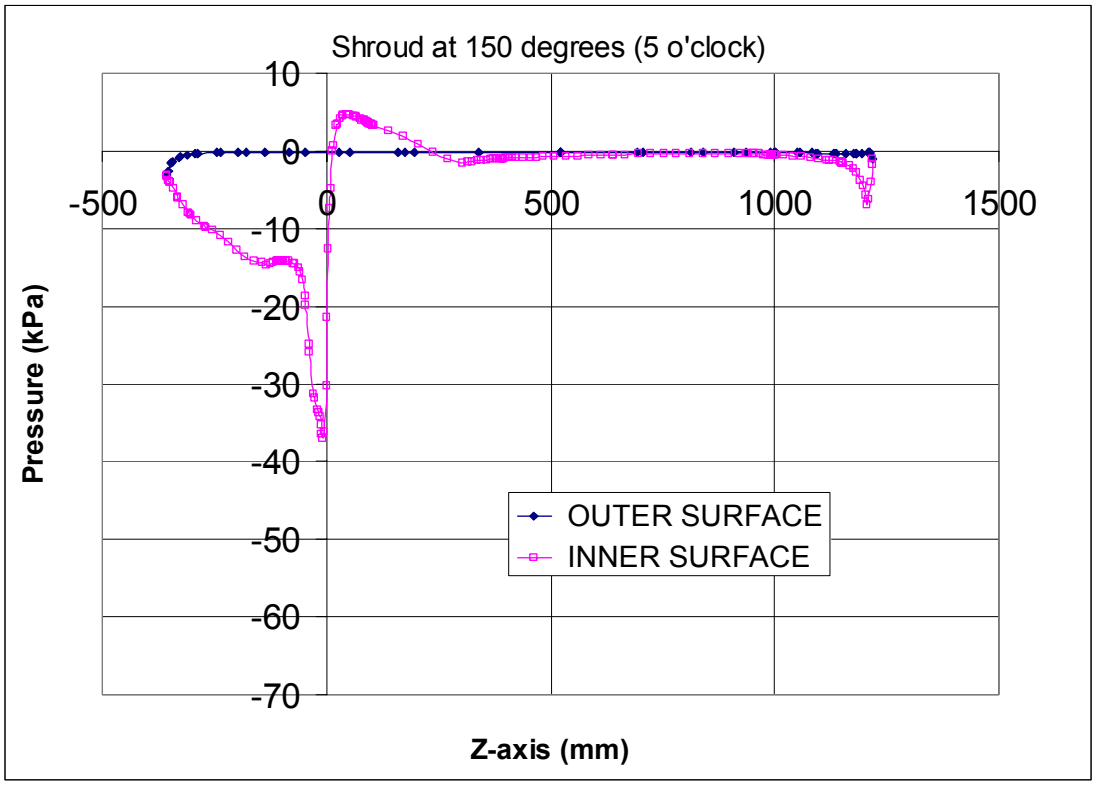
Shroud pressure distributions were obtained from CFD analysis for the maximum power design case. Cutting planes through the shroud were taken at increments of 30 degrees around the full circumference of the shroud (12 places). Pressure distributions at each increment were extracted and are shown in the figures and tables below. Pressure distributions at each increment were separated into the inner and outer surface of the shroud with the leading and trailing edge of the shroud being the dividing point between the two shroud surfaces. The pressure distribution for the inner surface of the shroud is influenced by the location of the propeller. With a six bladed propeller and twelve shroud increments, the inner surface pressure distribution plots show a pressure spike every other increments due to the proximity of the blade. The remaining pressure distribution plots represent the inner surface pressures at locations between two adjacent propeller blades and no pressure spike is occurring.

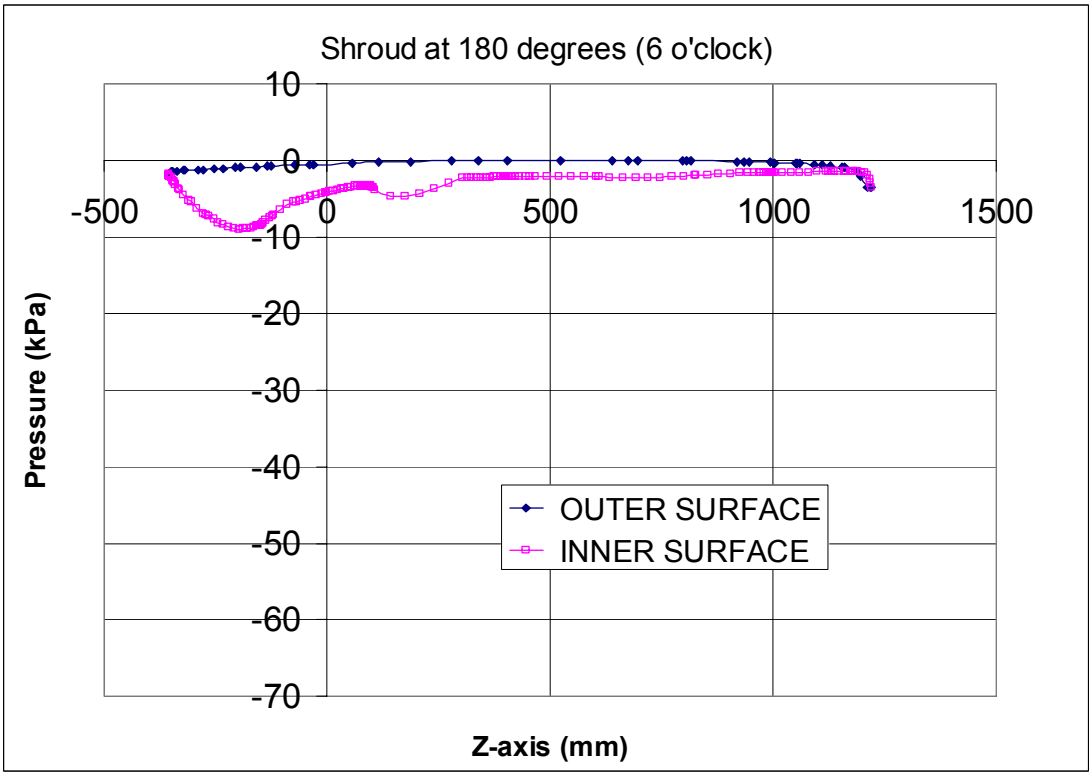

Shroud at 30 degrees (1 o'clock)
10
0
-10
-20
-30
-40
-50
-60
-70
-500
0
500
1000
1500
Pressure (kPa)
Z-axis (mm)
OUTER SURFACE
INNER SURFACE

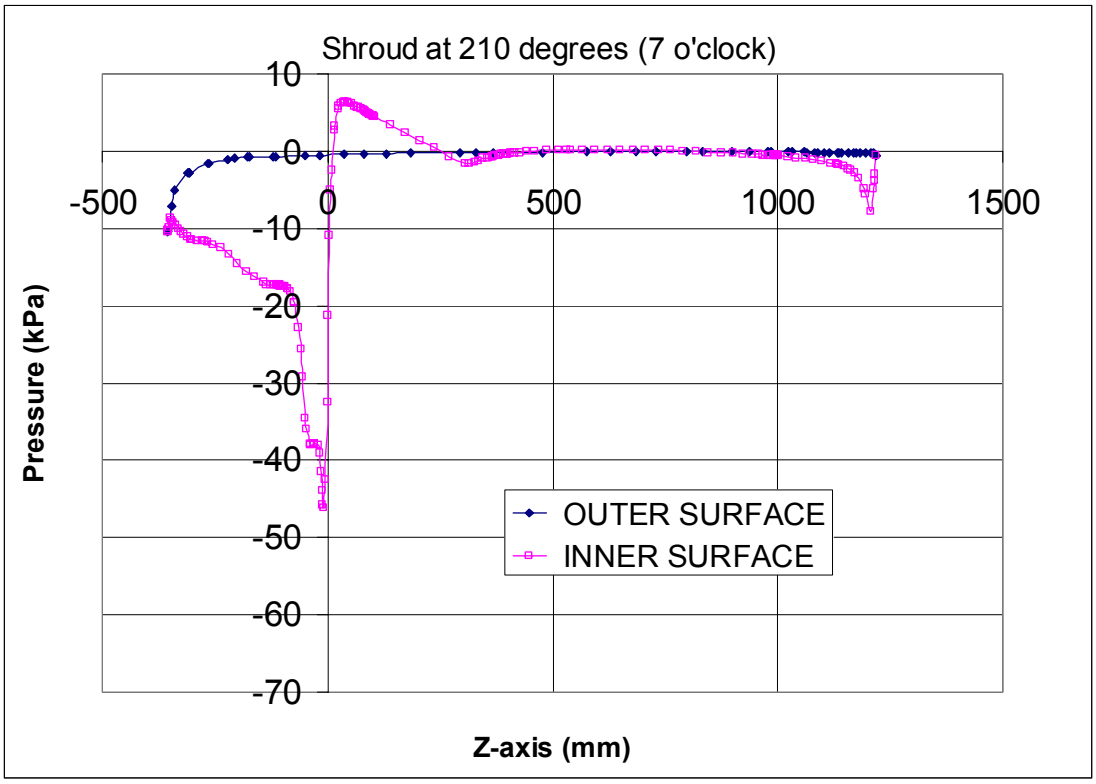

Shroud at 60 degrees (2 o'clock)
10
0
-10
-20
-30
-40
-50
-60
-70
-500
0
500
1000
1500
Pressure (kPa)
Z-axis (mm)
OUTER SURFACE
INNER SURFACE

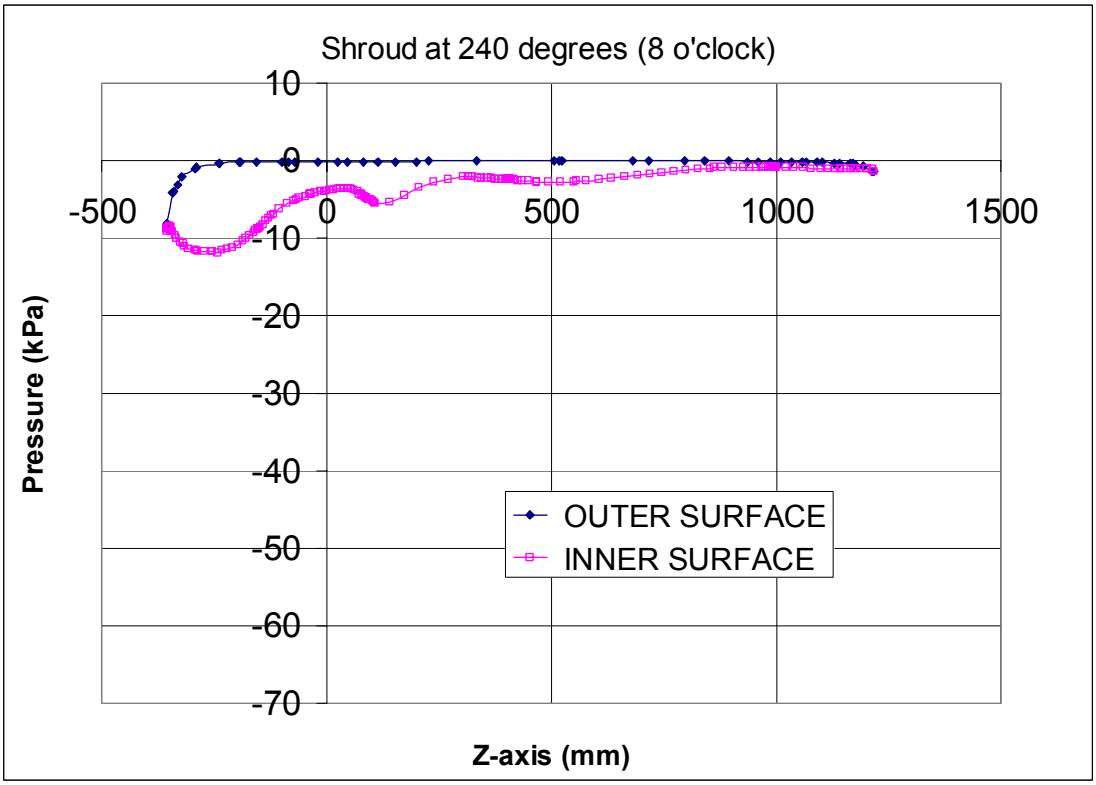

Shroud at 90 degrees (3 o'clock)
10
0
-10
-20
-30
-40
-50
-60
-70
-500
0
500
1000
1500
Pressure (kPa)
Z-axis (mm)
OUTER SURFACE
INNER SURFACE

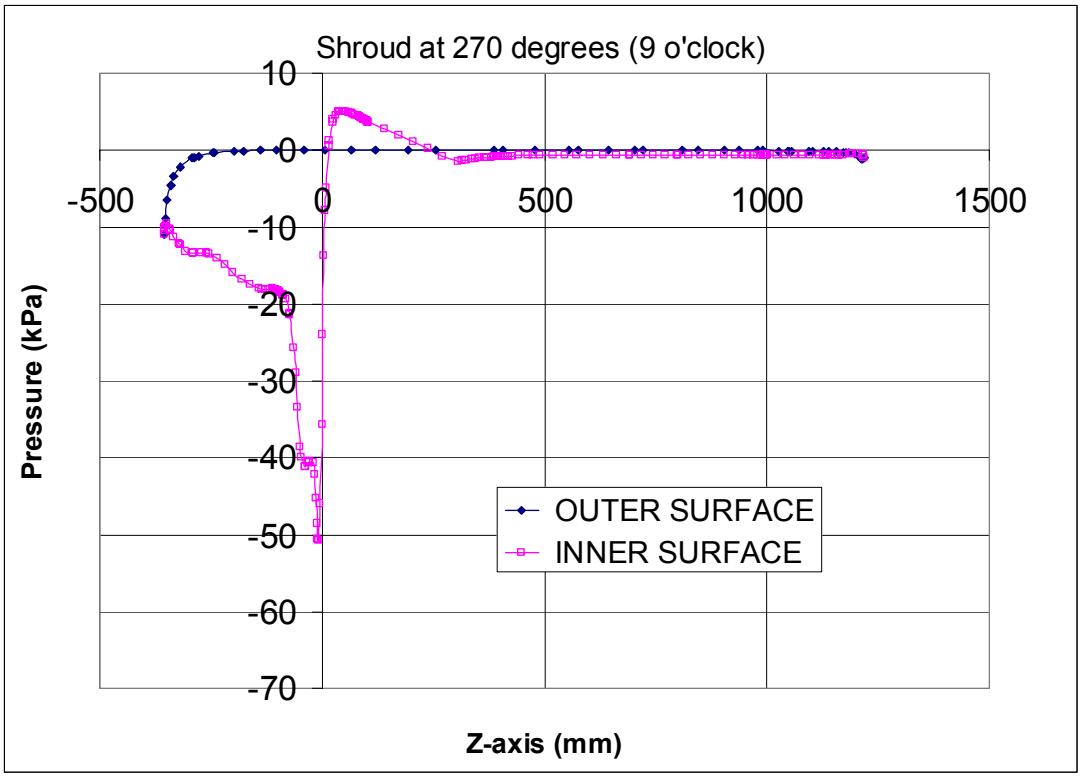

Shroud at 120 degrees (4 o'clock)
10
0
-10
-20
-30
-40
-50
-60
-70
-500
0
500
1000
1500
Pressure (kPa)
Z-axis (mm)
OUTER SURFACE
INNER SURFACE

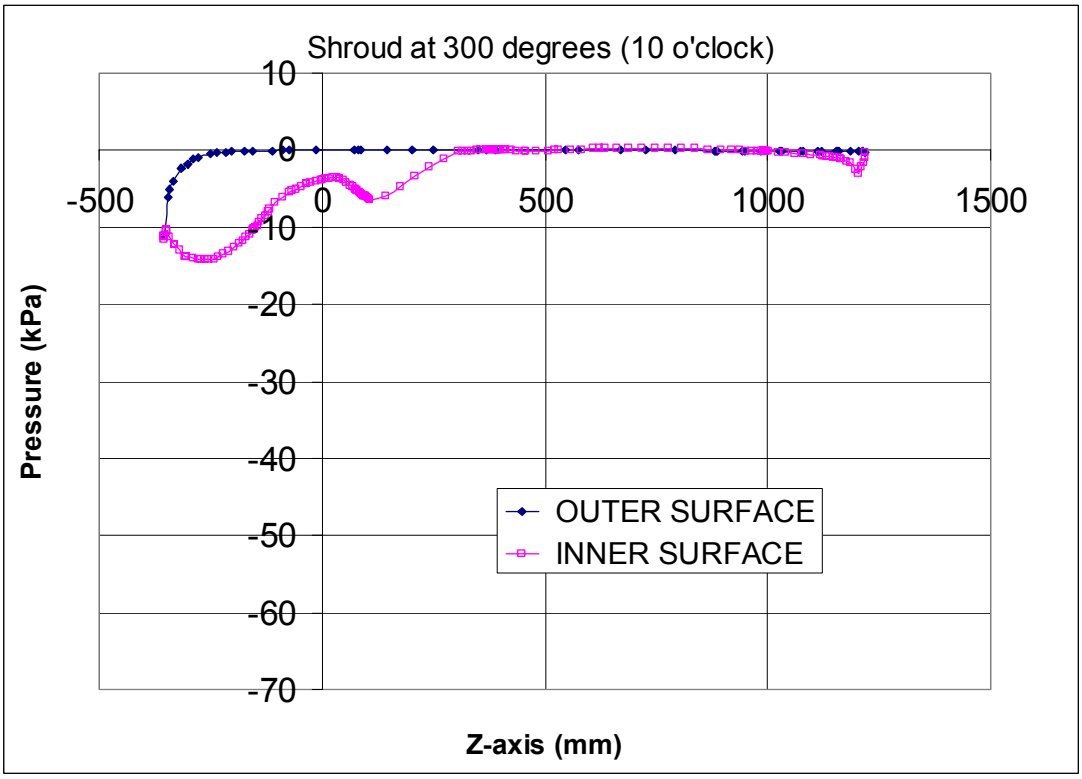

Shroud at 150 degrees (5 o'clock)
10
0
-10
-20
-30
-40
-50
-60
-70
-500
0
500
1000
1500
Pressure (kPa)
Z-axis (mm)
OUTER SURFACE
INNER SURFACE

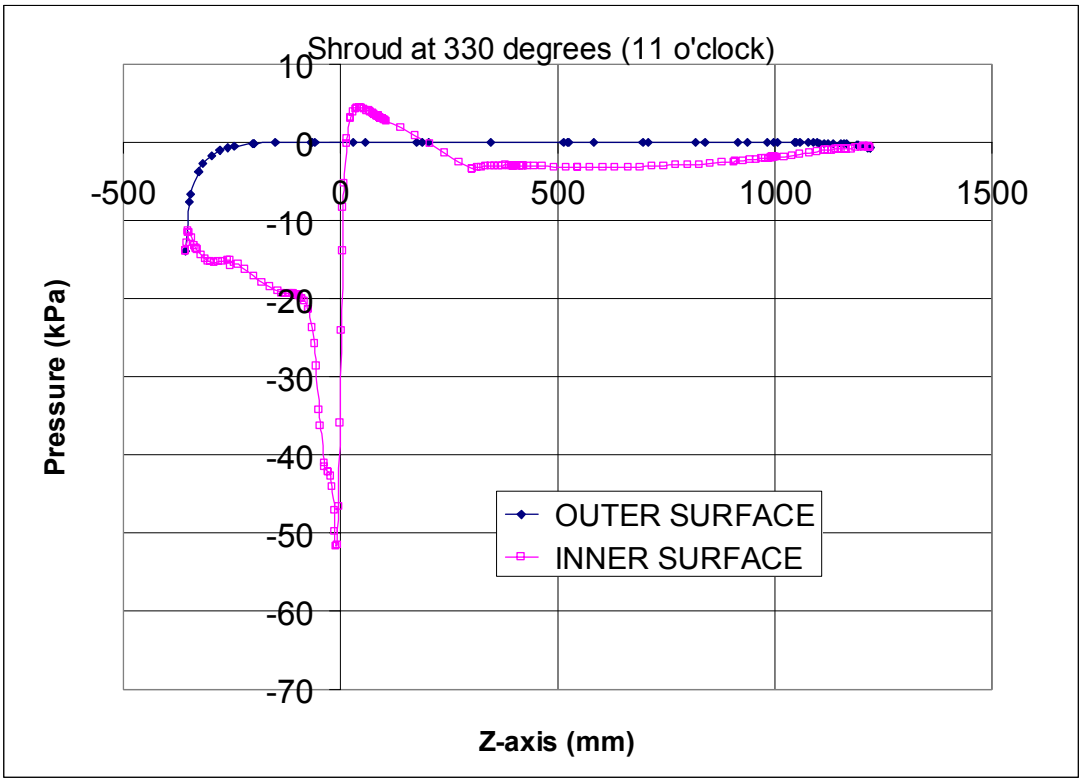

Shroud at 180 degrees (6 o'clock)
10
0
-10
-20
-30
-40
-50
-60
-70
-500
0
500
1000
1500
Pressure (kPa)
Z-axis (mm)
OUTER SURFACE
INNER SURFACE

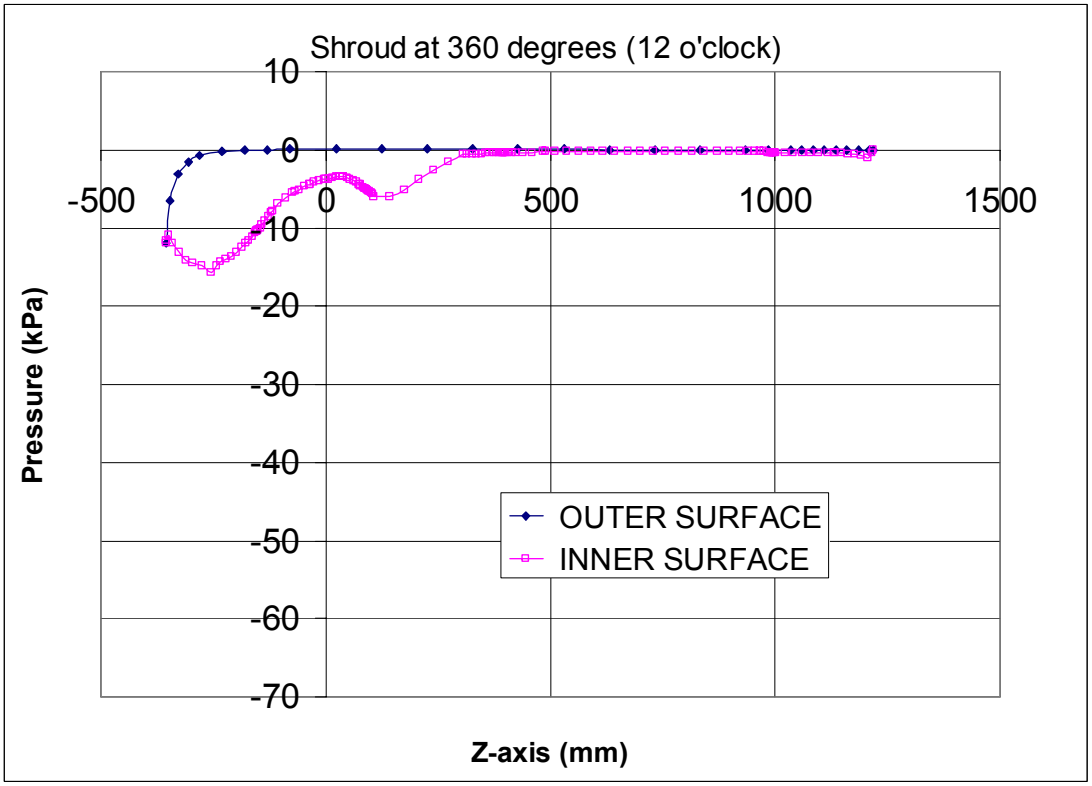

Shroud at 210 degrees (7 o'clock)
10
0
-10
-20
-30
-40
-50
-60
-70
-500
0
500
1000
1500
Pressure (kPa)
Z-axis (mm)
OUTER SURFACE
INNER SURFACE


Shroud at 240 degrees (8 o'clock)
10
0
-10
-20
-30
-40
-50
-60
-70
-500
0
500
1000
1500
Pressure (kPa)
Z-axis (mm)
OUTER SURFACE
INNER SURFACE


Shroud at 270 degrees (9 o'clock)
10
0
-10
-20
-30
-40
-50
-60
-70
-500
0
500
1000
1500
Pressure (kPa)
Z-axis (mm)
OUTER SURFACE
INNER SURFACE


Shroud at 300 degrees (10 o'clock)
10
0
-10
-20
-30
-40
-50
-60
-70
-500
0
500
1000
1500
Pressure (kPa)
Z-axis (mm)
OUTER SURFACE
INNER SURFACE


Shroud at 330 degrees (11 o'clock)
10
0
-10
-20
-30
-40
-50
-60
-70
-500
0
500
1000
1500
Pressure (kPa)
Z-axis (mm)
OUTER SURFACE
INNER SURFACE


Shroud at 360 degrees (12 o'clock)
10
0
-10
-20
-30
-40
-50
-60
-70
-500
0
500
1000
1500
Pressure (kPa)
Z-axis (mm)
OUTER SURFACE
INNER SURFACE

	30 degrees	OUTER SURFACE		30 degrees	INNER SURFACE				INNER SURFACE						
X1	Y1	Z1	Pressure	X1	Y1	Z1	Pressure	X1	Y1	Z1	Pressure	X1	Y1	Z1	Pressure
[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]
1730.9412	999.5575	-355.6000	-9.5909	1730.9412	999.5575	-355.6000	-9.5909	1561.6945	901.8236	-3.9065	-46.3886	1577.9880	911.2325	447.1896	-1.9846
1739.1307	1004.2867	-353.3609	-6.5936	1717.2603	991.6573	-354.4290	-9.6500	1561.6951	901.8240	-0.4978	-35.6920	1580.2472	912.5370	466.5190	-1.9355
1751.5509	1011.4590	-345.3550	-4.0946	1711.8789	988.5497	-353.9698	-9.3489	1561.6957	901.8242	2.2107	-24.3463	1582.2485	913.6927	483.4696	-1.8991
1757.4454	1014.8629	-340.0485	-2.8648	1706.6193	985.5125	-352.6945	-9.2413	1561.6965	901.8247	4.4186	-14.3711	1583.3283	914.3163	493.2783	-1.8779
1764.6434	1019.0194	-327.9158	-1.8576	1693.2094	977.7687	-349.4602	-8.9834	1561.6925	901.8223	6.3520	-8.6792	1586.3690	916.0722	520.6087	-1.8278
1768.8838	1021.4680	-320.8710	-1.2388	1680.8857	970.6522	-344.5981	-9.7073	1561.6989	901.8261	8.9102	-5.9420	1589.5188	917.8911	548.4561	-1.7813
1770.9937	1022.6864	-315.0541	-1.0071	1675.1879	967.3620	-342.3563	-10.0766	1561.7059	901.8302	14.2446	-0.4611	1592.7455	919.7545	576.7079	-1.7361
1776.4598	1025.8430	-299.6236	-0.4118	1669.9629	964.3447	-339.3082	-10.5201	1561.7036	901.8288	15.9176	0.1609	1596.0376	921.6555	605.3816	-1.6913
1779.9294	1027.8466	-283.3504	-0.1593	1658.1849	957.5435	-332.5002	-11.5018	1561.7078	901.8311	23.1087	2.7525	1599.3532	923.5701	634.3046	-1.6465
1781.8666	1028.9651	-273.5674	-0.0068	1647.1764	951.1863	-324.1333	-12.3249	1561.7087	901.8318	23.8960	3.0291	1602.6886	925.4962	663.3715	-1.6036
1784.1598	1030.2894	-244.9174	0.1808	1642.0430	948.2219	-320.2463	-12.7213	1561.6934	901.8229	30.4621	3.6398	1606.0186	927.4191	692.5216	-1.5652
1784.3637	1030.4071	-239.9073	0.1988	1637.4440	945.5662	-315.7863	-13.0592	1561.7054	901.8298	35.6529	4.1292	1609.0847	929.1898	719.4147	-1.5370
1784.3684	1030.4099	-200.4538	0.2558	1627.2286	939.6672	-305.9518	-13.7795	1561.6978	901.8255	37.9465	4.1354	1612.1387	930.9532	746.2599	-1.5174
1784.3574	1030.4036	-193.7557	0.2615	1618.5404	934.6501	-295.3781	-14.0687	1561.6906	901.8214	45.4931	4.1374	1615.1740	932.7060	773.0398	-1.5076
1784.3865	1030.4203	-181.9714	0.2618	1613.7258	931.8697	-289.5594	-14.2471	1561.7044	901.8293	49.6242	4.1650	1618.1943	934.4503	799.7316	-1.5048
1784.2428	1030.3374	-145.1717	0.2611	1608.6622	928.9457	-281.9828	-14.3424	1561.6888	901.8203	53.0610	4.0846	1621.2079	936.1904	826.3238	-1.5096
1784.3088	1030.3755	-109.3835	0.2561	1600.9414	924.4872	-270.5879	-14.4396	1561.6821	901.8165	60.6301	3.9370	1624.2096	937.9238	852.7860	-1.5179
1784.0018	1030.1982	-77.1639	0.2516	1597.3231	922.3978	-263.9407	-14.3729	1561.7052	901.8298	65.8068	3.8642	1627.2107	939.6569	879.1392	-1.5249
1784.1832	1030.3030	-47.4082	0.2433	1591.9500	919.2950	-254.0000	-14.6739	1561.6912	901.8217	68.2011	3.7902	1630.2201	941.3947	905.4355	-1.5301
1783.9002	1030.1394	24.1957	0.2205	1584.0862	914.7539	-236.6422	-15.0390	1561.6663	901.8073	74.3218	3.6071	1632.6563	942.8015	926.6415	-1.5321
1784.0609	1030.2323	85.3120	0.2015	1577.4454	910.9192	-218.6432	-15.8528	1561.6738	901.8116	79.2821	3.4826	1634.6256	943.9387	943.7634	-1.5330
1784.0178	1030.2075	131.8243	0.1867	1571.9779	907.7618	-200.1227	-16.9065	1561.6973	901.8252	83.3077	3.3925	1636.2234	944.8614	957.5955	-1.5330
1783.4374	1029.8722	211.5978	0.1634	1567.6854	905.2831	-181.1894	-17.7709	1561.7105	901.8328	85.0278	3.3546	1637.5170	945.6083	968.7738	-1.5330
1782.3488	1029.2435	266.8137	0.1484	1564.5646	903.4809	-161.9473	-18.2963	1561.6960	901.8245	86.5864	3.3003	1638.5597	946.2104	977.8085	-1.5331
1780.1271	1027.9608	355.2586	0.1267	1562.6112	902.3529	-142.4955	-18.6233	1561.6752	901.8123	89.2612	3.2095	1639.4010	946.6963	985.1118	-1.5324
1777.0477	1026.1825	438.1718	0.1086	1562.1003	902.0579	-134.2899	-18.9612	1561.6625	901.8051	91.4425	3.1393	1640.0739	947.0849	990.9362	-1.5307
1775.1622	1025.0936	478.1295	0.1001	1561.7772	901.8713	-126.0791	-18.9247	1561.6553	901.8009	93.2200	3.0847	1640.1471	947.1273	991.5994	-1.5319
1773.5542	1024.1652	507.3947	0.0943	1561.7203	901.8385	-117.8668	-18.8885	1561.6541	901.8002	93.9366	3.0636	1640.2726	947.1996	992.7339	-1.5325
1766.9977	1020.3789	609.5701	0.0747	1561.6773	901.8135	-111.5988	-18.8660	1561.6523	901.7993	95.1659	3.0283	1640.4876	947.3237	994.6744	-1.5321
1762.6567	1017.8722	669.2162	0.0633	1561.6553	901.8009	-107.9397	-18.9375	1561.6500	901.7979	97.2782	2.9697	1640.7690	947.4863	997.2135	-1.5308
1757.6520	1014.9821	730.1519	0.0517	1561.6502	901.7980	-105.8007	-19.0112	1561.6482	901.7968	100.0568	2.8936	1641.0513	947.6493	999.7543	-1.5308
1752.8314	1012.1983	784.8304	0.0402	1561.6427	901.7937	-104.6758	-19.0265	1561.6475	901.7964	102.8492	2.8150	1641.3339	947.8125	1002.2961	-1.5304
1748.4305	1009.6570	833.2926	0.0296	1561.6355	901.7895	-103.1306	-19.0285	1561.6478	901.7966	105.6484	2.7767	1643.5206	949.0752	1021.5071	-1.5173
1744.2754	1007.2576	874.7961	0.0198	1561.6305	901.7865	-101.0131	-19.0381	1561.6478	901.7966	138.9613	1.9305	1645.7075	950.3382	1040.7221	-1.5015
1739.7888	1004.6668	928.0131	0.0008	1561.6331	901.7880	-98.1327	-19.0776	1561.6477	901.7966	172.2125	1.0697	1647.8976	951.6027	1059.9397	-1.4729
1737.6462	1003.4295	950.7061	-0.0069	1561.6547	901.8005	-94.2081	-19.1865	1561.6477	901.7966	205.4145	0.0746	1650.0867	952.8668	1079.1599	-1.4203
1736.5109	1002.7738	963.7323	-0.0143	1561.7100	901.8325	-89.4107	-19.4114	1561.6480	901.7966	238.5794	-1.0154	1652.2802	954.1335	1098.3807	-1.3423
1732.5129	1000.4653	1007.3669	-0.0425	1561.7052	901.8298	-88.9202	-19.4267	1562.0059	902.0032	271.7152	-2.0248	1654.5288	955.4321	1117.6001	-1.2559
1731.5704	999.9211	1017.4882	-0.0495	1561.6541	901.8002	-81.8363	-19.7238	1563.3107	902.7568	304.8000	-2.6239	1655.6786	956.0961	1127.4917	-1.2056
1728.0670	997.8978	1055.8395	-0.0853	1561.7095	901.8322	-72.7758	-20.6565	1563.8716	903.0806	315.1229	-2.5075	1656.1368	956.3607	1131.5944	-1.1749
1727.6051	997.6311	1060.8552	-0.0906	1561.7085	901.8316	-72.5179	-20.6879	1564.5714	903.4848	325.4366	-2.4468	1656.7869	956.7360	1137.2001	-1.1398
1724.1939	995.6612	1098.0402	-0.1462	1561.6753	901.8124	-63.5046	-22.7778	1565.5996	904.0787	335.7157	-2.3908	1657.9407	957.4024	1147.5066	-1.0692
1724.0646	995.5865	1099.4437	-0.1487	1561.6921	901.8221	-59.5290	-24.5921	1566.6281	904.6725	345.9956	-2.3493	1658.5149	957.7339	1152.4487	-1.0532
1723.1161	995.0388	1109.7930	-0.1765	1561.6803	901.8153	-54.6782	-27.2818	1567.6566	905.2665	356.2765	-2.3077	1660.0520	958.6216	1165.8250	-1.0243
1720.7362	993.6646	1135.3888	-0.2436	1561.6964	901.8246	-48.2442	-32.8614	1568.7909	905.9214	366.5416	-2.2636	1660.2703	958.7477	1167.7654	-1.0193
1720.4407	993.4937	1138.6863	-0.2573	1561.6940	901.8232	-45.8589	-34.9464	1569.7358	906.4671	374.7789	-2.2288	1660.6598	958.9726	1171.1366	-1.0183
1717.5758	991.8395	1169.6610	-0.4258	1561.7024	901.8281	-38.1953	-40.3756	1570.6804	907.0126	382.9998	-2.1950	1661.7867	959.6234	1181.1137	-1.0114
1717.1389	991.5873	1174.3134	-0.4584	1561.7026	901.8282	-36.8971	-40.9670	1571.6242	907.5576	391.2024	-2.1620	1663.5409	960.6364	1194.1954	-1.0087
1716.3187	991.1136	1181.0219	-0.6177	1561.7025	901.8282	-29.0240	-41.8456	1572.3449	907.9738	397.4601	-2.1388	1663.5804	960.6591	1194.4938	-1.0084
1712.2493	988.7636	1202.6022	-1.2071	1561.7041	901.8290	-27.6342	-41.9714	1572.7661	908.2169	401.1126	-2.1265	1663.7211	960.7404	1194.8442	-1.0088
1704.5408	984.3123	1213.0143	-2.2017	1561.6980	901.8256	-20.6052	-42.4190	1573.0120	908.3590	403.2468	-2.1198	1668.4625	963.4784	1207.1885	-1.0433
1697.8919	980.4727	1216.3643	-2.4294	1561.7025	901.8282	-17.9772	-43.9811	1573.3298	908.5425	406.1260	-2.1108	1675.7460	967.6842	1214.0280	-1.6403
1689.2596	975.4879	1219.2000	-2.4097	1561.6947	901.8236	-12.9372	-47.6627	1573.7688	908.7960	410.0821	-2.0976	1677.9174	968.9382	1216.0396	-1.8302
				1561.6951	901.8239	-11.5422	-50.3755	1574.3711	909.1439	415.4781	-2.0800	1680.6589	970.5213	1216.7997	-1.9716
				1561.6948	901.8237	-9.6880	-52.1495	1575.2100	909.6284	422.9285	-2.0563	1689.2596	975.4879	1219.2000	-2.4097
				1561.6945	901.8236	-7.2175	-51.9448	1576.3721	910.2994	433.1435	-2.0250				

60 degrees OUTER SURFACE				60 degrees INNER SURFACE				INNER SURFACE							
X2	Y2	Z2	Pressure	X2	Y2	Z2	Pressure	X2	Y2	Z2	Pressure	X2	Y2	Z2	Pressure
[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]
999.5613	1730.9479	-355.6000	-9.8077	999.5613	1730.9479	-355.6000	-9.8077	901.7636	1561.5907	68.3280	-5.3084	943.9379	1634.6244	943.2221	-0.3753
1005.1278	1740.5872	-352.3828	-7.4256	994.8196	1722.7365	-354.8919	-9.8563	901.8085	1561.6683	73.9611	-5.5568	944.8757	1636.2483	957.5808	-0.3604
1008.5413	1746.4985	-350.3835	-5.7485	988.2369	1711.3372	-353.8659	-9.6331	901.8328	1561.7105	77.2688	-5.7140	945.6378	1637.5679	969.1923	-0.3480
1012.7087	1753.7151	-343.1162	-4.1040	980.4642	1697.8772	-350.5312	-9.3218	901.8204	1561.6892	78.9520	-5.7997	946.2540	1638.6350	978.5801	-0.3379
1015.9719	1759.3662	-337.5353	-2.7393	977.3091	1692.4135	-349.2030	-9.2181	901.7965	1561.6477	83.3247	-6.0289	946.7530	1639.4990	986.1683	-0.3297
1017.5743	1762.1410	-332.6705	-2.3567	975.0129	1688.4370	-347.6288	-9.4630	901.7824	1561.6231	87.1084	-6.2260	947.1569	1640.1986	992.2901	-0.3231
1022.3508	1770.4125	-317.4816	-1.2219	967.3535	1675.1733	-342.3531	-10.3370	901.7738	1561.6085	90.3437	-6.3887	947.1960	1640.2664	992.8894	-0.3225
1024.9746	1774.9561	-304.4713	-0.7447	959.8430	1662.1671	-334.8541	-11.4746	901.7687	1561.5995	93.0814	-6.5250	947.2631	1640.3825	993.9128	-0.3212
1025.6294	1776.0901	-300.8527	-0.6239	957.9351	1658.8633	-332.9489	-11.7583	901.7673	1561.5969	93.9265	-6.5695	947.3781	1640.5815	995.6631	-0.3190
1027.5759	1779.4608	-287.2566	-0.2656	956.0206	1655.5481	-330.4356	-12.0091	901.7651	1561.5934	95.3940	-6.6302	947.5284	1640.8418	997.9529	-0.3161
1029.2579	1782.3737	-268.8124	-0.0552	948.5091	1642.5403	-320.6747	-12.9415	901.7622	1561.5884	97.9605	-6.7060	947.6787	1641.1023	1000.2434	-0.3131
1029.7798	1783.2773	-258.9690	0.0173	941.4901	1630.3855	-308.9996	-13.9056	901.7593	1561.5834	101.4025	-6.8341	947.8292	1641.3629	1002.5342	-0.3097
1030.3358	1784.2401	-242.0684	0.1290	939.8298	1627.5103	-306.2403	-14.1136	901.7571	1561.5797	104.9091	-7.1325	949.0959	1643.5565	1021.7011	-0.2864
1030.4098	1784.3683	-226.1254	0.1607	938.5135	1625.2306	-303.4755	-14.1935	901.7556	1561.5767	108.4452	-7.3708	950.3593	1645.7441	1040.8717	-0.2629
1030.3983	1784.3484	-198.5359	0.1965	932.1407	1614.1951	-290.2078	-14.6182	901.7565	1561.5783	141.8601	-7.0484	951.6213	1647.9298	1060.0483	-0.2379
1030.3901	1784.3341	-173.6571	0.2108	925.4831	1602.6659	-273.2516	-14.8167	901.7556	1561.5768	174.9025	-5.8439	952.8811	1650.1112	1079.2301	-0.2110
1030.3669	1784.2942	-149.1515	0.2149	925.1077	1602.0158	-272.3002	-14.8270	901.7536	1561.5732	207.6474	-4.4935	954.1420	1652.2948	1098.4143	-0.1831
1030.4183	1784.3831	-86.4308	0.2123	924.3089	1600.6326	-269.7643	-14.8390	901.7506	1561.5682	240.1698	-3.2939	955.4357	1654.5350	1117.6000	-0.1547
1030.3700	1784.2993	-76.4556	0.2117	919.2984	1591.9557	-254.0000	-14.8993	901.9633	1561.9365	272.5402	-2.3696	955.8926	1655.3263	1124.4059	-0.1403
1030.3898	1784.3335	-68.7995	0.2098	916.2921	1586.7498	-243.3062	-15.2890	902.7036	1563.2185	304.8000	-1.5090	956.3538	1656.1251	1131.5496	-0.1262
1030.3035	1784.1841	27.7243	0.1877	913.6982	1582.2578	-232.2890	-14.9056	903.0596	1563.8351	314.9303	-1.4610	956.9043	1657.0783	1139.7720	-0.1127
1030.3291	1784.2283	47.4368	0.1820	911.3092	1578.1210	-221.0746	-14.5777	903.4506	1564.5121	325.0506	-1.4166	957.3791	1657.9003	1147.1135	-0.1007
1030.3580	1784.2786	136.2154	0.1589	909.1710	1574.4181	-209.6263	-14.3052	904.0356	1565.5254	335.1337	-1.3826	957.6714	1658.4066	1151.4587	-0.0941
1030.2816	1784.1465	149.1895	0.1554	907.3717	1571.3024	-197.9149	-13.9208	904.6210	1566.5387	345.2158	-1.3524	958.4346	1659.7284	1163.0381	-0.0783
1029.7024	1783.1431	255.0889	0.1300	905.7543	1568.5015	-186.0530	-13.2912	905.2064	1567.5526	355.2967	-1.3238	958.7147	1660.2134	1167.3378	-0.0724
1029.6364	1783.0288	264.0816	0.1278	904.9138	1567.0459	-178.4120	-12.8979	905.8439	1568.6566	365.3639	-1.2960	959.6815	1661.8876	1181.9044	-0.0588
1029.6248	1783.0088	265.0534	0.1276	904.1091	1565.6521	-170.7769	-12.4638	906.2924	1569.4332	372.1070	-1.2775	959.7308	1661.9730	1182.6639	-0.0584
1029.3252	1782.4900	283.1011	0.1238	903.5114	1564.6174	-163.1358	-11.9791	906.7419	1570.2117	378.8447	-1.2589	959.8820	1662.2346	1184.4756	-0.0595
1027.3306	1779.0360	396.5014	0.0998	903.0943	1563.8951	-157.3571	-11.5089	907.1920	1570.9910	385.5698	-1.2404	960.7764	1663.7836	1195.6527	-0.0666
1027.0747	1778.5929	406.6296	0.0979	902.8543	1563.4796	-154.0186	-11.3042	907.5364	1571.5875	390.6985	-1.2264	962.0342	1665.9617	1201.1871	-0.0724
1023.5806	1772.5421	520.5557	0.0774	902.7322	1563.2681	-152.0790	-11.2524	907.7380	1571.9365	393.6904	-1.2182	963.2466	1668.0613	1206.6148	-0.0782
1020.4838	1767.1793	603.6752	0.0641	902.5600	1562.9700	-149.3952	-11.1870	907.8560	1572.1409	395.4376	-1.2132	965.6457	1672.2157	1210.7221	-0.0502
1018.1079	1763.0651	664.3141	0.0549	902.4391	1562.7606	-145.9285	-10.9520	908.0491	1572.4752	398.3725	-1.2049	968.6758	1677.4630	1215.8280	-0.0134
1014.8375	1757.4017	731.4366	0.0455	902.2837	1562.4912	-141.4034	-10.4355	908.3337	1572.9681	402.6645	-1.1930	972.3151	1683.7651	1217.6274	-0.0388
1011.0679	1750.8737	806.3602	0.0370	902.0841	1562.1458	-135.4780	-9.8623	908.7285	1573.6519	408.5908	-1.1770	975.4916	1689.2661	1219.2000	-0.0672
1009.3528	1747.9038	838.0574	0.0334	901.8881	1561.8062	-127.7494	-9.3253	909.2689	1574.5879	416.6518	-1.1556				
1004.7230	1739.8862	926.9226	0.0228	901.8929	1561.8147	-122.0953	-8.8694	910.0034	1575.8595	427.5308	-1.1274				
1004.2678	1739.0983	935.4366	0.0215	901.8524	1561.7445	-117.7394	-8.5203	910.3958	1576.5392	433.3186	-1.1129				
1003.8729	1738.4141	943.3473	0.0199	901.7418	1561.5530	-104.9031	-7.5101	910.9618	1577.5193	442.1847	-1.0902				
1000.5330	1732.6303	1006.3588	0.0062	901.7033	1561.4863	-88.6836	-6.6166	912.2241	1579.7052	461.9320	-1.0429				
1000.2954	1732.2189	1010.7721	0.0051	901.7668	1561.5961	-73.7128	-5.9945	913.9564	1582.7048	488.6642	-0.9838				
998.2947	1728.7543	1048.6856	-0.0049	901.8170	1561.6834	-67.9537	-5.8034	915.7269	1585.7710	515.5228	-0.9292				
997.8267	1727.9440	1057.3752	-0.0072	901.7477	1561.5631	-59.9034	-5.5314	917.5442	1588.9181	542.7332	-0.8782				
997.7725	1727.8501	1058.4452	-0.0075	901.7086	1561.4954	-47.2397	-5.1631	919.4048	1592.1400	570.4304	-0.8304				
996.0754	1724.9113	1090.0507	-0.0192	901.8181	1561.6851	-35.6485	-4.8750	920.3250	1593.7335	584.1371	-0.8086				
995.6948	1724.2521	1097.2588	-0.0225	901.8279	1561.7022	-34.7429	-4.8568	921.2571	1595.3477	598.5613	-0.7856				
994.7006	1722.5303	1115.5767	-0.0316	901.7184	1561.5126	-24.5500	-4.6515	923.1038	1598.5458	627.0018	-0.7441				
993.6557	1720.7208	1135.7159	-0.0449	901.7323	1561.5364	-13.1151	-4.4777	924.9750	1601.7859	655.6517	-0.7052				
993.5875	1720.6030	1136.9905	-0.0458	901.8229	1561.6934	-3.1270	-4.3561	926.8599	1605.0501	684.4130	-0.6685				
993.4849	1720.4251	1138.9467	-0.0479	901.7988	1561.6517	-0.4200	-4.3228	928.6702	1608.1852	712.0300	-0.6348				
992.5623	1718.8275	1156.0354	-0.0663	901.7377	1561.5460	7.3571	-4.2135	930.4846	1611.3270	739.6058	-0.6020				
992.0038	1717.8602	1166.7058	-0.0838	901.7114	1561.5004	15.5280	-4.0993	932.2945	1614.4613	767.1230	-0.5698				
991.7225	1717.3731	1171.9218	-0.0903	901.7185	1561.5127	23.8581	-4.0442	934.1005	1617.5886	794.5646	-0.5383				
990.78955	1715.7575	1188.0199	-0.15661	901.7611	1561.5864	32.1243	-4.0465	935.9081	1620.7188	821.9150	-0.5073				
990.42151	1715.1204	1193.5149	-0.18934	901.8316	1561.7085	39.2539	-4.1394	937.7145	1623.8473	849.1648	-0.4766				
985.91492	1707.3162	1207.0741	-0.23713	901.8230	1561.6936	40.1166	-4.1569	939.5253	1626.9829	876.3441	-0.4464				
983.69336	1703.469	1214.2311	-0.27051	901.7442	1561.5571	47.6388	-4.4369	941.3430	1630.1306	903.5140	-0.4170				
982.46295	1701.3383	1215.0916	-0.24071	901.7093	1561.4966	54.7495	-4.7423	942.0233	1631.3088	913.6862	-0.4061				
975.49164	1689.2661	1219.2000	-0.06724	901.7228	1561.5201	61.9955	-5.0445	942.7864	1632.6301	925.4680	-0.3938				

	90 degrees	OUTER SURFACE			90 degrees	INNER SURFACE				INNER SURFACE					
X3	Y3	Z3	Pressure	X3	Y3	Z3	Pressure	X3	Y3	Z3	Pressure	X3	Y3	Z3	Pressure
[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]
0.0000	1998.8362	-355.6000	-13.5307	0.0000	1998.8362	-355.6000	-13.5307	0.0000	1803.3761	6.2591	-6.5014	0.0000	1824.3887	462.7511	-3.7956
0.0000	2028.1201	-340.4321	-5.7908	0.0000	1994.4340	-355.3393	-13.8470	0.0000	1803.3838	8.9087	-3.5483	0.0000	1825.0658	467.9111	-3.8255
0.0000	2029.6467	-339.7719	-5.3715	0.0000	1977.1522	-354.0015	-14.5564	0.0000	1803.3920	14.1472	1.9959	0.0000	1827.8582	489.1023	-3.9558
0.0000	2030.5919	-338.5341	-5.1833	0.0000	1964.8190	-351.4925	-13.4902	0.0000	1803.3889	15.9162	2.6155	0.0000	1828.5580	494.4072	-3.9915
0.0000	2049.5977	-304.2125	-2.0596	0.0000	1948.5918	-347.3357	-12.9259	0.0000	1803.3948	23.1074	5.0575	0.0000	1831.5512	517.1204	-4.0360
0.0000	2052.0147	-297.0699	-1.7150	0.0000	1928.4242	-339.3280	-13.5787	0.0000	1803.3959	23.7926	5.2837	0.0000	1882.0316	900.5135	-0.8443
0.0000	2058.5308	-265.3216	-0.7852	0.0000	1913.4296	-331.1698	-14.3854	0.0000	1803.3777	30.4610	5.7147	0.0000	1882.6376	905.1251	-0.8227
0.0000	2059.9172	-251.0819	-0.5460	0.0000	1897.9254	-321.5652	-15.2803	0.0000	1803.3914	35.5472	6.0671	0.0000	1885.3993	926.1522	-0.7527
0.0000	2060.4421	-216.6991	-0.2590	0.0000	1885.4508	-311.2889	-16.0450	0.0000	1803.3821	37.9456	6.0468	0.0000	1887.6340	943.1213	-0.7073
0.0000	2060.4807	-196.0269	-0.1650	0.0000	1875.1762	-301.8889	-16.5692	0.0000	1803.3748	45.4922	5.9711	0.0000	1888.2708	947.9374	-0.6947
0.0000	2060.5530	-161.1222	-0.0784	0.0000	1864.5938	-290.9309	-16.7495	0.0000	1803.3903	49.5178	5.9648	0.0000	1889.4360	956.8246	-0.6682
0.0000	2060.5288	-154.3052	-0.0628	0.0000	1853.9758	-277.4180	-16.8027	0.0000	1803.3717	53.0601	5.8256	0.0000	1890.8925	967.8969	-0.6304
0.0000	2060.4648	-98.1627	0.0002	0.0000	1849.3513	-271.4623	-16.8544	0.0000	1803.3649	60.6291	5.5783	0.0000	1892.0693	976.8442	-0.5885
0.0000	2060.3276	-86.4732	0.0115	0.0000	1841.9791	-259.7307	-16.5887	0.0000	1803.3910	65.7007	5.4500	0.0000	1893.0211	984.0776	-0.5398
0.0000	2060.4211	-75.8642	0.0158	0.0000	1838.3333	-254.0000	-16.4614	0.0000	1803.3740	68.2000	5.3343	0.0000	1893.7761	989.8051	-0.4967
0.0000	2060.5510	39.2923	0.0524	0.0000	1829.2346	-236.6404	-17.1888	0.0000	1803.3462	74.3207	5.0639	0.0000	1893.8704	990.5263	-0.4925
0.0000	2060.5371	41.0849	0.0528	0.0000	1821.5656	-218.6394	-18.1015	0.0000	1803.3556	79.2811	4.8785	0.0000	1894.0317	991.7598	-0.4843
0.0000	2060.5493	42.7205	0.0529	0.0000	1815.2515	-200.1169	-19.4574	0.0000	1803.3829	83.3069	4.7468	0.0000	1894.3090	993.8699	-0.4688
0.0000	2060.5339	65.4439	0.0534	0.0000	1810.2947	-181.1815	-20.7131	0.0000	1803.3972	84.9144	4.6970	0.0000	1894.6725	996.6307	-0.4477
0.0000	2060.1995	169.7828	0.0563	0.0000	1806.6912	-161.9373	-21.5943	0.0000	1803.3796	86.5858	4.6148	0.0000	1895.0372	999.3935	-0.4324
0.0000	2060.1035	179.5263	0.0561	0.0000	1804.4360	-142.4834	-22.1505	0.0000	1803.3555	89.2608	4.4895	0.0000	1895.4030	1002.1583	-0.4294
0.0000	2056.6553	328.4142	0.0463	0.0000	1803.8460	-134.2776	-22.5893	0.0000	1803.3414	91.4423	4.3949	0.0000	1897.9376	1021.3991	-0.4488
0.0000	2056.0391	346.6592	0.0446	0.0000	1803.4736	-126.0667	-22.6061	0.0000	1803.3330	93.2200	4.3226	0.0000	1900.4699	1040.6404	-0.6055
0.0000	2054.9475	373.6833	0.0415	0.0000	1803.4080	-117.8543	-22.5846	0.0000	1803.3318	93.9366	4.2950	0.0000	1903.0037	1059.8820	-0.8028
0.0000	2047.4747	504.2132	0.0263	0.0000	1803.3579	-111.5862	-22.5693	0.0000	1803.3300	95.1660	4.2478	0.0000	1905.5346	1079.1235	-0.9494
0.0000	2041.6825	583.6108	0.0173	0.0000	1803.3330	-107.9270	-22.6704	0.0000	1803.3274	97.2784	4.1699	0.0000	1908.0698	1098.3650	-1.0529
0.0000	2034.4247	680.4159	0.0050	0.0000	1803.3269	-105.7880	-22.7707	0.0000	1803.3254	100.0572	4.0708	0.0000	1910.5977	1117.6000	-1.1019
0.0000	2030.7827	718.6108	0.0003	0.0000	1803.3186	-104.6634	-22.7980	0.0000	1803.3245	102.8497	3.9696	0.0000	1911.0486	1120.9583	-1.1183
0.0000	2020.5499	820.3343	-0.0122	0.0000	1803.3104	-103.1187	-22.8071	0.0000	1803.3251	105.6490	3.9107	0.0000	1912.3934	1131.3853	-1.2041
0.0000	2019.9292	826.1396	-0.0128	0.0000	1803.3048	-101.0018	-22.8248	0.0000	1803.3251	138.9619	2.8063	0.0000	1914.0366	1143.6299	-1.2813
0.0000	2008.6627	932.2172	-0.0254	0.0000	1803.3082	-98.1223	-22.8758	0.0000	1803.3251	172.2131	1.6798	0.0000	1914.3317	1145.9099	-1.2922
0.0000	2008.4243	934.4491	-0.0256	0.0000	1803.3339	-94.1988	-22.9956	0.0000	1803.3250	205.4150	0.3837	0.0000	1914.5627	1147.6327	-1.2989
0.0000	2008.1929	936.7828	-0.0259	0.0000	1803.3965	-89.4897	-23.2219	0.0000	1803.3251	238.5798	-1.0360	0.0000	1916.4185	1161.9262	-1.4334
0.0000	1999.7349	1015.6188	-0.0392	0.0000	1803.3903	-88.9123	-23.2421	0.0000	1803.7384	271.7154	-2.6636	0.0000	1917.3617	1169.0112	-1.4965
0.0000	1998.8401	1024.1401	-0.0397	0.0000	1803.3323	-81.8301	-23.5869	0.0000	1805.2454	304.8000	-4.0246	0.0000	1918.6948	1179.0377	-1.7346
0.0000	1996.6043	1045.7069	-0.0437	0.0000	1803.3954	-72.8501	-24.5063	0.0000	1806.0295	315.3404	-4.0649	0.0000	1919.2554	1183.3691	-1.8241
0.0000	1995.2647	1058.1488	-0.0463	0.0000	1803.3938	-72.5137	-24.5469	0.0000	1806.8751	325.8691	-3.9085	0.0000	1920.5629	1191.1416	-2.2444
0.0000	1994.5819	1064.7006	-0.0479	0.0000	1803.3572	-63.5020	-26.4689	0.0000	1808.0900	336.3636	-3.7832	0.0000	1921.3572	1196.0618	-2.5493
0.0000	1993.0742	1078.6649	-0.0503	0.0000	1803.3762	-59.6023	-28.0274	0.0000	1809.3048	346.8582	-3.7185	0.0000	1923.2556	1199.9158	-2.8981
0.0000	1991.3388	1095.1198	-0.0543	0.0000	1803.3623	-54.6768	-30.6015	0.0000	1810.5198	357.3529	-3.7054	0.0000	1926.6409	1207.1160	-3.4871
0.0000	1991.0448	1097.8734	-0.0546	0.0000	1803.3807	-48.3192	-35.9856	0.0000	1811.8770	367.8299	-3.7332	0.0000	1930.7051	1210.5762	-2.8359
0.0000	1989.0073	1116.5457	-0.0619	0.0000	1803.3778	-45.8584	-38.4251	0.0000	1813.0533	376.7690	-3.7661	0.0000	1937.4042	1215.9706	-1.5442
0.0000	1987.7920	1128.1035	-0.0649	0.0000	1803.3875	-38.2737	-45.9684	0.0000	1814.2325	385.6861	-3.8076	0.0000	1947.0706	1218.3060	-0.6531
0.0000	1985.8817	1146.0759	-0.0812	0.0000	1803.3877	-36.8971	-46.9591	0.0000	1815.4157	394.5847	-3.8476	0.0000	1950.7037	1219.2000	-0.4492
0.0000	1984.8213	1155.7235	-0.0862	0.0000	1803.3876	-29.1072	-49.4469	0.0000	1815.6840	396.5982	-3.8543				
0.0000	1983.8423	1165.2311	-0.1006	0.0000	1803.3893	-27.6346	-49.8249	0.0000	1816.3052	401.3768	-3.8706				
0.0000	1981.8342	1183.6901	-0.1725	0.0000	1803.3827	-20.6943	-51.7344	0.0000	1816.8218	405.3437	-3.8743				
0.0000	1980.5393	1193.4691	-0.2123	0.0000	1803.3879	-17.9780	-53.4857	0.0000	1817.1243	407.6620	-3.8697				
0.0000	1970.4065	1208.9966	-0.3392	0.0000	1803.3792	-13.0328	-56.9980	0.0000	1817.4766	410.2698	-3.8662				
0.0000	1967.4994	1213.9338	-0.3984	0.0000	1803.3795	-11.6377	-57.9750	0.0000	1817.7986	412.6467	-3.8668				
0.0000	1964.9912	1214.7864	-0.3781	0.0000	1803.3792	-9.7833	-57.9664	0.0000	1817.9590	413.8933	-3.8632				
0.0000	1950.7037	1219.2000	-0.4492	0.0000	1803.3789	-7.3126	-55.7237	0.0000	1818.6029	418.8692	-3.8512				
				0.0000	1803.3788	-4.0013	-47.8323	0.0000	1819.5193	425.8512	-3.8333				
				0.0000	1803.3793	-0.5922	-35.7085	0.0000	1820.8106	435.5390	-3.8130				
				0.0000	1803.3801	2.1168	-23.3297	0.0000	1821.0319	437.2025	-3.8106				
				0.0000	1803.3806	4.3251	-12.4777	0.0000	1822.5778	449.0515	-3.7838				

120 degrees OUTER SURFACE				120 degrees INNER SURFACE				INNER SURFACE							
X4	Y4	Z4	Pressure	X4	Y4	Z4	Pressure	X4	Y4	Z4	Pressure	X4	Y4	Z4	Pressure
[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]
-999.5563	1730.9391	-355.6000	-13.0844	-999.5563	1730.9391	-355.6000	-13.0844	-901.7095	1561.4970	54.7507	-5.5996	-937.9131	1624.1912	852.6491	-0.7006
-1010.9824	1750.7257	-346.7889	-7.0144	-994.2790	1721.8002	-354.9531	-14.0069	-901.7219	1561.5186	61.9958	-5.9375	-939.6675	1627.2291	879.2934	-0.6661
-1011.5900	1751.7778	-346.2335	-6.7020	-989.5518	1713.6140	-354.3196	-14.5233	-901.7620	1561.5877	68.3279	-6.2207	-941.4271	1630.2764	905.8998	-0.6330
-1021.2203	1768.4547	-321.5930	-2.9537	-982.2842	1701.0287	-351.1300	-13.5127	-901.8062	1561.6644	73.9608	-6.4640	-942.8509	1632.7419	927.3748	-0.6070
-1021.6429	1769.1867	-320.0968	-2.8297	-975.9237	1690.0143	-348.4564	-12.4597	-901.8329	1561.7107	77.5945	-6.6215	-944.0005	1634.7327	944.7266	-0.5867
-1027.9177	1780.0527	-284.8228	-1.1606	-972.7935	1684.5936	-346.3170	-12.6908	-901.8229	1561.6935	78.9516	-6.6853	-944.9319	1636.3455	958.7518	-0.5706
-1028.0333	1780.2528	-283.8951	-1.1288	-965.2167	1671.4728	-340.3659	-13.4550	-901.7987	1561.6515	83.3245	-6.8929	-945.6841	1637.6482	970.0901	-0.5575
-1028.2777	1780.6762	-279.4348	-1.0477	-964.5551	1670.3272	-339.7374	-13.5215	-901.7844	1561.6265	87.1083	-7.0742	-946.2892	1638.6959	979.2556	-0.5469
-1030.2382	1784.0710	-246.0452	-0.4116	-957.0261	1657.2893	-331.9130	-14.3680	-901.7757	1561.6117	90.3439	-7.2294	-946.7769	1639.5405	986.6638	-0.5387
-1030.3901	1784.3342	-240.7959	-0.3413	-949.3999	1644.0828	-321.5729	-15.0100	-901.7704	1561.6027	93.0818	-7.3637	-947.1693	1640.2201	992.6336	-0.5324
-1030.4146	1784.3763	-227.1087	-0.2701	-944.9281	1636.3389	-315.1028	-15.3499	-901.7690	1561.6002	93.9269	-7.4073	-947.2068	1640.2852	993.2101	-0.5324
-1030.3673	1784.2947	-198.1223	-0.1145	-935.3550	1619.7611	-297.1233	-16.1996	-901.7669	1561.5962	95.3944	-7.4659	-947.2713	1640.3967	994.1960	-0.5315
-1030.3943	1784.3412	-181.8134	-0.0829	-933.9957	1617.4072	-294.4363	-16.3104	-901.7639	1561.5912	97.9611	-7.5402	-947.3816	1640.5877	995.8824	-0.5293
-1030.2164	1784.0335	-149.1469	-0.0197	-932.0554	1614.0471	-289.5365	-16.3801	-901.7609	1561.5861	101.4033	-7.6702	-947.5258	1640.8374	998.0886	-0.5265
-1030.4356	1784.4127	-71.3134	0.0347	-924.8822	1601.6255	-271.7661	-16.5742	-901.7588	1561.5823	104.9102	-7.9834	-947.6700	1641.0873	1000.2958	-0.5238
-1030.4242	1784.3933	-68.0447	0.0370	-921.7363	1596.1776	-261.8204	-16.5685	-901.7570	1561.5794	108.4465	-8.2595	-947.8143	1641.3370	1002.5032	-0.5205
-1030.4248	1784.3943	-66.6705	0.0373	-919.2938	1591.9479	-254.0000	-16.5540	-901.7580	1561.5809	141.8614	-8.1055	-949.0728	1643.5162	1021.6696	-0.4942
-1030.4399	1784.4204	42.1503	0.0502	-916.2907	1586.7473	-243.3026	-16.8383	-901.7571	1561.5796	174.9038	-6.9428	-950.3331	1645.6989	1040.8451	-0.4701
-1030.4399	1784.4204	42.2281	0.0502	-913.6960	1582.2540	-232.2817	-16.3532	-901.7551	1561.5759	207.6484	-5.3996	-951.5960	1647.8857	1060.0270	-0.4444
-1030.4404	1784.4215	42.8041	0.0502	-911.3066	1578.1165	-221.0633	-15.9289	-901.7521	1561.5707	240.1705	-4.0260	-952.8595	1650.0739	1079.2142	-0.4152
-1030.3575	1784.2778	136.5032	0.0471	-909.1678	1574.4125	-209.6112	-15.6155	-901.9647	1561.9390	272.5406	-2.9240	-954.1262	1652.2672	1098.4043	-0.3830
-1030.2607	1784.1101	147.9727	0.0466	-907.3685	1571.2965	-197.8958	-15.1423	-902.7050	1563.2208	304.8000	-1.8895	-955.4309	1654.5267	1117.6000	-0.3490
-1029.7140	1783.1635	239.9445	0.0355	-905.7514	1568.4965	-186.0296	-14.4307	-903.1272	1563.9520	314.4498	-1.8755	-956.3700	1656.1530	1131.5942	-0.3117
-1029.4459	1782.6990	265.7238	0.0321	-904.9106	1567.0404	-178.3885	-13.9972	-903.1392	1563.9725	314.7965	-1.8746	-956.3838	1656.1768	1131.8080	-0.3111
-1027.1924	1778.7966	357.9503	0.0187	-904.1061	1565.6472	-170.7531	-13.5324	-903.5121	1564.6187	324.7873	-1.8466	-956.4016	1656.2076	1132.0746	-0.3105
-1025.3577	1775.6194	451.3914	0.0048	-903.5087	1564.6127	-163.1117	-13.0139	-904.0823	1565.6061	334.7433	-1.8214	-957.4121	1657.9575	1147.6897	-0.2798
-1023.2878	1772.0349	521.7039	-0.0059	-903.0913	1563.8900	-157.3329	-12.5202	-904.6528	1566.5939	344.7011	-1.7930	-958.0779	1659.1106	1157.6244	-0.2620
-1021.4051	1768.7749	586.1164	-0.0159	-902.8513	1563.4742	-153.9943	-12.2977	-905.2234	1567.5819	354.6609	-1.7677	-958.4959	1659.8345	1163.9730	-0.2506
-1019.9197	1766.2024	623.8671	-0.0220	-902.7295	1563.2633	-152.0546	-12.2317	-905.8396	1568.6491	364.6081	-1.7438	-959.2396	1661.1224	1175.4557	-0.2321
-1016.1732	1759.7147	708.1999	-0.0352	-902.5578	1562.9659	-149.3709	-12.1473	-906.3094	1569.4627	371.7921	-1.7246	-960.1033	1662.6178	1188.2338	-0.2184
-1015.3759	1758.3339	724.3370	-0.0377	-902.4368	1562.7565	-145.9046	-11.8952	-906.7784	1570.2748	378.9680	-1.7038	-960.8124	1663.8461	1194.3829	-0.2101
-1010.3049	1749.5524	823.2653	-0.0527	-902.2811	1562.4869	-141.3804	-11.3690	-907.2457	1571.0842	386.1260	-1.6833	-962.5309	1666.8219	1204.4962	-0.2032
-1010.2207	1749.4066	824.8322	-0.0529	-902.0814	1562.1411	-135.4562	-10.7856	-907.6015	1571.7003	391.5815	-1.6680	-968.5104	1677.1765	1215.6555	-0.1516
-1010.2099	1749.3878	825.0483	-0.0530	-901.8856	1561.8020	-127.7293	-10.2329	-907.8088	1572.0593	394.7625	-1.6591	-968.5306	1677.2114	1215.6953	-0.1515
-1004.5114	1739.5197	931.6278	-0.0723	-901.8911	1561.8114	-121.6217	-9.7353	-907.9297	1572.2687	396.6204	-1.6538	-968.5527	1677.2500	1215.7065	-0.1518
-1004.3778	1739.2885	933.9411	-0.0727	-901.8547	1561.7485	-117.7217	-9.4198	-908.1429	1572.6377	399.9070	-1.6448	-975.4867	1689.2575	1219.2000	-0.2354
-1004.2730	1739.1069	936.1654	-0.0732	-901.7433	1561.5555	-104.8882	-8.4366	-908.4317	1573.1378	404.3619	-1.6326				
-999.8772	1731.4946	1018.7007	-0.0944	-901.7032	1561.4861	-88.6721	-7.5524	-908.8226	1573.8148	410.3887	-1.6163				
-999.7732	1731.3146	1020.7043	-0.0951	-901.7650	1561.5930	-73.7041	-6.9560	-909.3522	1574.7318	418.5423	-1.5943				
-999.4922	1730.8281	1026.1503	-0.0970	-901.8170	1561.6831	-67.7519	-6.7693	-910.0690	1575.9733	429.5483	-1.5648				
-997.5723	1727.5033	1061.7957	-0.1095	-901.7493	1561.5659	-59.8967	-6.5182	-911.0402	1577.6549	444.3950	-1.5257				
-996.7053	1726.0020	1078.3228	-0.1167	-901.7082	1561.4948	-47.2344	-6.1693	-912.3644	1579.9480	464.4296	-1.4742				
-996.1981	1725.1238	1087.7733	-0.1209	-901.8157	1561.6807	-35.6441	-5.8944	-914.1919	1583.1128	491.5834	-1.4061				
-995.4209	1723.7778	1102.5624	-0.1286	-901.8271	1561.7006	-34.5893	-5.8734	-915.3308	1585.0851	508.3296	-1.3639				
-994.9462	1722.9559	1111.2849	-0.1331	-901.7192	1561.5138	-24.5461	-5.6644	-916.0040	1586.2510	518.8944	-1.3378				
-994.6530	1722.4479	1116.9019	-0.1369	-901.7311	1561.5344	-13.1115	-5.4761	-917.7859	1589.3367	546.6002	-1.2691				
-993.6660	1720.7385	1134.8627	-0.1497	-901.8234	1561.6943	-2.9395	-5.3437	-919.6274	1592.5255	574.8212	-1.2014				
-992.4316	1718.6012	1158.6489	-0.1732	-901.8234	1561.6942	-2.9394	-5.3437	-921.5154	1595.7950	603.4965	-1.1354				
-992.2188	1718.2327	1162.5293	-0.1770	-901.8010	1561.6554	-0.4176	-5.3130	-923.4270	1599.1054	632.4951	-1.0722				
-992.1122	1718.0481	1164.5895	-0.1790	-901.7390	1561.5480	7.3596	-5.2175	-925.3569	1602.4474	661.7001	-1.0121				
-989.3665	1713.2931	1199.9458	-0.3294	-901.7117	1561.5007	15.5306	-5.1123	-927.2901	1605.7952	691.0090	-0.9549				
-989.2600	1713.1088	1201.2535	-0.3366	-901.7179	1561.5117	23.8608	-5.0272	-929.0756	1608.8870	718.0915	-0.9049				
-988.9626	1712.5938	1202.0877	-0.3416	-901.7595	1561.5835	32.1269	-5.0139	-930.8580	1611.9738	745.1421	-0.8585				
-987.61505	1710.2603	1203.5356	-0.32643	-901.8320	1561.7090	39.4639	-5.0588	-932.6317	1615.0452	772.1424	-0.8152				
-975.48669	1689.2575	1219.2000	-0.23545	-901.8255	1561.6979	40.1189	-5.0663	-934.3973	1618.1027	799.0724	-0.7748				
				-901.7456	1561.5595	47.6407	-5.2867	-936.1586	1621.1528	825.9142	-0.7368				

150 degrees OUTER SURFACE				150 degrees INNER SURFACE								INNER SURFACE			
X5	Y5	Z5	Pressure	X5	Y5	Z5	Pressure	X5	Y5	Z5	Pressure	X5	Y5	Z5	Pressure
[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]
-1730.9585	999.5676	-355.6000	-3.1759	-1730.9585	999.5676	-355.6000	-3.1759	-1561.6952	901.8240	2.0228	-21.4216	-1585.0105	915.2877	508.4255	-0.7467
-1737.9110	1003.5825	-352.6393	-2.6344	-1727.8279	997.7598	-355.3416	-3.3005	-1561.6957	901.8242	4.2316	-12.6620	-1587.9265	916.9716	534.1342	-0.7042
-1750.5306	1010.8698	-347.3810	-1.5917	-1712.3516	988.8228	-354.0694	-3.8025	-1561.6919	901.8220	6.1663	-7.5130	-1590.8951	918.6859	560.0994	-0.6589
-1753.8467	1012.7847	-343.7629	-1.3934	-1694.3826	978.4463	-349.7434	-4.0096	-1561.6987	901.8261	8.9072	-4.8727	-1593.9149	920.4297	586.3629	-0.6106
-1764.0504	1018.6771	-329.8531	-0.8461	-1693.3605	977.8560	-349.4993	-4.0205	-1561.7056	901.8299	14.0499	0.0255	-1596.9664	922.1918	612.8082	-0.5610
-1766.7282	1020.2233	-325.3687	-0.7026	-1692.4622	977.3373	-349.1452	-4.0638	-1561.7028	901.8284	15.9148	0.6796	-1599.9628	923.9221	638.7842	-0.5144
-1772.0791	1023.3133	-309.9512	-0.5547	-1675.0607	967.2885	-342.3165	-4.9138	-1561.7087	901.8318	23.1062	3.2098	-1600.0333	923.9629	639.4138	-0.5131
-1777.8717	1026.6582	-293.6329	-0.3887	-1659.8438	958.5012	-333.4211	-5.8908	-1561.7095	901.8323	23.6892	3.4097	-1603.0459	925.7025	666.1531	-0.4622
-1779.3969	1027.5391	-286.4093	-0.3528	-1657.9661	957.4170	-332.3310	-6.0124	-1561.6935	901.8230	30.4599	4.0513	-1606.3040	927.5839	695.0346	-0.4128
-1784.0276	1030.2131	-245.2481	-0.2473	-1655.9775	956.2687	-330.8145	-6.1365	-1561.7051	901.8297	35.4415	4.5416	-1609.5794	929.4755	723.9295	-0.3719
-1784.3364	1030.3914	-234.9126	-0.2326	-1641.9277	948.1554	-320.1764	-6.9999	-1561.6968	901.8248	37.9446	4.5716	-1612.8626	931.3713	752.8203	-0.3401
-1784.2961	1030.3682	-196.7654	-0.2034	-1630.2545	941.4146	-308.8410	-7.8881	-1561.6912	901.8217	45.4913	4.6364	-1616.1464	933.2676	781.6917	-0.3193
-1784.2343	1030.3325	-178.1952	-0.1934	-1627.2196	939.6620	-305.9171	-8.1250	-1561.7042	901.8292	49.4114	4.6726	-1619.4359	935.1671	810.5255	-0.3085
-1783.8693	1030.1217	-137.8490	-0.1788	-1624.3668	938.0146	-302.4420	-8.3247	-1561.6879	901.8198	53.0592	4.5982	-1622.7289	937.0687	839.3057	-0.3053
-1784.1190	1030.2659	-84.3242	-0.1662	-1613.6967	931.8530	-289.5522	-9.0343	-1561.6827	901.8168	60.6281	4.4608	-1626.0245	938.9719	868.0491	-0.3170
-1784.1169	1030.2648	-46.6043	-0.1544	-1602.9177	925.6285	-273.4145	-9.6859	-1561.7050	901.8295	65.5946	4.3866	-1629.3259	940.8783	896.7725	-0.3400
-1784.2067	1030.3165	27.1250	-0.1417	-1600.6918	924.3431	-270.1312	-9.8282	-1561.6897	901.8207	68.1989	4.3041	-1631.9919	942.4178	919.9531	-0.3647
-1784.2135	1030.3204	51.0416	-0.1365	-1599.5647	923.6923	-268.0573	-9.8910	-1561.6660	901.8072	74.3196	4.1184	-1634.1419	943.6594	938.6733	-0.3917
-1784.1349	1030.2750	160.3327	-0.1279	-1591.9658	919.3042	-254.0000	-10.1671	-1561.6747	901.8121	79.2801	3.9938	-1635.7485	944.5873	952.6632	-0.4180
-1783.9893	1030.1909	175.1556	-0.1261	-1584.0839	914.7526	-236.6385	-10.9026	-1561.6990	901.8261	83.3060	3.9042	-1635.8767	944.6611	953.7949	-0.4202
-1783.7056	1030.0271	196.0778	-0.1255	-1577.4421	910.9172	-218.6355	-11.8378	-1561.7105	901.8328	84.8010	3.8707	-1637.2648	945.4627	966.0097	-0.4468
-1780.1204	1027.9568	338.8274	-0.1264	-1571.9741	907.7597	-200.1110	-12.8542	-1561.6941	901.8233	86.5851	3.8079	-1638.3860	946.1102	975.8765	-0.4700
-1773.1387	1023.9252	521.4812	-0.1448	-1567.6816	905.2809	-181.1735	-13.6320	-1561.6735	901.8115	89.2604	3.7154	-1639.2914	946.6329	983.8454	-0.4916
-1773.1277	1023.9188	521.7250	-0.1449	-1564.5612	903.4789	-161.9272	-14.1190	-1561.6614	901.8044	91.4421	3.6437	-1640.0226	947.0553	990.2471	-0.5110
-1773.1196	1023.9142	521.8618	-0.1449	-1562.6090	902.3516	-142.4712	-14.3682	-1561.6544	901.8004	93.2200	3.5883	-1640.1018	947.1011	990.9636	-0.5136
-1772.9769	1023.8317	523.9285	-0.1453	-1562.0977	902.0564	-134.2654	-14.6765	-1561.6533	901.7998	93.9366	3.5674	-1640.2369	947.1790	992.1835	-0.5173
-1761.0333	1016.9346	693.0848	-0.1806	-1561.7759	901.8706	-126.0543	-14.5857	-1561.6520	901.7989	95.1660	3.5318	-1640.4680	947.3125	994.2702	-0.5231
-1759.9888	1016.3317	705.3793	-0.1828	-1561.7189	901.8377	-117.8418	-14.3662	-1561.6498	901.7977	97.2786	3.4723	-1640.7720	947.4880	997.0009	-0.5303
-1750.0212	1010.5757	814.7572	-0.2083	-1561.6758	901.8127	-111.5736	-14.1892	-1561.6480	901.7967	100.0575	3.3964	-1641.0763	947.6638	999.7336	-0.5372
-1747.8546	1009.3245	839.5737	-0.2129	-1561.6538	901.8000	-107.9143	-14.2028	-1561.6476	901.7964	102.8501	3.3199	-1641.3812	947.8398	1002.4684	-0.5450
-1741.2095	1005.4870	910.6636	-0.2318	-1561.6489	901.7971	-105.7753	-14.2341	-1561.6482	901.7968	105.6497	3.2878	-1643.5720	949.1049	1021.6498	-0.6078
-1738.9801	1004.1997	935.7054	-0.2376	-1561.6417	901.7931	-104.6511	-14.2309	-1561.6480	901.7967	138.9626	2.5770	-1645.7600	950.3683	1040.8364	-0.6762
-1734.1692	1001.4216	989.7726	-0.2529	-1561.6348	901.7890	-103.1068	-14.1994	-1561.6480	901.7967	172.2137	1.8014	-1647.9476	951.6316	1060.0255	-0.7576
-1733.3340	1000.9393	998.5383	-0.2556	-1561.6303	901.7864	-100.9906	-14.1599	-1561.6480	901.7967	205.4155	0.8792	-1650.1328	952.8936	1079.2166	-0.8574
-1732.9775	1000.7335	1002.6122	-0.2568	-1561.6335	901.7883	-98.1119	-14.1316	-1561.6480	901.7967	238.5802	-0.1317	-1652.3210	954.1572	1098.4081	-0.9847
-1728.4674	998.1290	1051.4049	-0.2702	-1561.6563	901.8015	-94.1895	-14.1354	-1562.0059	902.0034	271.7156	-1.1203	-1654.5453	955.4416	1117.6000	-1.1503
-1728.0526	997.8894	1056.0310	-0.2718	-1561.7094	901.8322	-89.5687	-14.1901	-1563.3109	902.7570	304.8000	-1.6155	-1654.9113	955.6530	1120.7487	-1.1589
-1725.5693	996.4554	1083.1926	-0.2807	-1561.7033	901.8286	-88.9044	-14.1869	-1563.9482	903.1251	315.2435	-1.4709	-1656.1327	956.3583	1131.6815	-1.2272
-1724.6289	995.9124	1093.2893	-0.2840	-1561.6539	901.8001	-81.8238	-14.2131	-1564.6660	903.5395	325.6793	-1.3697	-1657.7981	957.3201	1146.0491	-1.4466
-1724.4454	995.8065	1095.2798	-0.2848	-1561.7083	901.8315	-72.9244	-14.5501	-1565.7074	904.1408	336.0799	-1.2875	-1658.0595	957.4710	1148.3826	-1.4821
-1721.0143	993.8250	1132.5316	-0.2969	-1561.7067	901.8306	-72.5094	-14.5641	-1566.7484	904.7421	346.4802	-1.2183	-1658.1827	957.5421	1149.4451	-1.5034
-1720.9358	993.7797	1133.3809	-0.2972	-1561.6762	901.8130	-63.4993	-15.1244	-1567.7897	905.3432	356.8799	-1.1574	-1658.6152	957.7919	1153.2025	-1.6022
-1720.7225	993.6567	1135.7280	-0.2983	-1561.6925	901.8223	-59.6756	-15.6290	-1568.9463	906.0111	367.2628	-1.1028	-1660.1818	958.6966	1167.1211	-1.9604
-1718.5548	992.4049	1159.0040	-0.3080	-1561.6799	901.8152	-54.6754	-16.5806	-1569.6375	906.4104	373.4574	-1.0736	-1661.0797	959.2150	1174.8545	-2.3307
-1716.9605	991.4843	1176.4783	-0.3188	-1561.6957	901.8242	-48.3942	-18.7325	-1570.3366	906.8140	379.6594	-1.0465	-1661.9867	959.7386	1182.9375	-2.7605
-1716.5690	991.2582	1180.6647	-0.3216	-1561.6932	901.8229	-45.8579	-19.9257	-1571.0433	907.2222	385.8661	-1.0211	-1663.1096	960.3872	1190.6863	-3.8091
-1716.4213	991.1727	1182.1388	-0.3246	-1561.7015	901.8276	-38.3521	-24.9772	-1571.5891	907.5374	390.6137	-1.0027	-1663.8342	960.8057	1195.9244	-4.5379
-1712.1788	988.7230	1195.1836	-0.2865	-1561.7018	901.8278	-36.8972	-25.9766	-1571.9102	907.7227	393.3898	-0.9921	-1666.2950	962.2267	1201.7412	-5.7779
-1707.8219	986.2070	1209.7656	-0.2515	-1561.7018	901.8278	-29.1905	-31.2127	-1572.0988	907.8317	395.0145	-0.9860	-1668.5110	963.5063	1207.2247	-6.9533
-1707.1399	985.8132	1211.1361	-0.2475	-1561.7034	901.8287	-27.6351	-31.8676	-1572.3412	907.9717	397.1815	-0.9780	-1671.0563	964.9761	1209.7155	-6.3026
-1705.6345	984.9438	1211.8125	-0.3152	-1561.6975	901.8253	-20.7834	-33.3723	-1572.7793	908.2245	401.0392	-0.9648	-1677.7365	968.8337	1215.9607	-4.0227
-1689.2765	975.4977	1219.2000	-1.0730	-1561.7024	901.8281	-17.9788	-33.7905	-1573.4144	908.5914	406.6117	-0.9473	-1686.6095	973.9576	1218.4425	-1.7769
				-1561.6948	901.8237	-13.1285	-34.2715	-1574.2937	909.0992	414.3058	-0.9255	-1689.2765	975.4977	1219.2000	-1.0730
				-1561.6951	901.8239	-11.7332	-35.2554	-1575.4851	909.7870	424.7013	-0.8993				
				-1561.6945	901.8236	-9.8786	-36.4085	-1577.0924	910.7153	438.6848	-0.8685				
				-1561.6943	901.8234	-7.4077	-36.9337	-1579.2677	911.9714	457.4900	-0.8322				
				-1561.6942	901.8234	-4.0962	-36.1641	-1580.4507	912.6546	467.6678	-0.8145				
				-1561.6947	901.8236	-0.6866	-30.2174	-1582.1481	913.6347	482.9141	-0.7883				

180 degrees OUTER SURFACE				180 degrees INNER SURFACE											
X6	Y6	Z6	Pressure	X6	Y6	Z6	Pressure	X6	Y6	Z6	Pressure	X6	Y6	Z6	Pressure
[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]
-1998.8242	0.0000	-355.6000	-1.7362	-1998.8242	0.0000	-355.6000	-1.7362	-1803.3804	0.0000	40.1177	-3.6439	-1861.5872	0.0000	745.8867	-2.2428
-2017.5263	0.0000	-348.3711	-1.4892	-1986.6425	0.0000	-354.6867	-1.9639	-1803.2217	0.0000	47.6397	-3.5463	-1865.1357	0.0000	772.7404	-2.1881
-2023.1156	0.0000	-346.0141	-1.4025	-1976.6928	0.0000	-353.9521	-2.1229	-1803.1506	0.0000	54.7501	-3.4669	-1868.6856	0.0000	799.5117	-2.1099
-2030.4653	0.0000	-336.4477	-1.3697	-1969.1502	0.0000	-352.3650	-2.1754	-1803.1765	0.0000	61.9957	-3.4013	-1872.0598	0.0000	824.7979	-2.0172
-2041.5468	0.0000	-322.3956	-1.3152	-1954.8359	0.0000	-349.3492	-2.3277	-1803.2573	0.0000	68.3279	-3.3522	-1872.2404	0.0000	826.1871	-2.0123
-2043.6353	0.0000	-318.5962	-1.3192	-1941.6574	0.0000	-344.8350	-2.6905	-1803.3464	0.0000	73.9610	-3.3120	-1875.6791	0.0000	852.7402	-1.9078
-2054.2236	0.0000	-289.0628	-1.2830	-1935.0209	0.0000	-342.5776	-2.8861	-1803.3973	0.0000	77.4316	-3.2864	-1879.1089	0.0000	879.1906	-1.8096
-2056.8113	0.0000	-277.1719	-1.2592	-1927.7365	0.0000	-338.9698	-3.1718	-1803.3752	0.0000	78.9518	-3.2751	-1882.5452	0.0000	905.5905	-1.7328
-2059.6714	0.0000	-253.1401	-1.1586	-1916.7367	0.0000	-333.6445	-3.6376	-1803.3270	0.0000	83.3246	-3.2529	-1885.3281	0.0000	926.8862	-1.6872
-2060.4810	0.0000	-233.0599	-1.0897	-1910.2965	0.0000	-329.5364	-3.9037	-1803.2985	0.0000	87.1083	-3.2527	-1887.5792	0.0000	944.0848	-1.6592
-2060.5320	0.0000	-206.6863	-0.9950	-1895.9020	0.0000	-320.0852	-4.5224	-1803.2814	0.0000	90.3438	-3.2672	-1889.4080	0.0000	957.9813	-1.6401
-2060.4692	0.0000	-192.7135	-0.9572	-1881.4518	0.0000	-308.0522	-5.2590	-1803.2710	0.0000	93.0816	-3.2919	-1890.8894	0.0000	969.2131	-1.6248
-2060.5501	0.0000	-158.2352	-0.8666	-1877.7892	0.0000	-304.6236	-5.4537	-1803.2682	0.0000	93.9267	-3.3066	-1892.0845	0.0000	978.2915	-1.6121
-2060.4519	0.0000	-132.8587	-0.7950	-1865.1661	0.0000	-291.5896	-6.2128	-1803.2638	0.0000	95.3942	-3.3323	-1893.0498	0.0000	985.6296	-1.6012
-2060.4287	0.0000	-123.8479	-0.7668	-1853.0673	0.0000	-276.1502	-6.8897	-1803.2579	0.0000	97.9608	-3.3843	-1893.8225	0.0000	991.5026	-1.5924
-2060.5620	0.0000	-70.8279	-0.6380	-1848.6682	0.0000	-270.5698	-7.1420	-1803.2522	0.0000	101.4029	-3.4704	-1893.9056	0.0000	992.1368	-1.5891
-2060.4734	0.0000	-38.0469	-0.5580	-1845.7267	0.0000	-265.8575	-7.3001	-1803.2478	0.0000	104.9097	-3.5850	-1894.0481	0.0000	993.2218	-1.5859
-2060.4885	0.0000	-29.7315	-0.5442	-1838.3224	0.0000	-254.0000	-7.7072	-1803.2443	0.0000	108.4458	-3.8809	-1894.2922	0.0000	995.0775	-1.5825
-2059.9331	0.0000	57.8016	-0.3844	-1832.3103	0.0000	-243.3044	-8.2651	-1803.2462	0.0000	141.8607	-4.7363	-1894.6118	0.0000	997.5056	-1.5785
-2059.9890	0.0000	114.6456	-0.3000	-1827.1224	0.0000	-232.2853	-8.4295	-1803.2446	0.0000	174.9031	-4.7219	-1894.9320	0.0000	999.9351	-1.5732
-2059.6450	0.0000	188.2577	-0.1964	-1822.3449	0.0000	-221.0689	-8.6723	-1803.2404	0.0000	207.6479	-4.3599	-1895.2523	0.0000	1002.3653	-1.5689
-2057.7827	0.0000	280.3382	-0.1105	-1818.0684	0.0000	-209.6187	-8.9172	-1803.2344	0.0000	240.1702	-3.7006	-1897.7802	0.0000	1021.5615	-1.5586
-2055.4780	0.0000	340.2484	-0.0637	-1814.4703	0.0000	-197.9054	-8.9855	-1803.6599	0.0000	272.5403	-3.0224	-1900.3064	0.0000	1040.7632	-1.5481
-2052.9043	0.0000	405.3068	-0.0429	-1811.2362	0.0000	-186.0413	-8.9226	-1805.1400	0.0000	304.8000	-2.3010	-1902.8347	0.0000	1059.9689	-1.5367
-2046.3556	0.0000	524.9647	-0.0226	-1809.5553	0.0000	-178.4003	-8.8890	-1805.8613	0.0000	315.0139	-2.2358	-1905.3615	0.0000	1079.1780	-1.5258
-2038.0646	0.0000	639.1262	-0.0256	-1807.9462	0.0000	-170.7650	-8.8272	-1806.6544	0.0000	325.2199	-2.2475	-1907.8922	0.0000	1098.3884	-1.5141
-2035.0701	0.0000	674.5637	-0.0298	-1806.7513	0.0000	-163.1238	-8.7219	-1807.8322	0.0000	335.3912	-2.2500	-1910.4247	0.0000	1117.6003	-1.5003
-2033.0523	0.0000	697.6775	-0.0401	-1805.9170	0.0000	-157.3450	-8.5169	-1809.0103	0.0000	345.5637	-2.2391	-1911.5911	0.0000	1125.0875	-1.4821
-2022.8801	0.0000	798.4906	-0.0959	-1805.4371	0.0000	-154.0065	-8.4551	-1810.1886	0.0000	355.7373	-2.2287	-1912.4358	0.0000	1131.6323	-1.4841
-2021.8717	0.0000	807.0890	-0.1018	-1805.1934	0.0000	-152.0668	-8.4771	-1811.4791	0.0000	365.8963	-2.2169	-1913.2489	0.0000	1137.6951	-1.4831
-2021.1090	0.0000	814.8234	-0.1072	-1804.8495	0.0000	-149.3831	-8.5127	-1812.5136	0.0000	373.7821	-2.2040	-1914.4530	0.0000	1147.0151	-1.4828
-2009.7794	0.0000	919.6197	-0.2068	-1804.6077	0.0000	-145.9166	-8.4313	-1813.5466	0.0000	381.6542	-2.1901	-1916.3992	0.0000	1161.5447	-1.4943
-2008.0411	0.0000	934.6272	-0.2230	-1804.2965	0.0000	-141.3919	-8.0985	-1814.5776	0.0000	389.5083	-2.1774	-1916.5136	0.0000	1162.4236	-1.4949
-2006.9082	0.0000	946.9261	-0.2367	-1803.8972	0.0000	-135.4671	-7.7499	-1815.3645	0.0000	395.4982	-2.1683	-1916.5896	0.0000	1162.9922	-1.4955
-2002.0182	0.0000	994.8654	-0.3016	-1803.5054	0.0000	-127.7393	-7.5165	-1815.8237	0.0000	398.9934	-2.1631	-1918.3098	0.0000	1176.1124	-1.5031
-2001.2974	0.0000	1001.5503	-0.3107	-1803.5158	0.0000	-121.8585	-7.2441	-1816.0923	0.0000	401.0354	-2.1600	-1918.8230	0.0000	1179.9686	-1.5059
-2001.0809	0.0000	1003.5573	-0.3141	-1803.4391	0.0000	-117.7305	-7.0573	-1816.4915	0.0000	404.0506	-2.1551	-1919.5156	0.0000	1185.2512	-1.4991
-1995.9835	0.0000	1051.3057	-0.4131	-1803.2168	0.0000	-104.8957	-6.3877	-1817.0385	0.0000	408.1731	-2.1482	-1920.1802	0.0000	1190.4253	-1.4907
-1995.6511	0.0000	1054.3949	-0.4198	-1803.1384	0.0000	-88.6779	-5.8435	-1817.7859	0.0000	413.7796	-2.1385	-1923.4962	0.0000	1199.7639	-1.5326
-1995.1438	0.0000	1059.3550	-0.4344	-1803.2634	0.0000	-73.7085	-5.4814	-1818.8156	0.0000	421.4648	-2.1251	-1925.7084	0.0000	1206.0394	-1.5509
-1991.5682	0.0000	1092.4576	-0.5333	-1803.3658	0.0000	-67.8528	-5.3696	-1820.2302	0.0000	431.9436	-2.1076	-1930.5617	0.0000	1210.1687	-1.9377
-1989.5405	0.0000	1111.5154	-0.6085	-1803.2288	0.0000	-59.9000	-5.2169	-1822.1791	0.0000	446.2568	-2.0876	-1937.1401	0.0000	1215.8593	-2.4213
-1987.6263	0.0000	1129.2905	-0.6921	-1803.1487	0.0000	-47.2370	-4.9865	-1823.2540	0.0000	454.1210	-2.0799	-1944.0424	0.0000	1217.5658	-2.9552
-1984.8685	0.0000	1155.7329	-0.8763	-1803.3656	0.0000	-35.6463	-4.7851	-1824.7328	0.0000	465.8217	-2.0709	-1950.6920	0.0000	1219.2000	-3.4555
-1984.3522	0.0000	1160.5294	-0.9185	-1803.3867	0.0000	-34.6661	-4.7691	-1828.1870	0.0000	492.7126	-2.0614				
-1981.3527	0.0000	1188.7275	-1.5040	-1803.1696	0.0000	-24.5480	-4.5946	-1831.7701	0.0000	520.0364	-2.0625				
-1980.9976	0.0000	1191.3346	-1.5998	-1803.1953	0.0000	-13.1133	-4.4144	-1835.4657	0.0000	547.8369	-2.0889				
-1978.1022	0.0000	1196.3878	-2.0655	-1803.3782	0.0000	-3.0333	-4.2698	-1839.2443	0.0000	576.0783	-2.1338				
-1969.9651	0.0000	1212.1179	-3.4241	-1803.3315	0.0000	-0.4188	-4.2300	-1843.0872	0.0000	604.7526	-2.1821				
-1958.9775	0.0000	1216.1951	-3.4589	-1803.2085	0.0000	7.3584	-4.0880	-1843.6177	0.0000	608.7342	-2.1881				
-1950.6920	0.0000	1219.2000	-3.4555	-1803.1550	0.0000	15.5293	-3.9695	-1846.8582	0.0000	633.7006	-2.2255				
				-1803.1683	0.0000	23.8594	-3.8568	-1850.6637	0.0000	662.8136	-2.2550				
				-1803.2524	0.0000	32.1256	-3.7467	-1854.4917	0.0000	692.0168	-2.2744				
				-1803.3953	0.0000	39.3589	-3.6544	-1858.0358	0.0000	718.9730	-2.2713				

210 degrees		OUTER SURFACE		210 degrees		INNER SURFACE		INNER SURFACE							
X7	Y7	Z7	Pressure	X7	Y7	Z7	Pressure	X7	Y7	Z7	Pressure	X7	Y7	Z7	Pressure
[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]
-1730.9409	-999.5574	-355.6000	-10.3546	-1730.9409	-999.5574	-355.6000	-10.3546	-1561.6957	-901.8242	2.2107	-21.2478	-1585.5804	-915.6168	513.1625	0.1740
-1746.1117	-1008.3181	-347.3605	-7.1443	-1718.5230	-992.3865	-354.5614	-10.3921	-1561.6965	-901.8247	4.4186	-10.9913	-1587.7462	-916.8675	531.6365	0.1985
-1756.9673	-1014.5867	-340.6531	-4.9940	-1712.2236	-988.7489	-354.0396	-10.2668	-1561.6925	-901.8223	6.3520	-5.0932	-1588.6594	-917.3948	539.8735	0.2106
-1773.4645	-1024.1133	-309.0380	-2.7951	-1706.0697	-985.1951	-352.5574	-9.8100	-1561.6989	-901.8261	8.9102	-2.4710	-1591.6858	-919.1425	566.9948	0.2311
-1773.9971	-1024.4208	-308.0616	-2.7240	-1693.6541	-978.0256	-349.6062	-8.6978	-1561.7059	-901.8302	14.2446	2.7166	-1594.7904	-920.9353	594.5046	0.2369
-1774.1051	-1024.4832	-307.7064	-2.7114	-1683.7752	-972.3208	-345.7333	-8.9272	-1561.7036	-901.8288	15.9176	3.2688	-1597.9406	-922.7543	622.2815	0.2355
-1782.9525	-1029.5923	-264.8121	-1.5201	-1675.1367	-967.3324	-342.3466	-9.1456	-1561.7078	-901.8311	23.1087	5.5252	-1601.1221	-924.5916	650.2516	0.2196
-1783.0151	-1029.6284	-264.1900	-1.5088	-1666.0090	-962.0615	-336.9926	-9.5913	-1561.7087	-901.8318	23.8960	5.7671	-1604.3274	-926.4425	678.3403	0.1919
-1784.4157	-1030.4371	-222.0508	-1.0085	-1657.5521	-957.1780	-332.0707	-10.0122	-1561.6934	-901.8229	30.4621	6.1335	-1607.5205	-928.2865	706.3781	0.1552
-1784.4170	-1030.4379	-221.2406	-1.0030	-1650.2366	-952.9535	-326.4515	-10.3347	-1561.7054	-901.8298	35.6529	6.4204	-1610.7218	-930.1351	734.3923	0.1134
-1784.4216	-1030.4406	-206.5213	-0.9318	-1641.1550	-947.7092	-319.5372	-10.7074	-1561.6978	-901.8255	37.9465	6.3895	-1613.9108	-931.9767	762.3665	0.0670
-1784.4125	-1030.4353	-177.2541	-0.7889	-1632.6536	-942.7999	-311.2069	-11.1066	-1561.6906	-901.8214	45.4931	6.2939	-1617.0872	-933.8109	790.2834	0.0127
-1784.4091	-1030.4334	-175.5166	-0.7825	-1627.2009	-939.6513	-305.9043	-11.3758	-1561.7044	-901.8293	49.6242	6.2729	-1620.2581	-935.6418	818.1273	-0.0468
-1784.3748	-1030.4136	-122.0239	-0.6413	-1622.3461	-936.8477	-300.0209	-11.4658	-1561.6888	-901.8203	53.0610	6.1492	-1623.4180	-937.4667	845.8861	-0.1104
-1784.3510	-1030.3998	-115.1071	-0.6268	-1614.2727	-932.1855	-290.3130	-11.5752	-1561.6821	-901.8165	60.6301	5.8988	-1626.5757	-939.2901	873.5856	-0.1803
-1784.1619	-1030.2907	-50.9912	-0.5154	-1606.3197	-927.5930	-278.4833	-11.6306	-1561.7052	-901.8298	65.8068	5.7524	-1629.7391	-941.1169	901.2720	-0.2566
-1784.2548	-1030.3442	-15.7117	-0.4700	-1601.0038	-924.5232	-270.6982	-11.6768	-1561.6912	-901.8217	68.2011	5.6652	-1632.2976	-942.5944	923.6340	-0.3248
-1783.9070	-1030.1433	36.2188	-0.4016	-1597.7972	-922.6716	-264.8032	-11.6898	-1561.6663	-901.8073	74.3218	5.4466	-1634.3633	-943.7872	941.7094	-0.3865
-1784.1996	-1030.3124	80.2923	-0.3562	-1591.9034	-919.2682	-253.9987	-12.0645	-1561.6738	-901.8116	79.2821	5.2851	-1636.0366	-944.7535	956.3217	-0.4399
-1784.1417	-1030.2789	130.1467	-0.3126	-1584.0862	-914.7539	-236.6422	-12.3925	-1561.6973	-901.8252	83.3077	5.1627	-1637.3905	-945.5353	968.1338	-0.4824
-1783.6304	-1029.9836	183.8874	-0.2653	-1577.4454	-910.9192	-218.6432	-13.3752	-1561.7105	-901.8328	85.0278	5.1111	-1638.4810	-946.1650	977.6811	-0.5180
-1781.9486	-1029.0126	293.0096	-0.1983	-1571.9779	-907.7618	-200.1227	-14.5467	-1561.6960	-901.8245	86.5864	5.0516	-1639.3601	-946.6726	985.3958	-0.5503
-1780.9160	-1028.4163	329.6291	-0.1753	-1567.6854	-905.2831	-181.1894	-15.5642	-1561.6752	-901.8123	89.2612	4.9491	-1640.0662	-947.0805	991.6107	-0.5785
-1779.6250	-1027.6707	369.6261	-0.1599	-1564.5646	-903.4809	-161.9473	-16.3118	-1561.6625	-901.8051	91.4425	4.8680	-1640.1398	-947.1229	992.2491	-0.5828
-1774.7106	-1024.8328	479.1292	-0.1192	-1562.6112	-902.3529	-142.4955	-16.8974	-1561.6553	-901.8009	93.2200	4.8022	-1640.2650	-947.1953	993.3376	-0.5880
-1769.0179	-1021.5456	575.8860	-0.1011	-1562.1003	-902.0579	-134.2899	-17.2882	-1561.6541	-901.8002	93.9366	4.7774	-1640.4800	-947.3195	995.1998	-0.5947
-1765.6184	-1019.5824	627.6631	-0.0918	-1561.7772	-901.8713	-126.0791	-17.3151	-1561.6523	-901.7993	95.1659	4.7383	-1640.7612	-947.4819	997.6363	-0.6035
-1761.6099	-1017.2677	683.8793	-0.0871	-1561.7203	-901.8385	-117.8668	-17.2964	-1561.6500	-901.7979	97.2782	4.6718	-1641.0427	-947.6443	1000.0739	-0.6131
-1757.7484	-1015.0378	730.6894	-0.0842	-1561.6773	-901.8135	-111.5988	-17.2661	-1561.6482	-901.7968	100.0568	4.5832	-1641.3241	-947.8068	1002.5122	-0.6219
-1751.7428	-1011.5698	796.4044	-0.0827	-1561.6553	-901.8009	-107.9397	-17.3117	-1561.6475	-901.7964	102.8492	4.4953	-1643.5065	-949.0671	1021.6840	-0.7108
-1748.3770	-1009.6262	833.2690	-0.0835	-1561.6502	-901.7980	-105.8007	-17.3770	-1561.6478	-901.7966	105.6484	4.4153	-1645.6901	-950.3281	1040.8600	-0.8124
-1742.1752	-1006.0449	899.0171	-0.0850	-1561.6427	-901.7937	-104.6758	-17.3988	-1561.6478	-901.7966	138.9613	3.4913	-1647.8767	-951.5908	1060.0407	-0.9359
-1738.6820	-1004.0275	937.6669	-0.0885	-1561.6355	-901.7895	-103.1306	-17.4070	-1561.6477	-901.7966	172.2125	2.4409	-1650.0631	-952.8533	1079.2256	-1.0871
-1735.2238	-1002.0306	978.2368	-0.0932	-1561.6305	-901.7865	-101.0131	-17.4197	-1561.6477	-901.7966	205.4145	1.4308	-1652.2543	-954.1186	1098.4124	-1.2808
-1734.7332	-1001.7473	983.6110	-0.0940	-1561.6331	-901.7880	-98.1327	-17.4578	-1561.6480	-901.7966	238.5794	0.4548	-1654.5287	-955.4319	1117.6000	-1.5390
-1731.2061	-999.7106	1021.6281	-0.1001	-1561.6547	-901.8005	-94.2081	-17.5535	-1562.0059	-902.0032	271.7152	-0.6511	-1655.7710	-956.1494	1128.2905	-1.6431
-1730.3788	-999.2328	1030.6709	-0.1018	-1561.7100	-901.8325	-89.4107	-17.7526	-1563.3107	-902.7568	304.8000	-1.5538	-1656.1635	-956.3761	1131.8035	-1.6865
-1727.8544	-997.7750	1058.1388	-0.1070	-1561.7052	-901.8298	-88.9202	-17.7713	-1563.9432	-903.1221	315.0345	-1.5954	-1656.6561	-956.6606	1136.0535	-1.7723
-1727.3160	-997.4641	1064.1729	-0.1084	-1561.6541	-901.8002	-81.8363	-18.2041	-1564.6389	-903.5239	325.2596	-1.4695	-1657.9862	-957.4287	1147.9282	-2.0076
-1725.7231	-996.5444	1081.3444	-0.1123	-1561.7095	-901.8322	-72.7758	-19.5259	-1565.6666	-904.1172	335.4483	-1.2474	-1658.8124	-957.9058	1155.0326	-2.2290
-1724.9391	-996.0916	1089.4292	-0.1143	-1561.7085	-901.8316	-72.5179	-19.5790	-1566.6948	-904.7111	345.6363	-0.9712	-1659.7964	-958.4739	1163.6161	-2.5067
-1723.8575	-995.4670	1101.5530	-0.1180	-1561.6753	-901.8124	-63.5046	-22.8825	-1567.7234	-905.3050	355.8233	-0.8226	-1660.5742	-958.9231	1170.4950	-2.8576
-1722.5173	-994.6931	1115.9063	-0.1223	-1561.6921	-901.8221	-59.5290	-25.5214	-1568.8506	-905.9560	365.9953	-0.7131	-1661.6444	-959.5411	1180.0396	-3.3948
-1721.1158	-993.8837	1131.4045	-0.1284	-1561.6803	-901.8153	-54.6782	-29.3011	-1569.0992	-906.0996	368.0939	-0.6847	-1663.1775	-960.4264	1191.5006	-4.8033
-1720.6310	-993.6038	1136.5613	-0.1304	-1561.6964	-901.8246	-48.2442	-34.5695	-1569.5884	-906.3820	372.5561	-0.6218	-1664.0680	-960.9406	1196.0177	-5.5017
-1720.2101	-993.3607	1141.2214	-0.1328	-1561.6940	-901.8232	-45.8589	-35.9872	-1570.3084	-906.7978	379.1156	-0.5234	-1667.7452	-963.0642	1205.9530	-7.7457
-1718.8468	-992.5734	1155.7716	-0.1398	-1561.7024	-901.8281	-38.1953	-37.8286	-1571.0303	-907.2146	385.6683	-0.4422	-1675.3733	-967.4690	1213.8066	-4.8524
-1717.6277	-991.8696	1169.1771	-0.1485	-1561.7026	-901.8282	-36.8971	-37.9756	-1571.5829	-907.5338	390.6703	-0.3929	-1677.5393	-968.7200	1215.8588	-3.8365
-1717.0565	-991.5397	1175.2396	-0.1523	-1561.7025	-901.8282	-29.0240	-37.8572	-1571.9061	-907.7205	393.5903	-0.3681	-1680.3739	-970.3568	1216.6554	-3.0201
-1716.2306	-991.0626	1182.5360	-0.1627	-1561.7041	-901.8290	-27.6342	-37.9221	-1572.0953	-907.8296	395.2969	-0.3542	-1689.2595	-975.4879	1219.2000	-0.4997
-1714.7293	-990.1957	1195.7076	-0.1845	-1561.6980	-901.8256	-20.6052	-38.0772	-1572.4065	-908.0093	397.9764	-0.3311				
-1708.7842	-986.7628	1206.6505	-0.2319	-1561.7025	-901.8282	-17.9772	-39.1302	-1572.8816	-908.2838	402.1241	-0.2947				
-1705.4169	-984.8181	1212.5851	-0.2467	-1561.6947	-901.8236	-12.9372	-41.4044	-1573.5426	-908.6654	407.9326	-0.2480				
-1700.0845	-981.7389	1214.7575	-0.31151	-1561.6951	-901.8239	-11.5422	-43.9103	-1574.4406	-909.1839	415.8717	-0.1911				
-1689.2595	-975.4879	1219.2000	-0.49971	-1561.6948	-901.8237	-9.6880	-45.7909	-1575.6497	-909.8821	426.5897	-0.1239				
				-1561.6945	-901.8236	-7.2175	-46.2063	-1577.2776	-910.8223	441.0207	-0.0478				
				-1561.6945	-901.8236	-3.9065	-42.5950	-1579.4812	-912.0947	460.4548	0.0337				
				-1561.6951	-901.8240	-0.4978	-32.5812	-1582.5024	-913.8394	486.7518	0.1164				

240 degrees OUTER SURFACE				240 degrees INNER SURFACE											
X8	Y8	Z8	Pressure	X8	Y8	Z8	Pressure	X8	Y8	Z8	Pressure	X8	Y8	Z8	Pressure
[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]
-999.5741	-1730.9697	-355.6000	-8.7356	-999.5741	-1730.9697	-355.6000	-8.7356	-901.7442	-1561.5571	47.6388	-3.5567	-936.2593	-1621.3272	826.4599	-1.0582
-999.7000	-1731.1877	-355.5218	-8.6725	-999.2063	-1730.3330	-355.5454	-8.7346	-901.7093	-1561.4966	54.7495	-3.6240	-938.0092	-1624.3573	852.8315	-0.9565
-1001.5448	-1734.3826	-353.6828	-8.0976	-988.5282	-1711.8414	-353.9658	-9.1796	-901.7228	-1561.5201	61.9955	-3.8071	-938.5591	-1625.3098	861.0986	-0.9293
-1014.0025	-1755.9556	-341.8362	-4.1968	-980.4749	-1697.8956	-350.5814	-8.6410	-901.7636	-1561.5907	68.3280	-4.0387	-939.7300	-1627.3373	879.0879	-0.8842
-1014.7736	-1757.2909	-340.2380	-3.9494	-977.7108	-1693.1089	-349.4233	-8.4406	-901.8085	-1561.6683	73.9611	-4.2651	-941.4396	-1630.2982	905.2811	-0.8332
-1017.5670	-1762.1282	-332.1349	-3.1795	-974.3846	-1687.3488	-347.1446	-8.6502	-901.8328	-1561.7105	77.2688	-4.3920	-942.8239	-1632.6950	926.3975	-0.8068
-1021.2348	-1768.4800	-321.7192	-2.1550	-967.2960	-1675.0737	-342.3101	-9.0913	-901.8204	-1561.6892	78.9520	-4.4602	-943.9435	-1634.6339	943.4430	-0.7940
-1026.9380	-1778.3563	-291.6497	-0.9631	-961.9050	-1665.7380	-336.8670	-9.6169	-901.7965	-1561.6477	83.3247	-4.6197	-944.8531	-1636.2091	957.2104	-0.7884
-1027.2070	-1778.8221	-290.3161	-0.9096	-957.4644	-1658.0482	-332.3967	-10.0452	-901.7824	-1561.6231	87.1084	-4.7458	-945.5907	-1637.4863	968.3361	-0.7880
-1027.3044	-1778.9907	-289.3053	-0.8915	-952.3385	-1649.1718	-325.6424	-10.4429	-901.7738	-1561.6085	90.3437	-4.8469	-946.1860	-1638.5173	977.3271	-0.7901
-1030.4279	-1784.3995	-238.3652	-0.3771	-948.2067	-1642.0165	-320.2242	-10.7611	-901.7687	-1561.5995	93.0814	-4.9315	-946.6671	-1639.3503	984.5954	-0.7951
-1030.4329	-1784.4082	-237.9948	-0.3751	-945.1353	-1636.6978	-315.0764	-10.9881	-901.7673	-1561.5969	93.9265	-4.9587	-947.0505	-1640.0144	990.3716	-0.8037
-1030.4259	-1784.3961	-195.5658	-0.2396	-939.6999	-1627.2853	-306.0052	-11.3881	-901.7651	-1561.5934	95.3940	-4.9968	-947.0952	-1640.0918	991.0638	-0.8113
-1030.4277	-1784.3992	-191.4400	-0.2327	-933.6954	-1616.8873	-293.3921	-11.5825	-901.7622	-1561.5884	97.9605	-5.0443	-947.1718	-1640.2245	992.2476	-0.8191
-1030.1572	-1783.9308	-154.7656	-0.1834	-932.0685	-1614.0700	-289.9929	-11.6334	-901.7593	-1561.5834	101.4025	-5.1173	-947.3032	-1640.4519	994.2729	-0.8254
-1030.3900	-1784.3340	-99.2045	-0.1506	-930.8580	-1611.9738	-286.9105	-11.6592	-901.7571	-1561.5797	104.9091	-5.3039	-947.4753	-1640.7500	996.9226	-0.8319
-1030.3311	-1784.2318	-83.6390	-0.1405	-925.2037	-1602.1820	-272.6014	-11.7868	-901.7556	-1561.5767	108.4452	-5.4889	-947.6478	-1641.0487	999.5743	-0.8388
-1030.3909	-1784.3356	-68.3197	-0.1351	-919.4555	-1592.2278	-254.4561	-11.6919	-901.7565	-1561.5783	141.8601	-5.3837	-947.8208	-1641.3484	1002.2274	-0.8450
-1030.2495	-1784.0907	-19.3312	-0.1197	-919.3101	-1591.9761	-254.0000	-11.6896	-901.7556	-1561.5768	174.9025	-4.4953	-949.0864	-1643.5399	1021.4532	-0.8676
-1030.3778	-1784.3129	26.3967	-0.1104	-916.2921	-1586.7498	-243.3062	-11.9017	-901.7536	-1561.5732	207.6474	-3.5118	-950.3513	-1645.7304	1040.6814	-0.8941
-1030.3024	-1784.1823	46.8301	-0.1059	-913.6982	-1582.2578	-232.2890	-11.5983	-901.7506	-1561.5682	240.1698	-2.8108	-951.6169	-1647.9221	1059.9108	-0.9250
-1030.4218	-1784.3889	82.3557	-0.1009	-911.3092	-1578.1210	-221.0746	-11.3348	-901.9633	-1561.9365	272.5402	-2.4003	-952.8817	-1650.1121	1079.1416	-0.9572
-1030.3451	-1784.2562	113.5313	-0.0967	-909.1710	-1574.4181	-209.6263	-11.1218	-902.7036	-1563.2185	304.8000	-2.0091	-954.1484	-1652.3058	1098.3728	-0.9857
-1030.3073	-1784.1907	151.9165	-0.0932	-907.3717	-1571.3024	-197.9149	-10.8045	-903.1181	-1563.9363	315.2315	-2.0811	-955.4479	-1654.5562	1117.6000	-0.9824
-1030.0814	-1783.7997	199.1307	-0.0885	-905.7543	-1568.5015	-186.0530	-10.3209	-903.5316	-1564.6522	325.6524	-2.1471	-956.3371	-1656.0960	1131.3562	-0.9836
-1029.7952	-1783.3038	226.6311	-0.0856	-904.9138	-1567.0459	-178.4120	-10.0162	-904.1323	-1565.6925	336.0391	-2.1906	-957.2535	-1657.6830	1145.0112	-0.9894
-1028.1126	-1780.3901	332.8409	-0.0797	-904.1091	-1565.6521	-170.7769	-9.6940	-904.7330	-1566.7329	346.4262	-2.2093	-957.2603	-1657.6946	1145.1156	-0.9894
-1024.2977	-1773.7841	506.2557	-0.0715	-903.5114	-1564.6174	-163.1358	-9.3454	-905.3337	-1567.7732	356.8137	-2.2552	-957.2714	-1657.7141	1145.2817	-0.9895
-1024.0055	-1773.2778	516.9045	-0.0709	-903.0943	-1563.8951	-157.3571	-9.0033	-906.0005	-1568.9277	367.1846	-2.3041	-958.1597	-1659.2522	1158.9036	-0.9950
-1023.7637	-1772.8594	524.0836	-0.0706	-902.8543	-1563.4796	-154.0186	-8.8494	-906.5713	-1569.9161	375.7723	-2.3279	-958.8167	-1660.3899	1168.7865	-0.9967
-1017.2999	-1761.6658	681.6053	-0.0688	-902.7322	-1563.2681	-152.0790	-8.8046	-907.1426	-1570.9054	384.3406	-2.3539	-959.1092	-1660.8965	1173.3129	-0.9977
-1015.6273	-1758.7693	717.6893	-0.0696	-902.5600	-1562.9700	-149.3952	-8.7498	-907.7142	-1571.8955	392.8906	-2.3876	-959.5136	-1661.5968	1179.3608	-0.9958
-1011.5682	-1751.7401	795.2901	-0.0726	-902.4391	-1562.7606	-145.9285	-8.5786	-908.1519	-1572.6534	399.4150	-2.4164	-960.0527	-1662.5304	1187.6481	-0.9946
-1009.1852	-1747.6134	840.5493	-0.0765	-902.2837	-1562.4912	-141.4034	-8.2145	-908.4078	-1573.0966	403.2245	-2.4332	-962.3978	-1666.5914	1203.8212	-0.9745
-1006.2944	-1742.6073	894.3758	-0.0842	-902.0841	-1562.1458	-135.4780	-7.8145	-908.5576	-1573.3560	405.4506	-2.4427	-962.4608	-1666.7004	1204.1959	-0.9742
-1004.2344	-1739.0402	934.9593	-0.0927	-901.8881	-1561.8062	-127.7494	-7.4436	-908.7295	-1573.6536	408.1943	-2.4558	-962.6409	-1667.0125	1204.5187	-0.9761
-1002.8930	-1736.7173	961.3008	-0.1013	-901.8929	-1561.8147	-122.0953	-7.1303	-908.9690	-1574.0681	411.9844	-2.4737	-968.6091	-1677.3473	1215.7759	-1.0406
-1001.5794	-1734.4424	986.0522	-0.1106	-901.8524	-1561.7445	-117.7394	-6.8892	-909.2997	-1574.6411	417.1707	-2.4982	-975.3081	-1688.9482	1219.1024	-1.3774
-1000.2571	-1732.1527	1010.7168	-0.1228	-901.7418	-1561.5530	-104.9031	-6.2084	-909.7660	-1575.4484	424.3872	-2.5312	-975.5040	-1689.2876	1219.2000	-1.3889
-999.0633	-1730.0851	1033.1090	-0.1351	-901.7033	-1561.4863	-88.6836	-5.5973	-910.4174	-1576.5764	434.3393	-2.5732				
-997.8353	-1727.9587	1056.9661	-0.1545	-901.7668	-1561.5961	-73.7128	-5.1707	-911.3326	-1578.1613	448.1190	-2.6234				
-997.3466	-1727.1124	1066.1133	-0.1625	-901.8170	-1561.6834	-67.9537	-5.0385	-912.6232	-1580.3961	467.2139	-2.6792				
-995.9933	-1724.7688	1091.4386	-0.1923	-901.7477	-1561.5631	-59.9034	-4.8474	-912.7203	-1580.5645	468.6545	-2.6790				
-995.4525	-1723.8325	1101.6008	-0.2076	-901.7086	-1561.4954	-47.2397	-4.5860	-914.3493	-1583.3854	493.8419	-2.7450				
-993.9688	-1721.2633	1129.4141	-0.2633	-901.8181	-1561.6851	-35.6485	-4.3778	-916.1516	-1586.5065	521.1789	-2.7410				
-993.4091	-1720.2938	1139.9806	-0.2928	-901.8279	-1561.7022	-34.7429	-4.3633	-918.0115	-1589.7273	549.0734	-2.6755				
-992.0901	-1718.0098	1164.8844	-0.3952	-901.7185	-1561.5126	-24.5500	-4.1867	-918.4068	-1590.4120	555.0043	-2.6464				
-991.8271	-1717.5544	1169.8518	-0.4264	-901.7323	-1561.5365	-13.1151	-4.0249	-919.8611	-1592.9304	577.3352	-2.5620				
-991.5117	-1717.0082	1175.3442	-0.5052	-901.8229	-1561.6934	-3.1270	-3.9139	-921.7429	-1596.1890	606.0086	-2.3990				
-990.3971	-1715.0779	1193.5963	-0.7717	-901.7988	-1561.6516	-0.4200	-3.8821	-923.6417	-1599.4771	634.9063	-2.2106				
-984.1710	-1704.2961	1212.9292	-1.4175	-901.7377	-1561.5458	7.3571	-3.7948	-925.5551	-1602.7905	663.9273	-2.0154				
-983.8378	-1703.7191	1214.0291	-1.4551	-901.7115	-1561.5004	15.5280	-3.7185	-927.4698	-1606.1063	693.0247	-1.8212				
-983.5249	-1703.1775	1214.2421	-1.4562	-901.7185	-1561.5127	23.8581	-3.6414	-929.2360	-1609.1647	719.8547	-1.6477				
-975.50403	-1689.288	1219.2000	-1.38889	-901.7611	-1561.5864	32.1243	-3.5723	-930.9988	-1612.2175	746.6318	-1.4782				
				-901.8316	-1561.7085	39.2539	-3.5422	-932.7551	-1615.2588	773.3383	-1.3193				
				-901.8230	-1561.6936	40.1166	-3.5394	-934.5071	-1618.2929	799.9509	-1.1797				

	270 degrees	OUTER SURFACE		270 degrees	INNER SURFACE										
X9	Y9	Z9	Pressure	X9	Y9	Z9	Pressure	X9	Y9	Z9	Pressure	X9	Y9	Z9	Pressure
[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]
0.0000	-1998.8173	-355.6000	-11.0117	0.0000	-1998.8173	-355.6000	-11.0117	0.0000	-1803.3806	4.3251	-13.6366	0.0000	-1835.1362	545.6033	-0.6589
0.0000	-2007.2842	-352.8384	-8.9493	0.0000	-1984.0856	-354.4764	-10.3796	0.0000	-1803.3761	6.2591	-7.8624	0.0000	-1838.8821	573.8787	-0.6589
0.0000	-2018.2837	-349.4242	-6.4225	0.0000	-1976.4346	-353.9088	-10.1085	0.0000	-1803.3838	8.9087	-4.9400	0.0000	-1842.7112	602.6326	-0.6618
0.0000	-2027.5812	-341.0839	-4.5116	0.0000	-1970.0155	-352.5453	-9.8649	0.0000	-1803.3920	14.1472	0.5357	0.0000	-1846.5809	631.7386	-0.6674
0.0000	-2034.9241	-332.7994	-3.3211	0.0000	-1952.7465	-348.7834	-9.5205	0.0000	-1803.3889	15.9162	1.1777	0.0000	-1850.4804	661.0704	-0.6712
0.0000	-2043.1433	-319.8527	-2.1282	0.0000	-1935.8728	-342.8736	-10.2250	0.0000	-1803.3948	23.1074	3.7006	0.0000	-1854.2695	689.6636	-0.6721
0.0000	-2053.5764	-291.2890	-1.0356	0.0000	-1932.3883	-341.3911	-10.3940	0.0000	-1803.3959	23.7926	3.9348	0.0000	-1854.3793	690.5041	-0.6720
0.0000	-2054.5005	-288.7401	-0.9404	0.0000	-1916.4312	-333.4877	-11.3333	0.0000	-1803.3777	30.4610	4.5290	0.0000	-1857.9349	717.6498	-0.6713
0.0000	-2054.8301	-287.3983	-0.9058	0.0000	-1897.0158	-320.7802	-12.1951	0.0000	-1803.3914	35.5472	4.9945	0.0000	-1861.5005	744.7689	-0.6724
0.0000	-2056.1126	-277.3029	-0.7649	0.0000	-1895.9785	-320.1001	-12.2398	0.0000	-1803.3821	37.9456	5.0117	0.0000	-1865.0668	771.8430	-0.6753
0.0000	-2060.2495	-246.3358	-0.3136	0.0000	-1895.1381	-319.3918	-12.2865	0.0000	-1803.3748	45.4922	5.0417	0.0000	-1868.6378	798.8524	-0.6766
0.0000	-2060.3840	-241.2993	-0.2818	0.0000	-1879.1428	-306.0315	-13.1235	0.0000	-1803.3903	49.5178	5.0755	0.0000	-1869.0040	801.6050	-0.6764
0.0000	-2060.4502	-198.6832	-0.1075	0.0000	-1864.3970	-290.5752	-13.3254	0.0000	-1803.3717	53.0601	5.0208	0.0000	-1872.1495	825.7159	-0.6732
0.0000	-2060.4517	-178.2375	-0.0798	0.0000	-1864.2351	-290.4081	-13.3275	0.0000	-1803.3649	60.6291	4.9052	0.0000	-1875.6233	852.4550	-0.6676
0.0000	-2060.2686	-139.2026	-0.0299	0.0000	-1864.1102	-290.2491	-13.3267	0.0000	-1803.3910	65.7007	4.8319	0.0000	-1879.0867	879.1122	-0.6613
0.0000	-2060.1455	-104.0962	-0.0089	0.0000	-1849.2976	-271.4936	-13.3193	0.0000	-1803.3740	68.2000	4.7627	0.0000	-1882.5606	905.7636	-0.6562
0.0000	-2060.1992	-41.9625	0.0103	0.0000	-1841.7780	-259.5523	-13.3241	0.0000	-1803.3462	74.3207	4.5864	0.0000	-1885.3788	927.3085	-0.6531
0.0000	-2060.2268	5.2271	0.0183	0.0000	-1838.3160	-254.0000	-13.5337	0.0000	-1803.3556	79.2811	4.4480	0.0000	-1887.6621	944.7399	-0.6524
0.0000	-2060.2007	66.4540	0.0215	0.0000	-1829.2346	-236.6404	-13.9526	0.0000	-1803.3829	83.3069	4.3391	0.0000	-1889.5187	958.8441	-0.6533
0.0000	-2060.0689	118.3720	0.0221	0.0000	-1821.5656	-218.6394	-14.8320	0.0000	-1803.3972	84.9144	4.2959	0.0000	-1891.0236	970.2542	-0.6549
0.0000	-2059.3157	194.1583	0.0208	0.0000	-1815.2515	-200.1169	-15.9242	0.0000	-1803.3796	86.5858	4.2367	0.0000	-1892.2374	979.4825	-0.6568
0.0000	-2057.7437	255.8691	0.0186	0.0000	-1810.2947	-181.1815	-16.8552	0.0000	-1803.3555	89.2608	4.1435	0.0000	-1893.2188	986.9432	-0.6585
0.0000	-2054.4058	387.1755	0.0116	0.0000	-1806.6912	-161.9373	-17.4847	0.0000	-1803.3414	91.4423	4.0701	0.0000	-1894.0116	992.9719	-0.6593
0.0000	-2053.4727	407.1994	0.0103	0.0000	-1804.4360	-142.4834	-17.9094	0.0000	-1803.3330	93.2200	4.0118	0.0000	-1894.0856	993.5320	-0.6586
0.0000	-2049.6528	477.8672	0.0060	0.0000	-1803.8460	-134.2776	-18.2184	0.0000	-1803.3318	93.9366	3.9891	0.0000	-1894.2122	994.4897	-0.6579
0.0000	-2044.7537	555.2736	0.0011	0.0000	-1803.4736	-126.0667	-18.1544	0.0000	-1803.3300	95.1660	3.9504	0.0000	-1894.4287	996.1278	-0.6578
0.0000	-2043.3662	574.2092	0.0002	0.0000	-1803.4080	-117.8543	-18.0879	0.0000	-1803.3274	97.2784	3.8852	0.0000	-1894.7118	998.2703	-0.6578
0.0000	-2037.8915	642.3864	-0.0039	0.0000	-1803.3579	-111.5862	-18.0627	0.0000	-1803.3254	100.0572	3.8013	0.0000	-1894.9951	1000.4133	-0.6577
0.0000	-2032.7024	701.6353	-0.0078	0.0000	-1803.3330	-107.9270	-18.1108	0.0000	-1803.3245	102.8497	3.7181	0.0000	-1895.2784	1002.5561	-0.6567
0.0000	-2030.7585	721.2975	-0.0093	0.0000	-1803.3269	-105.7880	-18.1720	0.0000	-1803.3251	105.6490	3.6384	0.0000	-1897.8029	1021.7151	-0.6638
0.0000	-2021.3098	810.3706	-0.0146	0.0000	-1803.3186	-104.6634	-18.1937	0.0000	-1803.3251	138.9619	2.8201	0.0000	-1900.3257	1040.8812	-0.6737
0.0000	-2017.6649	845.5095	-0.0180	0.0000	-1803.3104	-103.1187	-18.2100	0.0000	-1803.3251	172.2131	2.0054	0.0000	-1902.8492	1060.0544	-0.6857
0.0000	-2011.1831	905.7720	-0.0231	0.0000	-1803.3048	-101.0018	-18.2416	0.0000	-1803.3250	205.4150	1.1358	0.0000	-1905.3707	1079.2336	-0.6983
0.0000	-2007.9908	936.5768	-0.0280	0.0000	-1803.3082	-98.1223	-18.3153	0.0000	-1803.3251	238.5798	0.2308	0.0000	-1907.8966	1098.4161	-0.7056
0.0000	-2003.6094	979.4561	-0.0357	0.0000	-1803.3339	-94.1988	-18.4769	0.0000	-1803.7384	271.7154	-0.7367	0.0000	-1910.5796	1117.6000	-0.6985
0.0000	-2002.5430	989.0162	-0.0380	0.0000	-1803.3965	-89.4897	-18.7769	0.0000	-1805.2454	304.8000	-1.4673	0.0000	-1911.9238	1127.6078	-0.6791
0.0000	-1998.5786	1027.1545	-0.0502	0.0000	-1803.3903	-88.9123	-18.8094	0.0000	-1805.8694	314.8258	-1.3802	0.0000	-1912.3767	1131.1169	-0.6706
0.0000	-1996.3825	1047.2820	-0.0564	0.0000	-1803.3323	-81.8301	-19.4070	0.0000	-1806.6270	324.8407	-1.2890	0.0000	-1912.9109	1135.0950	-0.6664
0.0000	-1995.9968	1051.0476	-0.0577	0.0000	-1803.3954	-72.8501	-21.2497	0.0000	-1807.7773	334.8179	-1.2082	0.0000	-1914.1757	1144.8616	-0.6564
0.0000	-1995.4232	1056.6715	-0.0609	0.0000	-1803.3938	-72.5137	-21.3422	0.0000	-1808.9279	344.7938	-1.1357	0.0000	-1915.4424	1154.3143	-0.6411
0.0000	-1991.4645	1093.7371	-0.0840	0.0000	-1803.3572	-63.5020	-25.7046	0.0000	-1810.0786	354.7683	-1.0704	0.0000	-1915.9207	1157.9865	-0.6341
0.0000	-1990.5287	1102.5100	-0.0913	0.0000	-1803.3762	-59.6023	-29.0209	0.0000	-1811.3234	364.7301	-1.0105	0.0000	-1916.3862	1161.4889	-0.6213
0.0000	-1987.8091	1128.0179	-0.1223	0.0000	-1803.3623	-54.6768	-33.3994	0.0000	-1812.2301	371.6563	-0.9712	0.0000	-1917.7479	1171.9741	-0.5850
0.0000	-1986.7191	1138.2467	-0.1379	0.0000	-1803.3807	-48.3192	-38.5113	0.0000	-1813.1362	378.5728	-0.9339	0.0000	-1919.6429	1186.2415	-0.5067
0.0000	-1984.7380	1156.8344	-0.1794	0.0000	-1803.3778	-45.8584	-39.9194	0.0000	-1814.0409	385.4709	-0.8988	0.0000	-1919.9937	1188.9387	-0.4931
0.0000	-1983.3225	1170.3524	-0.2300	0.0000	-1803.3875	-38.2737	-41.0759	0.0000	-1814.7308	390.7269	-0.8739	0.0000	-1920.6931	1191.3571	-0.4790
0.0000	-1982.6232	1176.7986	-0.2566	0.0000	-1803.3877	-36.8971	-41.1500	0.0000	-1815.1334	393.7906	-0.8604	0.0000	-1925.4784	1205.5515	-0.4309
0.0000	-1981.7869	1183.0980	-0.3412	0.0000	-1803.3876	-29.1072	-40.5229	0.0000	-1815.3685	395.5787	-0.8529	0.0000	-1935.0186	1214.1050	-0.5997
0.0000	-1979.9515	1196.4353	-0.5184	0.0000	-1803.3893	-27.6346	-40.5748	0.0000	-1815.7903	398.7698	-0.8393	0.0000	-1937.0429	1215.8126	-0.6572
0.0000	-1972.0802	1208.3794	-0.9367	0.0000	-1803.3827	-20.6943	-40.6995	0.0000	-1816.3768	403.2070	-0.8212	0.0000	-1939.8269	1216.4944	-0.7269
0.0000	-1969.3745	1212.5667	-1.0958	0.0000	-1803.3879	-17.9780	-42.1867	0.0000	-1817.1755	409.2512	-0.7984	0.0000	-1950.6853	1219.2000	-1.0136
0.0000	-1964.8098	1214.2172	-1.0821	0.0000	-1803.3792	-13.0328	-45.3037	0.0000	-1818.2590	417.4348	-0.7713				
0.0000	-1950.6853	1219.2000	-1.0136	0.0000	-1803.3795	-11.6377	-48.5036	0.0000	-1819.7258	428.4750	-0.7415				
				0.0000	-1803.3792	-9.7833	-50.5685	0.0000	-1821.7129	443.3526	-0.7132				
				0.0000	-1803.3789	-7.3126	-50.7317	0.0000	-1824.4222	463.4145	-0.6916				
				0.0000	-1803.3788	-4.0013	-45.9850	0.0000	-1825.9984	474.9937	-0.6862				
				0.0000	-1803.3793	-0.5922	-35.6283	0.0000	-1827.9835	490.5833	-0.6732				
				0.0000	-1803.3801	2.1168	-24.0422	0.0000	-1831.5018	517.8918	-0.6627				

300 degrees OUTER SURFACE				300 degrees INNER SURFACE				INNER SURFACE							
X10	Y10	Z10	Pressure	X10	Y10	Z10	Pressure	X10	Y10	Z10	Pressure	X10	Y10	Z10	Pressure
[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]
999.5611	-1730.9474	-355.6000	-11.0809	999.5611	-1730.9474	-355.6000	-11.0809	901.7456	-1561.5595	47.6407	-3.9056	931.0926	-1612.3798	748.0637	0.2493
1011.0373	-1750.8206	-345.0327	-6.1250	997.3195	-1727.0653	-355.3352	-11.3186	901.7095	-1561.4970	54.7507	-4.2060	933.0233	-1615.7233	777.4103	0.2406
1013.8905	-1755.7617	-342.1175	-5.0163	989.2529	-1713.0966	-354.2041	-11.5184	901.7219	-1561.5186	61.9958	-4.5330	934.9532	-1619.0654	806.7375	0.2174
1016.8811	-1760.9404	-333.3405	-4.0784	978.8208	-1695.0311	-349.8435	-10.4455	901.7620	-1561.5877	68.3279	-4.8120	936.8818	-1622.4053	836.0267	0.1820
1022.3594	-1770.4273	-317.4415	-2.3797	977.1185	-1692.0834	-349.0999	-10.3251	901.8062	-1561.6644	73.9608	-5.0512	938.8090	-1625.7427	865.2903	0.1363
1024.8816	-1774.7950	-302.7879	-1.7860	975.0752	-1688.5450	-347.6576	-10.5081	901.8329	-1561.7107	77.5945	-5.2030	940.7357	-1629.0791	894.5303	0.0817
1027.4685	-1779.2748	-288.1894	-1.1463	967.0179	-1674.5919	-342.1036	-11.1925	901.8229	-1561.6935	78.9516	-5.2649	942.2905	-1631.7714	918.1188	0.0322
1028.3783	-1780.8503	-278.5643	-0.9387	957.6731	-1658.4096	-332.5915	-12.2677	901.7987	-1561.6515	83.3245	-5.4577	943.5443	-1633.9425	937.1605	-0.0108
1030.0475	-1783.7408	-252.2516	-0.5066	957.4871	-1658.0873	-332.4064	-12.2882	901.7844	-1561.6265	87.1083	-5.6166	944.5573	-1635.6967	952.5358	-0.0479
1030.3917	-1784.3370	-235.1941	-0.3349	957.3700	-1657.8845	-332.2531	-12.2991	901.7757	-1561.6117	90.3439	-5.7453	945.3779	-1637.1179	964.9514	-0.0792
1030.4244	-1784.3934	-214.5645	-0.2246	948.0386	-1641.7255	-320.0021	-12.9980	901.7704	-1561.6027	93.0818	-5.8529	946.0397	-1638.2639	974.9772	-0.1051
1030.4072	-1784.3638	-203.9333	-0.1737	940.0900	-1627.9608	-306.6227	-13.7644	901.7690	-1561.6002	93.9269	-5.8873	946.5728	-1639.1870	983.0728	-0.1277
1030.3634	-1784.2878	-174.5315	-0.1034	939.5912	-1627.0971	-305.7603	-13.8071	901.7669	-1561.5962	95.3944	-5.9308	946.9993	-1639.9258	989.5674	-0.1471
1030.2625	-1784.1129	-156.8056	-0.0693	938.9720	-1626.0249	-304.4332	-13.8150	901.7639	-1561.5912	97.9611	-5.9806	947.0497	-1640.0128	990.3231	-0.1497
1030.4121	-1784.3722	-111.7059	-0.0320	931.4387	-1612.9793	-288.6203	-13.9437	901.7609	-1561.5861	101.4033	-6.0651	947.1355	-1640.1615	991.6082	-0.1536
1030.3055	-1784.1875	-87.6001	-0.0118	926.7089	-1604.7886	-276.4572	-14.0798	901.7588	-1561.5823	104.9102	-6.2692	947.2825	-1640.4161	993.8071	-0.1602
1030.3762	-1784.3102	-72.5488	-0.0062	924.4561	-1600.8875	-270.4719	-14.1602	901.7570	-1561.5794	108.4465	-6.4338	947.4755	-1640.7501	996.6844	-0.1688
1030.1107	-1783.8502	-14.4060	0.0151	921.7883	-1596.2677	-261.9079	-14.1367	901.7580	-1561.5809	141.8614	-5.9775	947.6691	-1641.0855	999.5643	-0.1772
1030.4041	-1784.3584	71.4045	0.0265	919.2982	-1591.9554	-254.0000	-14.1200	901.7571	-1561.5796	174.9038	-4.7399	947.8630	-1641.4215	1002.4463	-0.1853
1030.3571	-1784.2769	81.7235	0.0279	916.2907	-1586.7473	-243.3026	-14.1916	901.7551	-1561.5759	207.6484	-3.3373	949.1260	-1643.6085	1021.6326	-0.2473
1030.3662	-1784.2927	87.5186	0.0281	913.6960	-1582.2540	-232.2817	-13.7890	901.7521	-1561.5707	240.1705	-2.0863	950.3887	-1645.7950	1040.8246	-0.3172
1030.3090	-1784.1937	145.6122	0.0289	911.3066	-1578.1165	-221.0633	-13.4179	901.9647	-1561.9390	272.5406	-1.0797	951.6520	-1647.9827	1060.0178	-0.3979
1030.1191	-1783.8650	201.2148	0.0297	909.1678	-1574.4125	-209.6112	-13.1296	902.7050	-1563.2208	304.8000	-0.1320	952.9143	-1650.1690	1079.2119	-0.4857
1029.5703	-1782.9146	248.5839	0.0276	907.3685	-1571.2965	-197.8958	-12.6969	903.1510	-1563.9932	315.3477	-0.0868	954.1788	-1652.3584	1098.4060	-0.5791
1028.1262	-1780.4138	350.4922	0.0229	905.7514	-1568.4965	-186.0296	-12.0669	903.5746	-1564.7269	325.8884	-0.0627	955.4354	-1654.5347	1117.6000	-0.6807
1027.7616	-1779.7824	367.5824	0.0220	904.9106	-1567.0404	-178.3885	-11.6865	904.1829	-1565.7803	336.3947	-0.0296	955.9088	-1655.3543	1124.6539	-0.7286
1027.2831	-1778.9536	389.2632	0.0200	904.1061	-1565.6472	-170.7531	-11.2800	904.7911	-1566.8334	346.9006	0.0124	956.3770	-1656.1650	1131.9048	-0.7841
1022.9591	-1771.4658	546.2394	0.0057	903.5087	-1564.6127	-163.1117	-10.8331	905.3992	-1567.8866	357.4065	0.0516	956.8797	-1657.0355	1139.3993	-0.8469
1021.8125	-1769.4804	576.6080	0.0024	903.0913	-1563.8900	-157.3329	-10.4113	906.0792	-1569.0638	367.8943	0.0856	957.3953	-1657.9285	1147.3648	-0.9101
1017.7802	-1762.4973	669.3679	-0.0071	902.8513	-1563.4742	-153.9943	-10.2212	906.4781	-1569.7550	373.9066	0.0973	958.0818	-1659.1177	1157.6096	-1.0236
1015.0387	-1757.7500	726.4756	-0.0131	902.7295	-1563.2633	-152.0546	-10.1640	906.7117	-1570.1594	377.3955	0.1018	958.3371	-1659.5595	1161.5165	-1.0680
1011.6406	-1751.8655	791.6002	-0.0212	902.5578	-1562.9659	-149.3709	-10.0903	906.8754	-1570.4426	379.9305	0.1064	958.6533	-1660.1069	1166.2878	-1.1686
1007.2852	-1744.3234	879.5940	-0.0327	902.4368	-1562.7565	-145.9046	-9.8728	907.2670	-1571.1210	385.9646	0.1143	959.4400	-1661.4694	1178.4252	-1.4063
1007.0784	-1743.9651	883.2473	-0.0333	902.2811	-1562.4869	-141.3804	-9.4177	907.5707	-1571.6471	390.5855	0.1167	959.8695	-1662.2131	1184.5476	-1.6023
1006.9498	-1743.7424	885.9937	-0.0338	902.0814	-1562.1411	-135.4562	-8.9112	907.7501	-1571.9575	393.2899	0.1141	961.5743	-1665.1655	1199.2388	-2.5359
1003.8416	-1738.3599	944.2355	-0.0441	901.8856	-1561.8020	-127.7293	-8.4336	907.8557	-1572.1403	394.8739	0.1100	962.4548	-1666.6902	1204.1351	-2.9345
1003.5797	-1737.9064	949.2382	-0.0452	901.8911	-1561.8114	-121.6217	-7.9964	907.9797	-1572.3552	396.7856	0.1056	965.4056	-1671.8001	1209.5806	-2.2372
1001.5878	-1734.4572	984.8944	-0.0523	901.8547	-1561.7485	-117.7217	-7.7184	908.2238	-1572.7778	400.4988	0.0973	968.5482	-1677.2421	1215.7213	-1.5719
999.4624	-1730.7766	1026.6273	-0.0605	901.7433	-1561.5555	-104.8882	-6.8449	908.5834	-1573.4005	405.9535	0.0814	972.0417	-1683.2918	1217.4669	-0.8792
999.2779	-1730.4569	1029.9852	-0.0611	901.7032	-1561.4861	-88.6721	-6.0332	909.0824	-1574.2647	413.5257	0.0523	975.4913	-1689.2655	1219.2000	-0.2422
999.1442	-1730.2256	1032.6184	-0.0615	901.7650	-1561.5930	-73.7041	-5.4583	909.7570	-1575.4329	423.7602	0.0082				
997.0100	-1726.5297	1072.5192	-0.0702	901.8170	-1561.6831	-67.7519	-5.2717	910.6651	-1577.0055	437.5206	-0.0406				
996.6586	-1725.9211	1079.0847	-0.0714	901.7493	-1561.5659	-59.8967	-5.0244	911.8145	-1578.9957	454.8737	-0.0683				
994.8604	-1722.8070	1112.8337	-0.0789	901.7082	-1561.4948	-47.2344	-4.6743	911.8887	-1579.1245	456.0128	-0.0701				
994.4976	-1722.1788	1119.7080	-0.0804	901.8157	-1561.6807	-35.6441	-4.3941	913.5215	-1581.9520	481.0019	-0.0749				
992.7203	-1719.1011	1153.2477	-0.0887	901.8271	-1561.7006	-34.5893	-4.3727	915.1760	-1584.8170	506.0651	-0.0388				
992.6229	-1718.9323	1155.0525	-0.0891	901.7192	-1561.5138	-24.5461	-4.1742	916.2514	-1586.6793	522.2723	0.0034				
992.4370	-1718.6104	1158.6005	-0.0913	901.7311	-1561.5347	-13.1115	-3.9944	916.8386	-1587.6963	531.2744	0.0247				
990.9555	-1716.0449	1185.8241	-0.1041	901.8234	-1561.6943	-2.9395	-3.8641	918.4995	-1590.5724	556.6635	0.0858				
987.4302	-1709.9401	1202.6375	-0.1044	901.8010	-1561.6554	-0.4176	-3.8342	920.1885	-1593.4972	582.3060	0.1329				
985.1703	-1706.0267	1212.0518	-0.1100	901.7390	-1561.5480	7.3596	-3.7391	921.8961	-1596.4544	608.0878	0.1692				
982.5316	-1701.4572	1214.0103	-0.1222	901.7117	-1561.5007	15.5306	-3.6489	922.9448	-1598.2703	623.9280	0.1873				
975.4913	-1689.2655	1219.2000	-0.2422	901.7179	-1561.5117	23.8608	-3.5985	923.6022	-1599.4088	634.0131	0.1987				
				901.7595	-1561.5835	32.1269	-3.6007	925.3088	-1602.3641	660.0803	0.2223				
				901.8320	-1561.7090	39.4639	-3.6689	927.2309	-1605.6926	689.3822	0.2412				
				901.8255	-1561.6979	40.1189	-3.6792	929.1594	-1609.0320	718.7159	0.2497				

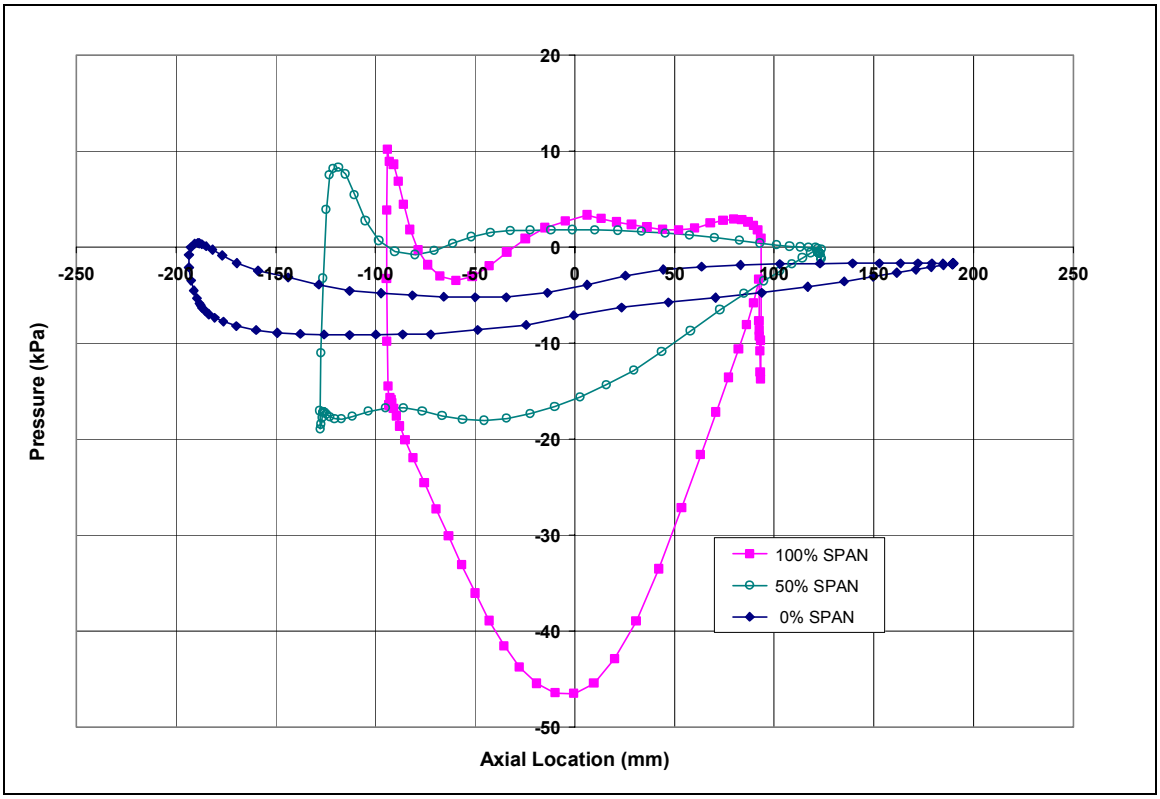
330 degrees OUTER SURFACE				330 degrees INNER SURFACE				INNER SURFACE							
X11	Y11	Z11	Pressure	X11	Y11	Z11	Pressure	X11	Y11	Z11	Pressure	X11	Y11	Z11	Pressure
[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]
1730.9557	-999.5659	-355.6000	-13.8642	1730.9557	-999.5659	-355.6000	-13.8642	1561.6947	-901.8236	-0.6866	-35.8622	1580.0270	-912.4099	465.1244	-3.1260
1748.2445	-1009.5496	-348.3833	-7.6421	1728.4718	-998.1316	-355.4304	-13.9518	1561.6952	-901.8240	2.0228	-24.1110	1583.1047	-914.1871	492.1471	-3.1879
1751.9235	-1011.6741	-345.9117	-6.6610	1713.4507	-989.4575	-354.2737	-12.9250	1561.6957	-901.8242	4.2316	-13.8872	1586.2730	-916.0167	519.4644	-3.2441
1765.1458	-1019.3095	-327.8052	-3.7129	1695.3189	-978.9870	-349.9792	-11.4949	1561.6919	-901.8220	6.1663	-8.2282	1589.4978	-917.8788	546.9666	-3.2860
1770.2720	-1022.2697	-316.6968	-2.7815	1693.4456	-977.9052	-349.5285	-11.3877	1561.6987	-901.8261	8.9072	-5.3340	1589.5255	-917.8949	547.2174	-3.2861
1776.8366	-1026.0604	-297.4400	-1.7285	1691.0841	-976.5415	-348.5956	-11.4917	1561.7056	-901.8299	14.0499	-0.1374	1592.6670	-919.7091	575.4486	-3.2816
1780.9056	-1028.4103	-278.7746	-1.0923	1675.5282	-967.5585	-342.5129	-12.2254	1561.7028	-901.8284	15.9148	0.5417	1595.8998	-921.5759	604.1234	-3.2642
1783.2344	-1029.7550	-258.1809	-0.6781	1662.2667	-959.9005	-334.8699	-13.2620	1561.7087	-901.8318	23.1062	3.0874	1599.1797	-923.4700	633.0968	-3.2346
1784.1377	-1030.2767	-244.4930	-0.4560	1658.8817	-957.9457	-332.9644	-13.5228	1561.7095	-901.8323	23.6892	3.2871	1602.4971	-925.3856	662.2559	-3.1916
1784.4133	-1030.4359	-200.2120	-0.1809	1655.7007	-956.1088	-330.5641	-13.7117	1561.6935	-901.8230	30.4599	3.8781	1605.8264	-927.3081	691.5120	-3.1367
1784.4139	-1030.4362	-199.3843	-0.1767	1641.9559	-948.1716	-320.1968	-14.4187	1561.7051	-901.8297	35.4415	4.3148	1608.9044	-929.0856	718.5314	-3.0822
1784.4149	-1030.4367	-198.2907	-0.1742	1631.8510	-942.3364	-310.4054	-14.9734	1561.6968	-901.8248	37.9446	4.3262	1611.9823	-930.8630	745.5138	-3.0249
1783.9780	-1030.1845	-148.7912	-0.0694	1627.3312	-939.7264	-306.0468	-15.2573	1561.6912	-901.8217	45.4913	4.3445	1615.0513	-932.6353	772.4409	-2.9605
1784.3809	-1030.4172	-68.7054	-0.0002	1622.2878	-936.8142	-299.9457	-15.3207	1561.7042	-901.8292	49.4114	4.3691	1618.1140	-934.4039	799.2916	-2.8858
1784.3547	-1030.4020	-63.7682	0.0038	1614.3041	-932.2037	-290.3356	-15.3919	1561.6879	-901.8198	53.0592	4.2724	1621.1783	-936.1734	826.0505	-2.8007
1784.3865	-1030.4203	-59.4428	0.0054	1607.2210	-928.1134	-279.9285	-15.3203	1561.6827	-901.8168	60.6281	4.1078	1624.2411	-937.9420	852.6946	-2.7039
1784.1335	-1030.2743	28.4455	0.0332	1601.9640	-925.0778	-272.2657	-15.2897	1561.7050	-901.8295	65.5946	4.0193	1627.3112	-939.7148	879.2419	-2.5918
1784.0255	-1030.2119	55.8568	0.0384	1595.5641	-921.3821	-260.5318	-15.1314	1561.6897	-901.8207	68.1989	3.9271	1630.3926	-941.4943	905.7453	-2.4583
1784.0802	-1030.2434	176.1689	0.0440	1591.9631	-919.3026	-254.0000	-15.0268	1561.6660	-901.8072	74.3196	3.7132	1630.9490	-941.8156	910.5318	-2.4322
1783.9651	-1030.1770	187.1077	0.0443	1591.9027	-919.2677	-253.9988	-15.7247	1561.6747	-901.8121	79.2801	3.5629	1632.8033	-942.8865	927.1310	-2.3390
1783.7188	-1030.0348	202.9399	0.0438	1584.0839	-914.7526	-236.6385	-15.5552	1561.6990	-901.8261	83.3060	3.4543	1634.7380	-944.0037	944.4063	-2.2410
1780.0870	-1027.9374	345.8386	0.0398	1577.4421	-910.9172	-218.6355	-16.1993	1561.7105	-901.8328	84.8010	3.4151	1636.3129	-944.9131	958.3674	-2.1592
1773.4009	-1024.0765	513.8364	0.0265	1571.9741	-907.7597	-200.1110	-17.1581	1561.6941	-901.8233	86.5851	3.3475	1637.5918	-945.6515	969.6523	-2.0920
1772.9884	-1023.8384	522.5540	0.0258	1567.6816	-905.2809	-181.1735	-17.9898	1561.6735	-901.8115	89.2604	3.2479	1638.6246	-946.2480	978.7744	-2.0368
1772.7024	-1023.6732	527.3951	0.0254	1564.5612	-903.4789	-161.9272	-18.5576	1561.6614	-901.8044	91.4421	3.1695	1639.4607	-946.7307	986.1476	-1.9900
1768.8901	-1021.4717	582.5120	0.0202	1562.6090	-902.3516	-142.4712	-18.9451	1561.6544	-901.8004	93.2200	3.1073	1640.1322	-947.1186	992.0691	-1.9495
1760.7565	-1016.7748	696.6693	0.0095	1562.0977	-902.0564	-134.2654	-19.3021	1561.6533	-901.7998	93.9366	3.0827	1640.2020	-947.1589	992.6744	-1.9455
1759.8300	-1016.2398	707.8135	0.0082	1561.7759	-901.8706	-126.0543	-19.3084	1561.6520	-901.7989	95.1660	3.0422	1640.3218	-947.2281	993.7098	-1.9413
1749.9059	-1010.5090	816.6397	-0.0032	1561.7189	-901.8377	-117.8418	-19.3075	1561.6498	-901.7977	97.2786	2.9748	1640.5269	-947.3464	995.4806	-1.9335
1747.7627	-1009.2714	840.6863	-0.0065	1561.6758	-901.8127	-111.5736	-19.3198	1561.6480	-901.7967	100.0575	2.8874	1640.7952	-947.5015	997.7977	-1.9246
1740.8987	-1005.3077	914.3488	-0.0163	1561.6538	-901.8000	-107.9143	-19.4039	1561.6476	-901.7964	102.8501	2.7979	1641.0640	-947.6566	1000.1157	-1.9217
1738.7991	-1004.0953	937.7352	-0.0213	1561.6489	-901.7971	-105.7753	-19.4752	1561.6482	-901.7968	105.6497	2.7312	1641.3328	-947.8118	1002.4344	-1.9273
1734.7755	-1001.7717	983.0056	-0.0323	1561.6417	-901.7931	-104.6511	-19.4906	1561.6480	-901.7967	138.9626	1.8116	1643.5266	-949.0787	1021.6158	-1.8034
1733.3107	-1000.9259	998.5301	-0.0357	1561.6348	-901.7890	-103.1068	-19.4972	1561.6480	-901.7967	172.2137	0.8129	1645.7159	-950.3431	1040.8042	-1.6647
1732.6801	-1000.5618	1005.5768	-0.0378	1561.6303	-901.7864	-100.9906	-19.5165	1561.6480	-901.7967	205.4155	-0.2407	1647.9042	-951.6066	1059.9981	-1.5172
1728.8575	-998.3542	1047.3134	-0.0534	1561.6335	-901.7883	-98.1119	-19.5714	1561.6480	-901.7967	238.5802	-1.4355	1650.0890	-952.8682	1079.1962	-1.3598
1728.5801	-998.1940	1050.3646	-0.0546	1561.6563	-901.8015	-94.1895	-19.7025	1562.0059	-902.0034	271.7156	-2.6053	1652.2760	-954.1312	1098.3964	-1.2091
1727.8687	-997.7833	1058.2329	-0.0588	1561.7094	-901.8322	-89.5687	-19.9457	1563.3109	-902.7570	304.8000	-3.4017	1654.4641	-955.3948	1117.6003	-1.0728
1726.0078	-996.7087	1078.0658	-0.0698	1561.7033	-901.8286	-88.9044	-19.9688	1563.2616	-902.7285	304.8006	-3.3754	1654.5426	-955.4401	1117.6001	-1.0679
1724.9872	-996.1193	1089.4496	-0.0781	1561.6539	-901.8001	-81.8238	-20.3154	1563.8762	-903.0834	314.9051	-3.2687	1655.0105	-955.7103	1121.6260	-1.0427
1724.3077	-995.7269	1096.7127	-0.0831	1561.7083	-901.8315	-72.9244	-21.3528	1564.5521	-903.4738	325.0033	-3.1706	1656.1194	-956.3506	1131.5418	-0.9738
1723.5488	-995.2888	1105.0529	-0.0905	1561.7067	-901.8306	-72.5094	-21.4128	1565.5660	-904.0592	335.0667	-3.0969	1657.2681	-957.0140	1141.4326	-0.9161
1722.6395	-994.7636	1114.6550	-0.0992	1561.6762	-901.8130	-63.4993	-23.8005	1566.5802	-904.6450	345.1317	-3.0417	1657.8140	-957.3290	1146.3042	-0.8870
1722.0210	-994.4064	1121.4979	-0.1079	1561.6925	-901.8223	-59.6756	-25.7024	1567.5953	-905.2311	355.1982	-3.0038	1658.7557	-957.8729	1154.4346	-0.8546
1720.6588	-993.6198	1135.9286	-0.1255	1561.6799	-901.8152	-54.6754	-28.7119	1568.6990	-905.8685	365.2512	-2.9822	1659.4902	-958.2972	1160.9407	-0.8301
1719.0116	-992.6686	1154.1404	-0.1605	1561.6957	-901.8242	-48.3942	-34.1861	1569.5558	-906.3632	372.7854	-2.9692	1660.0872	-958.6419	1166.1371	-0.8181
1718.4187	-992.3262	1160.3716	-0.1730	1561.6932	-901.8229	-45.8579	-36.3168	1570.4115	-906.8573	380.3089	-2.9651	1661.4327	-959.4188	1178.2180	-0.7899
1718.0885	-992.1355	1164.0886	-0.1861	1561.7015	-901.8276	-38.3521	-40.9897	1571.2659	-907.3506	387.8141	-2.9679	1662.2869	-959.9121	1185.1891	-0.7583
1715.8307	-990.8318	1188.1366	-0.3360	1561.7018	-901.8278	-36.8972	-41.5388	1571.9179	-907.7272	393.5364	-2.9738	1665.5448	-961.7935	1200.4111	-0.6332
1715.3702	-990.5659	1192.1390	-0.3782	1561.7018	-901.8278	-29.1905	-42.1220	1572.2985	-907.9470	396.8742	-2.9778	1666.8033	-962.5203	1204.4041	-0.5869
1712.5570	-988.9413	1197.6593	-0.4927	1561.7034	-901.8287	-27.6351	-42.2433	1572.5209	-908.0754	398.8240	-2.9799	1670.6201	-964.7242	1208.3961	-0.5668
1705.0189	-984.5884	1212.8903	-0.7509	1561.6975	-901.8253	-20.7834	-42.6530	1572.8901	-908.2887	401.9752	-2.9867	1677.3534	-968.6125	1215.7773	-0.5387
1691.3405	-976.6896	1218.4309	-0.7624	1561.7024	-901.8281	-17.9788	-44.0717	1573.3933	-908.5793	406.2643	-2.9964	1685.7733	-973.4747	1218.1877	-0.6935
1689.27368	-975.4962	1219.2000	-0.75371	1561.6948	-901.8237	-13.1285	-47.1487	1574.0785	-908.9748	412.0814	-3.0110	1689.2737	-975.4962	1219.2000	-0.7537
				1561.6951	-901.8239	-11.7332	-49.8428	1575.0150	-909.5157	420.0010	-3.0334				
				1561.6945	-901.8236	-9.8786	-51.6790	1575.1771	-909.6093	421.3699	-3.0375				
				1561.6943	-901.8234	-7.4077	-51.5829	1576.2065	-910.2037	430.7438	-3.0541				
				1561.6942	-901.8234	-4.0962	-46.5360	1577.8153	-911.1328	445.3242	-3.0831				

360 degrees OUTER SURFACE				360 degrees INNER SURFACE				INNER SURFACE							
X12	Y12	Z12	Pressure	X12	Y12	Z12	Pressure	X12	Y12	Z12	Pressure	X12	Y12	Z12	Pressure
[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]	[mm]	[mm]	[mm]	[kPa]
1998.8530	0.0000	-355.6000	-12.0057	1998.8530	0.0000	-355.6000	-12.0057	1803.1506	0.0000	54.7501	-3.7030	1844.6243	0.0000	617.5446	-0.1953
2022.1813	0.0000	-346.8578	-6.5106	1974.0867	0.0000	-353.5027	-11.6744	1803.1765	0.0000	61.9957	-3.9491	1848.2347	0.0000	644.8325	-0.1855
2038.7481	0.0000	-327.8409	-3.1744	1949.8579	0.0000	-347.9721	-10.8958	1803.2573	0.0000	68.3279	-4.1844	1851.8729	0.0000	672.2463	-0.1788
2049.6057	0.0000	-304.9917	-1.6114	1926.7783	0.0000	-338.7648	-11.9721	1803.3464	0.0000	73.9610	-4.3958	1855.6379	0.0000	700.7062	-0.1752
2056.3838	0.0000	-280.5974	-0.7409	1905.1016	0.0000	-326.6031	-13.2301	1803.3973	0.0000	77.4316	-4.5278	1859.4078	0.0000	729.1606	-0.1741
2060.5701	0.0000	-230.1777	-0.1706	1885.3511	0.0000	-311.5019	-14.1956	1803.3752	0.0000	78.9518	-4.5911	1863.1635	0.0000	757.5934	-0.1755
2060.5750	0.0000	-179.4784	-0.0269	1867.5233	0.0000	-294.1815	-14.5612	1803.3270	0.0000	83.3246	-4.7723	1866.8981	0.0000	785.9874	-0.1815
2060.5750	0.0000	-128.7791	0.0351	1851.8661	0.0000	-274.8658	-14.8805	1803.2985	0.0000	87.1083	-4.9284	1870.6176	0.0000	814.3262	-0.1913
2060.5750	0.0000	-78.0799	0.0635	1838.1334	0.0000	-254.0004	-15.6628	1803.2814	0.0000	90.3438	-5.0607	1874.3165	0.0000	842.5956	-0.2040
2060.5750	0.0000	23.3186	0.0825	1832.3103	0.0000	-243.3044	-14.8623	1803.2710	0.0000	93.0816	-5.1753	1878.0050	0.0000	870.8172	-0.2193
2060.5750	0.0000	124.7172	0.0829	1827.1224	0.0000	-232.2853	-14.4202	1803.2682	0.0000	93.9267	-5.2138	1881.6929	0.0000	899.0222	-0.2367
2059.7471	0.0000	226.1111	0.0788	1822.3449	0.0000	-221.0689	-13.9762	1803.2638	0.0000	95.3942	-5.2649	1884.6731	0.0000	921.7934	-0.2520
2057.2107	0.0000	327.4767	0.0702	1818.0684	0.0000	-209.6187	-13.6303	1803.2579	0.0000	97.9608	-5.3290	1887.0807	0.0000	940.1912	-0.2658
2052.9646	0.0000	428.7852	0.0611	1814.4703	0.0000	-197.9054	-13.1207	1803.2522	0.0000	101.4029	-5.4413	1889.0321	0.0000	955.0583	-0.2779
2046.9884	0.0000	530.0060	0.0507	1811.2362	0.0000	-186.0413	-12.4213	1803.2478	0.0000	104.9097	-5.7184	1890.6144	0.0000	967.0718	-0.2878
2039.3157	0.0000	631.1125	0.0412	1809.5553	0.0000	-178.4003	-12.0010	1803.2443	0.0000	108.4458	-5.9653	1891.8915	0.0000	976.7786	-0.2958
2029.9448	0.0000	732.0759	0.0321	1807.9462	0.0000	-170.7650	-11.5597	1803.2462	0.0000	141.8607	-5.9384	1892.9224	0.0000	984.6205	-0.3028
2019.2849	0.0000	832.9123	0.0244	1806.7513	0.0000	-163.1238	-11.0766	1803.2446	0.0000	174.9031	-5.0991	1893.7526	0.0000	990.9288	-0.3087
2008.5400	0.0000	933.7399	0.0164	1805.9170	0.0000	-157.3450	-10.6289	1803.2404	0.0000	207.6479	-3.7843	1893.8412	0.0000	991.6062	-0.3092
2003.1691	0.0000	984.1539	0.0127	1805.4371	0.0000	-154.0065	-10.4252	1803.2344	0.0000	240.1702	-2.5216	1893.9922	0.0000	992.7605	-0.3101
1997.7979	0.0000	1034.5679	0.0067	1805.1934	0.0000	-152.0668	-10.3594	1803.6599	0.0000	272.5403	-1.5108	1894.2518	0.0000	994.7350	-0.3118
1995.1119	0.0000	1059.7749	0.0040	1804.8495	0.0000	-149.3831	-10.2738	1805.1400	0.0000	304.8000	-0.5664	1894.5913	0.0000	997.3186	-0.3140
1992.4266	0.0000	1084.9818	0.0008	1804.6077	0.0000	-145.9166	-10.0401	1805.9076	0.0000	315.1391	-0.5363	1894.9313	0.0000	999.9036	-0.3163
1989.7398	0.0000	1110.1886	-0.0030	1804.2965	0.0000	-141.3919	-9.5708	1806.7179	0.0000	325.4695	-0.5092	1895.2719	0.0000	1002.4902	-0.3179
1987.0543	0.0000	1135.3958	-0.0070	1803.8972	0.0000	-135.4671	-9.0475	1807.9067	0.0000	335.7642	-0.4898	1897.7987	0.0000	1021.6669	-0.3371
1984.3690	0.0000	1160.6027	-0.0133	1803.5054	0.0000	-127.7393	-8.5429	1809.0957	0.0000	346.0582	-0.4727	1900.3235	0.0000	1040.8483	-0.3575
1981.6825	0.0000	1185.8096	-0.0315	1803.5158	0.0000	-121.8585	-8.1151	1810.2844	0.0000	356.3516	-0.4573	1902.8485	0.0000	1060.0330	-0.3777
1973.1416	0.0000	1209.0745	-0.0842	1803.4391	0.0000	-117.7305	-7.8164	1811.5966	0.0000	366.6291	-0.4431	1905.3716	0.0000	1079.2211	-0.3962
1950.7200	0.0000	1219.2000	-0.0443	1803.2168	0.0000	-104.8957	-6.9201	1812.4183	0.0000	373.0068	-0.4336	1907.8983	0.0000	1098.4102	-0.4129
				1803.1384	0.0000	-88.6779	-6.1036	1813.2460	0.0000	379.3875	-0.4235	1910.6137	0.0000	1117.6000	-0.4472
				1803.2634	0.0000	-73.7085	-5.5154	1814.0791	0.0000	385.7672	-0.4136	1912.5636	0.0000	1132.4122	-0.4167
				1803.3658	0.0000	-67.8528	-5.3285	1814.7197	0.0000	390.6420	-0.4067	1912.5636	0.0000	1132.4122	-0.4167
				1803.2288	0.0000	-59.9000	-5.0726	1815.0957	0.0000	393.4901	-0.4030	1914.5139	0.0000	1147.2244	-0.4402
				1803.1487	0.0000	-47.2370	-4.7124	1815.3163	0.0000	395.1558	-0.4009	1916.4650	0.0000	1162.0364	-0.4802
				1803.3656	0.0000	-35.6463	-4.4170	1815.6351	0.0000	397.5792	-0.3976	1918.4144	0.0000	1176.8488	-0.5402
				1803.3867	0.0000	-34.6661	-4.3959	1816.1630	0.0000	401.5817	-0.3918	1920.4301	0.0000	1191.6497	-0.7293
				1803.1696	0.0000	-24.5480	-4.1781	1816.9138	0.0000	407.2723	-0.3835	1925.3713	0.0000	1205.6169	-1.0847
				1803.1953	0.0000	-13.1133	-3.9745	1817.9459	0.0000	415.0888	-0.3724	1936.3644	0.0000	1215.5258	-0.3817
				1803.3782	0.0000	-3.0333	-3.8304	1819.3418	0.0000	425.6454	-0.3579	1950.7200	0.0000	1219.2000	-0.0443
				1803.3315	0.0000	-0.4188	-3.7949	1821.2263	0.0000	439.8526	-0.3396				
				1803.2085	0.0000	7.3584	-3.7030	1823.7804	0.0000	458.9724	-0.3167				
				1803.1550	0.0000	15.5293	-3.6167	1827.2789	0.0000	484.8329	-0.2889				
				1803.1683	0.0000	23.8594	-3.5245	1827.9824	0.0000	490.0230	-0.2838				
				1803.2524	0.0000	32.1256	-3.4504	1830.6386	0.0000	510.7940	-0.2648				
				1803.3953	0.0000	39.3589	-3.4577	1834.0289	0.0000	537.0038	-0.2431				
				1803.3804	0.0000	40.1177	-3.4605	1837.4987	0.0000	563.5469	-0.2243				
				1803.2217	0.0000	47.6397	-3.5347	1841.0403	0.0000	590.4336	-0.2083				

APPENDIX D

PROPELLER PRESSURE DISTRIBUTION

Averaged pressure distributions around the propeller blade at different spans for the full power (5056.6 kW) design condition at 25-knot craft speed and relative air speed of 9-knots is shown in the following figure and tabulations.



0% SPAN		10% SPAN		20% SPAN		30% SPAN	
Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)
184.768	-1.711	172.472	-1.325	160.028	-0.848	146.862	-0.538
179.111	-1.699	167.132	-1.346	155.219	-0.838	142.602	-0.500
172.101	-1.694	160.514	-1.371	149.260	-0.835	137.320	-0.469
163.414	-1.690	152.313	-1.384	141.871	-0.824	130.765	-0.429
152.658	-1.689	142.157	-1.385	132.705	-0.798	122.618	-0.362
139.373	-1.693	129.610	-1.385	121.370	-0.756	112.527	-0.269
123.005	-1.716	114.174	-1.403	107.415	-0.712	100.083	-0.164
102.933	-1.778	95.274	-1.454	90.328	-0.697	84.829	-0.068
83.147	-1.883	76.690	-1.543	73.540	-0.745	69.833	-0.032
63.667	-2.049	58.439	-1.720	57.081	-0.867	55.128	-0.053
44.457	-2.353	40.481	-2.114	40.937	-1.102	40.719	-0.125
25.395	-2.990	22.683	-2.863	24.990	-1.472	26.533	-0.238
6.217	-3.943	4.762	-3.648	9.083	-1.828	12.509	-0.384
-13.632	-4.759	-13.904	-3.821	-7.120	-1.911	-1.419	-0.511
-34.366	-5.223	-33.438	-3.587	-23.833	-1.877	-15.353	-0.652
-49.911	-5.228	-46.964	-3.468	-36.213	-1.929	-26.967	-0.785
-65.612	-5.194	-60.482	-3.580	-48.588	-2.098	-38.634	-0.881
-81.390	-5.028	-74.011	-3.882	-61.040	-2.397	-50.452	-1.032
-97.164	-4.819	-87.643	-4.111	-73.608	-2.757	-62.329	-1.354
-112.878	-4.575	-101.502	-3.968	-86.392	-2.918	-74.244	-1.785
-128.472	-3.917	-115.633	-3.485	-99.579	-2.758	-86.372	-2.043
-143.736	-3.168	-129.892	-2.784	-113.242	-2.303	-99.120	-1.908
-158.826	-2.482	-144.191	-1.720	-127.292	-1.336	-112.570	-1.083
-169.519	-1.678	-154.558	-0.489	-137.913	0.041	-123.098	0.318
-176.810	-0.860	-161.898	0.638	-145.811	1.541	-131.341	2.316
-181.696	-0.267	-166.977	1.422	-151.526	2.736	-137.621	4.159
-184.949	0.087	-170.444	1.818	-155.586	3.334	-142.266	5.064
-187.031	0.288	-172.708	1.951	-158.353	3.463	-145.525	5.173
-188.204	0.390	-174.196	1.938	-160.215	3.365	-147.721	4.900
-189.032	0.442	-175.210	1.855	-161.518	3.124	-149.212	4.314
-190.688	0.345	-178.028	1.076	-164.261	1.676	-151.397	1.635
-192.545	-0.034	-180.314	-0.590	-166.748	-1.104	-153.378	-2.575
-193.539	-0.823	-181.194	-3.028	-168.286	-4.770	-154.834	-7.420
-193.563	-2.122	-179.814	-5.588	-168.071	-8.253	-155.106	-11.582
-192.404	-3.513	-176.686	-7.686	-166.394	-10.425	-154.318	-13.700
-190.939	-4.554	-173.117	-9.109	-164.308	-11.636	-153.195	-14.434
-189.531	-5.327	-169.855	-9.801	-162.272	-12.266	-152.018	-14.778
-188.273	-5.882	-167.171	-10.077	-160.539	-12.346	-150.969	-14.670
-187.656	-6.095	-166.312	-10.154	-159.778	-12.274	-150.295	-14.564
-186.763	-6.334	-165.129	-10.300	-158.717	-12.298	-149.336	-14.527
-185.459	-6.644	-163.472	-10.544	-157.211	-12.492	-147.961	-14.624
-183.518	-7.008	-161.130	-10.846	-155.060	-12.836	-145.978	-14.858
-180.556	-7.361	-157.813	-11.192	-151.963	-13.317	-143.070	-15.230
-176.173	-7.752	-153.050	-11.539	-147.416	-13.823	-138.751	-15.651
-169.662	-8.248	-146.186	-11.798	-140.706	-14.097	-132.243	-15.806
-159.869	-8.666	-136.284	-12.019	-130.810	-14.109	-122.515	-15.530
-149.120	-8.938	-125.840	-12.407	-120.227	-14.246	-112.090	-15.352
-137.663	-9.039	-114.899	-12.882	-109.077	-14.519	-101.111	-15.389
-125.590	-9.119	-103.423	-13.249	-97.329	-14.777	-89.581	-15.526
-112.925	-9.168	-91.421	-13.204	-84.972	-14.609	-77.442	-15.360
-99.759	-9.120	-78.995	-12.822	-72.068	-13.920	-64.773	-14.648
-86.203	-9.084	-66.186	-12.285	-58.720	-13.028	-51.716	-13.748
-72.324	-9.088	-53.090	-11.682	-45.037	-12.078	-38.335	-12.904
-48.565	-8.623	-33.074	-10.103	-27.539	-10.616	-23.148	-11.949
-24.477	-8.112	-12.827	-8.575	-9.778	-9.394	-7.631	-11.086
-0.441	-7.128	7.542	-7.381	8.242	-8.412	8.253	-10.225
23.429	-6.296	28.006	-6.422	26.512	-7.376	24.492	-9.091
47.105	-5.763	48.513	-5.519	44.951	-6.242	41.015	-7.718
70.567	-5.290	69.022	-4.661	63.519	-5.163	57.773	-6.355
93.785	-4.754	89.508	-3.836	82.189	-4.167	74.731	-5.092
116.738	-4.135	109.950	-3.050	100.931	-3.228	91.842	-3.899
135.069	-3.586	126.403	-2.468	116.089	-2.512	105.727	-2.983
149.755	-3.099	139.654	-2.038	128.329	-1.965	116.960	-2.272
161.553	-2.690	150.334	-1.729	138.206	-1.559	126.027	-1.732
171.055	-2.361	158.949	-1.514	146.174	-1.266	133.339	-1.332
178.720	-2.100	165.898	-1.363	152.603	-1.050	139.240	-1.024
184.905	-1.893	171.505	-1.252	157.791	-0.875	144.003	-0.761
189.894	-1.747	176.028	-1.197	161.978	-0.762	147.846	-0.564
189.849	-1.713	176.086	-1.213	162.129	-0.802	148.040	-0.669
189.791	-1.689	176.163	-1.201	162.329	-0.780	148.294	-0.652
189.714	-1.662	176.265	-1.173	162.592	-0.748	148.629	-0.642
189.613	-1.681	176.400	-1.178	162.939	-0.769	149.071	-0.682
189.512	-1.749	176.535	-1.225	163.287	-0.824	149.513	-0.735
189.435	-1.796	176.639	-1.261	163.552	-0.885	149.849	-0.858
189.377	-1.815	176.718	-1.365	163.753	-1.091	150.104	-1.068
189.332	-1.807	176.778	-1.383	163.906	-0.978	150.298	-0.714

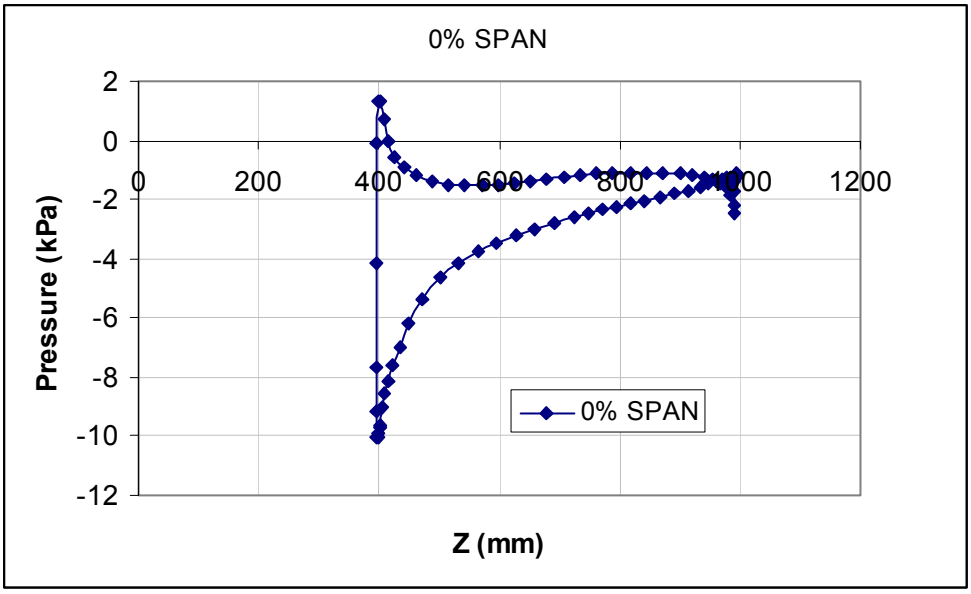
40% SPAN		50% SPAN		60% SPAN		70% SPAN	
Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)
133.363	-0.290	120.930	-0.089	110.507	0.060	102.413	0.144
129.596	-0.253	117.488	-0.058	107.253	0.097	99.318	0.178
124.924	-0.212	113.217	-0.012	103.213	0.157	95.471	0.258
119.120	-0.150	107.906	0.064	98.187	0.258	90.676	0.406
111.892	-0.045	101.283	0.199	91.915	0.443	84.685	0.678
102.918	0.100	93.046	0.407	84.115	0.747	77.227	1.115
91.823	0.269	82.828	0.676	74.406	1.163	67.923	1.698
78.185	0.442	70.223	0.974	62.398	1.625	56.412	2.338
64.746	0.574	57.780	1.226	50.561	2.007	45.074	2.865
51.538	0.669	45.533	1.438	38.944	2.322	33.975	3.286
38.570	0.729	33.508	1.606	27.578	2.574	23.155	3.613
25.837	0.757	21.742	1.720	16.508	2.754	12.666	3.854
13.335	0.738	10.259	1.778	5.763	2.863	2.530	4.015
1.069	0.669	-0.921	1.789	-4.611	2.917	-7.202	4.109
-10.970	0.557	-11.806	1.777	-14.627	2.950	-16.539	4.150
-22.035	0.460	-22.097	1.758	-23.974	2.947	-25.116	4.103
-33.040	0.410	-32.178	1.706	-33.050	2.838	-33.383	3.884
-44.066	0.296	-42.066	1.503	-41.831	2.504	-41.322	3.394
-55.008	-0.033	-51.708	1.050	-50.297	1.885	-48.940	2.601
-65.804	-0.604	-61.110	0.365	-58.490	1.093	-56.282	1.677
-76.575	-1.200	-70.396	-0.373	-66.540	0.309	-63.455	0.819
-87.779	-1.444	-79.910	-0.815	-74.756	-0.149	-70.749	0.346
-99.779	-0.881	-90.079	-0.459	-83.429	0.169	-78.395	0.684
-109.334	0.387	-98.207	0.655	-90.348	1.192	-84.458	1.639
-117.102	2.589	-104.915	2.724	-96.047	3.090	-89.426	3.443
-123.313	5.035	-110.435	5.422	-100.751	5.756	-93.487	6.014
-128.139	6.578	-114.912	7.573	-104.663	8.160	-96.896	8.494
-131.723	6.883	-118.454	8.268	-107.889	9.238	-99.772	9.909
-134.228	6.623	-121.106	8.158	-110.472	9.258	-102.175	10.148
-135.927	5.862	-122.969	7.467	-112.389	8.660	-104.095	9.667
-137.830	2.309	-124.626	3.899	-113.733	5.483	-105.370	7.072
-139.471	-3.441	-126.098	-3.275	-114.933	-2.745	-106.373	-1.613
-140.722	-9.670	-127.219	-11.019	-115.795	-11.639	-107.003	-10.985
-141.099	-14.740	-127.726	-17.062	-116.253	-18.665	-107.298	-19.058
-140.617	-16.893	-127.565	-18.965	-116.255	-20.772	-107.211	-22.104
-139.843	-17.069	-127.148	-18.471	-116.044	-19.691	-106.970	-20.841
-139.042	-16.930	-126.695	-17.800	-115.791	-18.492	-106.718	-19.289
-138.327	-16.615	-126.283	-17.210	-115.557	-17.462	-106.496	-18.013
-137.748	-16.508	-125.850	-17.144	-115.228	-17.352	-106.184	-17.823
-136.906	-16.488	-125.198	-17.237	-114.717	-17.436	-105.713	-17.837
-135.678	-16.557	-124.197	-17.458	-113.916	-17.707	-104.993	-18.056
-133.882	-16.678	-122.683	-17.711	-112.666	-18.069	-103.875	-18.420
-131.209	-16.815	-120.376	-17.891	-110.714	-18.392	-102.130	-18.818
-127.228	-16.926	-116.878	-17.913	-107.686	-18.530	-99.434	-19.111
-121.190	-16.819	-111.540	-17.663	-103.050	-18.391	-95.326	-19.227
-112.115	-16.331	-103.479	-17.115	-96.025	-18.052	-89.092	-19.207
-102.441	-15.993	-94.839	-16.765	-88.398	-17.880	-82.304	-19.266
-92.307	-15.973	-85.774	-16.758	-80.357	-17.978	-75.145	-19.526
-81.718	-16.203	-76.321	-17.090	-71.958	-18.409	-67.648	-20.098
-70.601	-16.368	-66.442	-17.579	-63.180	-19.095	-59.793	-20.952
-58.990	-16.161	-56.102	-17.962	-53.974	-19.849	-51.541	-21.951
-46.963	-15.671	-45.292	-18.066	-44.286	-20.425	-42.837	-22.873
-34.560	-15.081	-34.031	-17.858	-34.117	-20.641	-33.675	-23.513
-21.291	-14.388	-22.229	-17.365	-23.440	-20.464	-23.852	-23.761
-7.613	-13.610	-9.963	-16.628	-12.281	-19.923	-13.541	-23.551
6.483	-12.684	2.764	-15.633	-0.620	-18.996	-2.716	-22.791
21.005	-11.532	15.974	-14.374	11.555	-17.625	8.638	-21.383
35.910	-10.050	29.651	-12.841	24.249	-15.922	20.518	-19.424
51.145	-8.363	43.749	-10.913	37.423	-13.762	32.900	-16.986
66.662	-6.647	58.212	-8.743	51.016	-11.186	45.737	-14.011
82.398	-4.996	72.966	-6.557	64.956	-8.480	58.958	-10.758
95.213	-3.743	85.045	-4.868	76.432	-6.330	69.877	-8.103
105.598	-2.777	94.860	-3.542	85.789	-4.591	78.808	-5.919
113.984	-2.040	102.791	-2.523	93.358	-3.227	86.045	-4.165
120.746	-1.485	109.185	-1.754	99.461	-2.198	91.887	-2.810
126.203	-1.047	114.347	-1.149	104.389	-1.395	96.608	-1.742
130.610	-0.663	118.517	-0.612	108.372	-0.691	100.427	-0.824
134.167	-0.367	121.883	-0.194	111.588	-0.127	103.513	-0.054
134.343	-0.579	122.027	-0.602	111.710	-0.809	103.623	-1.079
134.575	-0.572	122.217	-0.602	111.870	-0.837	103.768	-1.164
134.881	-0.577	122.466	-0.609	112.081	-0.845	103.959	-1.180
135.283	-0.611	122.794	-0.637	112.359	-0.884	104.210	-1.253
135.685	-0.662	123.122	-0.710	112.636	-1.009	104.461	-1.450
135.991	-0.901	123.372	-1.086	112.847	-1.505	104.652	-2.098
136.223	-1.093	123.561	-1.249	113.008	-1.612	104.797	-2.202
136.399	-0.463	123.705	-0.256	113.129	-0.122	104.907	-0.041

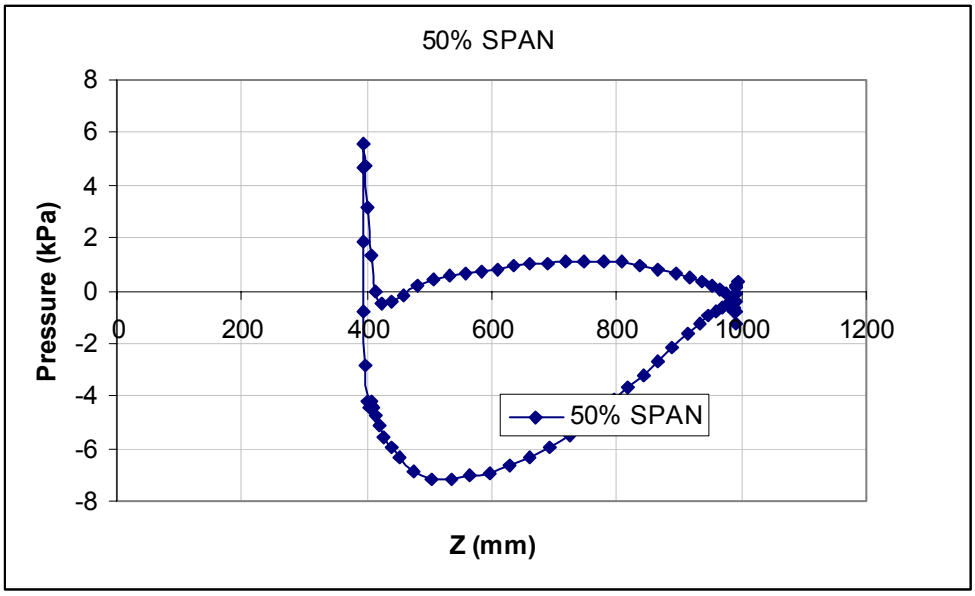
80% SPAN		90% SPAN		100% SPAN	
Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)
96.831	0.031	93.391	-0.267	91.815	1.746
93.872	0.077	90.666	-0.146	89.723	2.243
90.185	0.201	87.258	0.085	87.106	2.604
85.578	0.433	82.991	0.456	83.837	2.815
79.813	0.825	77.644	1.000	79.739	2.876
72.619	1.397	70.961	1.713	74.597	2.765
63.660	2.126	62.649	2.577	68.167	2.475
52.592	2.949	52.377	3.577	60.165	1.945
41.652	3.652	42.168	4.476	52.187	1.766
30.929	4.209	32.091	5.211	44.268	1.823
20.498	4.625	22.244	5.760	36.411	2.049
10.418	4.931	12.686	6.160	28.642	2.318
0.708	5.158	3.457	6.461	21.004	2.603
-8.602	5.307	-5.424	6.671	13.523	2.929
-17.509	5.354	-13.952	6.729	6.230	3.322
-25.578	5.229	-22.204	6.533	-4.597	2.684
-33.312	4.845	-30.090	5.983	-14.906	1.983
-40.709	4.143	-37.636	5.033	-24.690	0.853
-47.795	3.138	-44.860	3.726	-33.962	-0.555
-54.626	2.005	-51.817	2.270	-42.771	-1.980
-61.283	0.961	-58.591	0.860	-51.195	-3.082
-67.976	0.356	-65.278	-0.121	-59.336	-3.519
-74.968	0.659	-72.154	-0.092	-67.443	-3.055
-80.474	1.551	-77.533	0.661	-73.640	-1.890
-84.964	3.308	-81.862	2.316	-78.493	-0.325
-88.616	5.860	-85.394	5.013	-82.460	1.797
-91.665	8.483	-88.319	8.082	-85.705	4.406
-94.253	10.317	-90.789	10.644	-88.405	6.838
-96.454	10.959	-92.911	12.041	-90.758	8.590
-98.332	10.731	-94.822	12.329	-92.981	8.878
-99.535	9.381	-95.750	13.255	-93.840	10.167
-100.349	1.534	-96.336	7.527	-94.222	3.825
-100.820	-7.408	-96.678	-0.230	-94.297	-3.317
-101.000	-16.306	-96.810	-9.410	-94.050	-9.826
-100.851	-21.741	-96.715	-18.068	-93.595	-14.521
-100.599	-22.302	-96.545	-22.483	-93.160	-16.454
-100.358	-20.942	-96.373	-22.812	-92.792	-16.579
-100.150	-19.171	-96.223	-20.431	-92.494	-15.720
-99.847	-18.894	-95.934	-20.161	-92.100	-15.888
-99.390	-18.825	-95.489	-20.052	-91.525	-16.266
-98.698	-18.975	-94.800	-20.187	-90.683	-16.827
-97.636	-19.289	-93.747	-20.505	-89.449	-17.605
-95.996	-19.682	-92.138	-20.921	-87.646	-18.669
-93.489	-20.056	-89.673	-21.349	-84.992	-20.105
-89.659	-20.341	-85.885	-21.678	-81.099	-21.998
-83.851	-20.514	-80.192	-21.879	-75.410	-24.561
-77.577	-20.739	-74.102	-22.179	-69.417	-27.284
-70.960	-21.182	-67.685	-22.779	-63.170	-30.131
-64.011	-21.946	-60.938	-23.753	-56.658	-33.100
-56.721	-23.005	-53.864	-25.066	-49.867	-36.065
-49.063	-24.259	-46.442	-26.642	-42.781	-38.933
-40.994	-25.538	-38.645	-28.360	-35.388	-41.543
-32.503	-26.669	-30.448	-30.069	-27.668	-43.767
-23.265	-27.496	-21.556	-31.657	-18.967	-45.456
-13.540	-27.838	-12.209	-32.918	-9.853	-46.458
-3.310	-27.476	-2.386	-33.551	-0.315	-46.525
7.431	-26.198	7.902	-33.189	9.669	-45.443
18.667	-24.061	18.644	-31.604	20.060	-42.884
30.403	-21.214	29.862	-28.943	30.893	-38.972
42.615	-17.584	41.544	-24.907	42.134	-33.535
55.243	-13.450	53.635	-19.457	53.681	-27.162
65.666	-10.072	63.589	-14.353	63.156	-21.660
74.193	-7.394	71.712	-10.334	70.882	-17.199
81.113	-5.297	78.304	-7.438	77.159	-13.603
86.708	-3.658	83.638	-5.302	82.245	-10.638
91.238	-2.321	87.964	-3.567	86.375	-8.100
94.907	-1.151	91.477	-2.039	89.730	-5.830
97.880	-0.099	94.334	-0.566	92.455	-3.382
97.985	-1.611	94.431	-2.989	92.537	-7.701
98.123	-1.792	94.559	-3.332	92.645	-8.683
98.304	-1.807	94.728	-3.305	92.786	-9.303
98.543	-1.926	94.949	-3.456	92.973	-10.845
98.782	-2.218	95.171	-3.761	93.159	-13.039
98.963	-3.108	95.339	-4.895	93.301	-13.795
99.101	-3.282	95.467	-5.101	93.408	-9.751
99.206	-0.154	95.565	-0.502	93.490	0.901

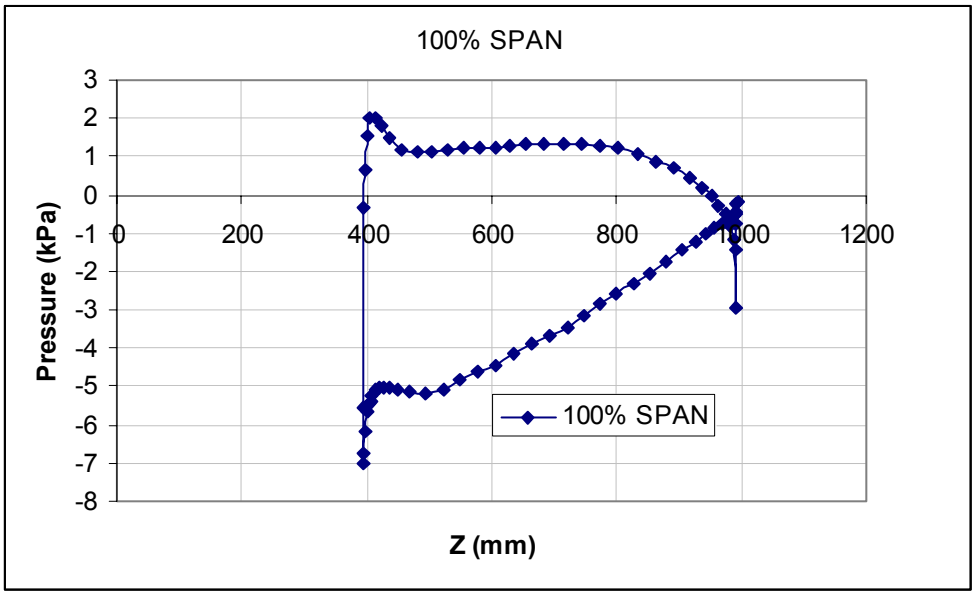
APPENDIX E

STATOR PRESSURE DISTRIBUTION

Averaged pressure distributions around the stator are shown below for different blade spans in the figures and tables below. The 0-percent span represents the hub intersection and the 100-percent span is the shroud intersection.






100% SPAN
Pressure (kPa)
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
0
200
400
600
800
1000
1200
Z (mm)
100% SPAN

0% SPAN		10% SPAN		20% SPAN		30% SPAN	
Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)
984.504	-1.271	984.511	-1.328	985.518	-0.948	984.543	-0.934
978.032	-1.249	978.146	-1.325	986.890	-0.957	978.244	-0.908
970.009	-1.284	970.257	-1.358	986.209	-0.868	970.439	-0.959
960.063	-1.365	960.476	-1.416	984.801	-0.851	960.765	-1.055
947.725	-1.471	948.348	-1.498	981.278	-0.893	948.772	-1.196
932.423	-1.582	933.303	-1.603	976.848	-0.869	933.901	-1.384
913.432	-1.694	914.635	-1.730	970.577	-0.926	915.453	-1.628
889.857	-1.819	891.460	-1.896	962.723	-0.997	892.552	-1.965
866.241	-1.940	868.244	-2.075	953.004	-1.161	869.609	-2.342
842.585	-2.051	844.985	-2.248	941.758	-1.282	846.620	-2.704
818.890	-2.145	821.677	-2.391	928.846	-1.478	823.569	-2.999
795.167	-2.241	798.330	-2.526	914.450	-1.624	800.466	-3.284
771.430	-2.350	774.961	-2.683	898.365	-2.019	777.332	-3.602
747.684	-2.471	751.580	-2.868	880.757	-2.218	754.171	-3.946
723.943	-2.579	728.196	-3.014	862.070	-2.432	730.999	-4.204
691.650	-2.778	695.922	-3.244	840.724	-2.684	698.421	-4.600
659.435	-2.989	663.712	-3.435	818.522	-2.928	665.895	-4.877
627.367	-3.225	631.659	-3.645	793.952	-3.211	633.528	-5.164
595.434	-3.491	599.735	-3.926	771.597	-3.442	601.303	-5.517
563.765	-3.764	568.065	-4.171	746.437	-3.704	569.349	-5.698
532.423	-4.127	536.766	-4.524	722.171	-3.925	537.814	-5.913
501.444	-4.637	505.809	-5.002	695.795	-4.182	506.662	-6.168
471.157	-5.396	475.518	-5.501	670.371	-4.403	476.251	-6.258
449.512	-6.210	453.904	-5.821	642.944	-4.665	454.592	-6.167
434.022	-6.996	438.391	-6.143	619.544	-4.841	439.060	-6.134
423.000	-7.600	427.320	-6.414	593.602	-5.051	427.982	-6.075
415.212	-8.112	419.416	-6.594	571.289	-5.184	420.063	-5.925
409.662	-8.574	413.803	-6.698	547.074	-5.321	414.453	-5.778
405.756	-9.037	409.771	-6.793	526.942	-5.429	410.399	-5.654
402.981	-9.645	406.914	-7.040	506.563	-5.544	407.537	-5.603
401.863	-9.676	405.359	-7.305	490.482	-5.621	405.956	-5.755
400.444	-9.895	403.361	-7.633	474.301	-5.691	403.911	-5.939
398.674	-10.042	400.890	-8.010	459.862	-5.775	401.364	-6.044
396.684	-10.027	397.932	-7.774	446.104	-5.849	398.302	-5.322
395.076	-9.181	395.634	-6.751	435.849	-5.963	395.875	-3.935
394.383	-7.670	394.448	-4.645	426.145	-5.966	394.531	-1.461
394.548	-4.160	394.549	-0.735	419.989	-5.824	394.437	2.363
395.123	-0.108	395.370	2.408	414.445	-5.361	395.140	4.425
397.288	1.310	397.644	2.923	409.573	-4.607	397.230	4.197
401.344	1.315	401.664	2.480	405.971	-3.716	401.117	3.278
407.209	0.742	407.417	1.343	403.642	-2.849	406.737	1.796
415.363	-0.026	415.390	0.319	402.193	-2.153	414.540	0.575
426.435	-0.574	426.207	-0.247	401.809	-1.807	425.119	0.007
441.390	-0.938	440.807	-0.562	402.286	-1.618	439.382	-0.165
461.570	-1.208	460.500	-0.768	404.005	-1.361	458.600	-0.182
488.870	-1.408	487.127	-0.913	406.947	-1.154	484.562	-0.134
516.080	-1.498	513.690	-0.977	411.665	-0.725	510.488	-0.071
543.247	-1.520	540.217	-0.989	418.646	-0.307	536.411	-0.022
570.414	-1.511	566.741	-0.953	427.468	-0.280	562.325	0.065
597.621	-1.515	593.350	-0.968	438.624	-0.247	588.386	0.077
624.779	-1.475	619.900	-0.964	451.523	0.074	614.385	0.080
651.966	-1.371	646.483	-0.850	466.611	0.357	640.449	0.209
679.230	-1.312	673.167	-0.799	483.241	0.213	666.614	0.276
706.666	-1.260	701.086	-0.763	501.956	0.092	695.077	0.305
734.171	-1.202	729.100	-0.720	522.026	0.005	723.636	0.334
761.696	-1.145	757.132	-0.678	544.211	-0.096	752.239	0.368
789.293	-1.099	785.246	-0.636	567.520	-0.158	780.928	0.400
816.945	-1.096	813.418	-0.649	592.635	-0.171	809.683	0.374
844.629	-1.111	841.630	-0.699	618.488	-0.166	838.482	0.270
872.321	-1.120	869.851	-0.741	645.624	-0.155	867.291	0.172
900.032	-1.140	898.090	-0.789	672.789	-0.150	896.113	0.081
922.394	-1.190	920.877	-0.866	700.265	-0.141	919.368	-0.037
940.434	-1.257	939.259	-0.973	727.779	-0.149	938.126	-0.182
954.983	-1.334	954.084	-1.091	754.818	-0.162	953.257	-0.330
966.715	-1.429	966.041	-1.228	781.258	-0.196	965.458	-0.484
976.178	-1.569	975.683	-1.414	806.693	-0.237	975.301	-0.671
983.811	-1.873	983.460	-1.772	831.124	-0.299	983.239	-0.987
989.808	-2.182	989.614	-2.039	854.206	-0.385	989.537	-1.263
990.515	-2.451	990.343	-2.069	876.001	-0.512	990.284	-1.304
991.449	-1.700	991.323	-1.542	895.941	-0.643	991.288	-0.749
992.491	-1.244	992.426	-1.306	913.793	-0.782	992.418	-0.492
993.072	-1.101	993.076	-1.221	929.822	-0.777	993.077	-0.378
992.304	-1.149	992.304	-1.248	943.770	-0.799	992.294	-0.516
991.228	-1.231	991.201	-1.293	955.825	-0.773	991.187	-0.744
990.289	-1.401	990.243	-1.371	965.584	-0.794	990.239	-1.079
989.608	-1.358	989.542	-1.355	973.398	-0.798	989.526	-0.975

40% SPAN		50% SPAN		60% SPAN		70% SPAN	
Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)
984.603	-0.749	984.633	-0.682	984.591	-0.673	984.541	-0.702
978.257	-0.698	978.160	-0.598	977.959	-0.561	977.780	-0.568
970.394	-0.753	970.142	-0.653	969.745	-0.616	969.410	-0.619
960.651	-0.867	960.207	-0.780	959.571	-0.752	959.043	-0.756
948.575	-1.039	947.895	-0.979	946.965	-0.968	946.203	-0.979
933.603	-1.271	932.634	-1.251	931.343	-1.270	930.294	-1.293
915.032	-1.578	913.707	-1.618	911.970	-1.688	910.569	-1.734
891.981	-2.011	890.217	-2.139	887.929	-2.286	886.093	-2.373
868.888	-2.495	866.682	-2.717	863.841	-2.940	861.568	-3.067
845.744	-2.958	843.090	-3.253	839.687	-3.524	836.971	-3.665
822.533	-3.336	819.419	-3.698	815.439	-4.017	812.263	-4.175
799.262	-3.699	795.685	-4.134	791.126	-4.524	787.485	-4.732
775.955	-4.113	771.905	-4.631	766.758	-5.099	762.647	-5.361
752.617	-4.561	748.091	-5.171	742.352	-5.694	737.764	-5.967
729.263	-4.877	724.259	-5.526	717.924	-6.089	712.853	-6.399
696.823	-5.318	692.282	-5.973	686.530	-6.549	681.917	-6.888
664.435	-5.619	660.363	-6.304	655.203	-6.913	651.054	-7.286
632.200	-5.931	628.586	-6.634	624.011	-7.267	620.324	-7.680
600.113	-6.269	596.970	-6.935	592.996	-7.537	589.781	-7.950
568.313	-6.398	565.658	-7.040	562.305	-7.639	559.585	-8.071
536.937	-6.561	534.761	-7.167	532.020	-7.760	529.790	-8.227
505.975	-6.712	504.315	-7.193	502.219	-7.681	500.506	-8.105
475.781	-6.603	474.651	-6.874	473.221	-7.191	472.056	-7.529
454.305	-6.305	453.581	-6.363	452.641	-6.511	451.870	-6.764
438.912	-6.091	438.486	-5.962	437.910	-5.954	437.439	-6.115
427.937	-5.869	427.726	-5.566	427.409	-5.414	427.150	-5.490
420.090	-5.572	420.030	-5.114	419.894	-4.836	419.785	-4.833
414.534	-5.303	414.582	-4.724	414.575	-4.348	414.572	-4.275
410.514	-5.082	410.636	-4.435	410.722	-4.000	410.795	-3.872
407.678	-4.938	407.849	-4.242	407.993	-3.755	408.113	-3.570
406.098	-5.042	406.265	-4.332	406.409	-3.807	406.528	-3.560
404.051	-5.197	404.210	-4.428	404.350	-3.813	404.463	-3.535
401.494	-5.170	401.633	-4.173	401.762	-3.361	401.865	-3.049
398.417	-4.184	398.531	-2.825	398.641	-1.775	398.723	-1.387
395.957	-2.530	396.032	-0.796	396.108	0.532	396.161	1.124
394.571	0.047	394.609	1.821	394.653	3.173	394.682	3.875
394.398	3.502	394.370	4.673	394.342	5.618	394.320	6.236
395.043	4.979	394.970	5.575	394.887	6.209	394.832	6.678
397.056	4.436	396.918	4.736	396.761	5.160	396.658	5.492
400.889	3.227	400.704	3.167	400.498	3.262	400.359	3.403
406.467	1.595	406.243	1.302	406.003	1.123	405.835	1.073
414.214	0.340	413.942	-0.039	413.661	-0.389	413.456	-0.618
424.715	-0.193	424.373	-0.511	424.032	-0.851	423.772	-1.136
438.865	-0.240	438.420	-0.428	437.991	-0.668	437.649	-0.899
457.919	-0.126	457.325	-0.160	456.766	-0.253	456.300	-0.363
483.652	0.047	482.850	0.165	482.109	0.237	481.472	0.279
509.360	0.188	508.362	0.398	507.448	0.572	506.651	0.711
535.082	0.282	533.899	0.538	532.824	0.759	531.875	0.941
560.802	0.397	559.449	0.681	558.230	0.925	557.147	1.124
586.680	0.434	585.163	0.743	583.805	1.009	582.594	1.224
612.517	0.451	610.858	0.777	609.383	1.057	608.064	1.282
638.424	0.586	636.628	0.917	635.039	1.202	633.616	1.430
664.437	0.665	662.508	1.009	660.811	1.309	659.290	1.548
693.077	0.698	691.304	1.047	689.752	1.352	688.367	1.597
721.816	0.725	720.202	1.073	718.796	1.375	717.551	1.616
750.611	0.756	749.166	1.102	747.915	1.399	746.816	1.634
779.491	0.785	778.215	1.125	777.118	1.415	776.163	1.641
808.438	0.750	807.330	1.080	806.386	1.359	805.572	1.575
837.429	0.628	836.488	0.938	835.694	1.200	835.016	1.399
866.430	0.508	865.657	0.795	865.012	1.031	864.470	1.204
895.442	0.399	894.833	0.664	894.336	0.874	893.926	1.018
918.850	0.267	918.373	0.515	917.994	0.702	917.690	0.819
937.730	0.112	937.362	0.345	937.079	0.511	936.862	0.603
952.961	-0.039	952.680	0.184	952.478	0.333	952.332	0.403
965.245	-0.188	965.037	0.032	964.901	0.170	964.816	0.222
975.155	-0.358	975.006	-0.130	974.924	0.006	974.889	0.048
983.148	-0.635	983.048	-0.387	983.011	-0.261	983.018	-0.250
989.494	-0.906	989.441	-0.651	989.440	-0.511	989.475	-0.494
990.244	-0.959	990.191	-0.785	990.191	-0.796	990.227	-1.028
991.251	-0.365	991.200	-0.106	991.197	0.036	991.226	0.037
992.390	-0.083	992.349	0.221	992.344	0.439	992.363	0.568
993.080	0.040	993.083	0.362	993.085	0.593	993.087	0.746
992.336	-0.159	992.395	0.116	992.423	0.286	992.430	0.353
991.251	-0.503	991.338	-0.389	991.388	-0.418	991.411	-0.574
990.309	-1.043	990.406	-1.241	990.467	-1.632	990.503	-2.136
989.612	-0.814	989.728	-0.777	989.804	-0.800	989.851	-0.856

80% SPAN		90% SPAN		100% SPAN	
Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)	Z (mm)	Pressure (kPa)
984.609	-0.819	984.624	-1.111	984.010	-0.621
977.784	-0.650	977.728	-0.889	976.791	-0.676
969.337	-0.682	969.196	-0.870	967.860	-0.766
958.878	-0.804	958.634	-0.936	956.806	-0.879
945.926	-1.011	945.558	-1.075	943.124	-1.020
929.883	-1.306	929.363	-1.284	926.176	-1.201
909.996	-1.719	909.290	-1.582	905.170	-1.436
885.320	-2.320	884.382	-2.023	879.096	-1.743
860.594	-2.972	859.419	-2.500	852.945	-2.047
835.792	-3.524	834.369	-2.883	826.666	-2.319
810.862	-3.991	809.177	-3.207	800.238	-2.578
785.856	-4.522	783.897	-3.597	773.700	-2.864
760.781	-5.137	758.534	-4.063	747.062	-3.178
735.654	-5.721	733.108	-4.489	720.349	-3.442
710.490	-6.146	707.634	-4.791	693.583	-3.666
679.766	-6.631	677.193	-5.162	664.511	-3.897
649.114	-7.069	646.818	-5.574	635.522	-4.161
618.590	-7.522	616.563	-6.071	606.646	-4.465
588.259	-7.823	586.503	-6.412	577.980	-4.631
558.291	-8.010	556.818	-6.722	549.725	-4.817
528.723	-8.251	527.528	-7.143	521.806	-5.078
499.691	-8.176	498.795	-7.314	494.488	-5.171
471.518	-7.633	470.940	-7.140	468.047	-5.140
451.543	-6.889	451.199	-6.718	449.283	-5.067
437.272	-6.237	437.106	-6.276	435.897	-5.039
427.098	-5.591	427.059	-5.783	426.350	-5.042
419.814	-4.901	419.865	-5.224	419.507	-5.048
414.660	-4.315	414.773	-4.783	414.663	-5.084
410.926	-3.908	411.084	-4.541	411.150	-5.162
408.266	-3.622	408.451	-4.396	408.636	-5.258
406.663	-3.629	406.820	-4.585	407.007	-5.418
404.571	-3.734	404.695	-4.655	404.888	-5.449
401.934	-3.337	402.006	-4.021	402.188	-5.634
398.746	-1.497	398.759	-1.734	398.933	-6.151
396.147	1.389	396.117	1.271	396.245	-6.769
394.656	4.296	394.614	3.882	394.697	-7.002
394.320	6.561	394.327	6.039	394.288	-5.575
394.881	6.703	394.965	6.362	394.821	-0.341
396.746	5.380	396.898	5.166	396.643	0.632
400.451	3.281	400.620	3.219	400.311	1.546
405.905	0.967	406.058	1.039	405.730	1.991
413.486	-0.768	413.603	-0.692	413.260	2.031
423.740	-1.337	423.798	-1.325	423.431	1.820
437.524	-1.086	437.495	-1.117	437.090	1.490
456.043	-0.459	455.887	-0.469	455.413	1.196
481.029	0.300	480.698	0.321	480.123	1.104
506.031	0.816	505.531	0.861	504.856	1.146
531.089	1.080	530.430	1.124	529.665	1.178
556.210	1.273	555.406	1.298	554.564	1.216
581.514	1.381	580.570	1.385	579.655	1.228
606.857	1.443	605.790	1.424	604.815	1.233
632.288	1.588	631.103	1.539	630.071	1.280
657.846	1.711	656.541	1.644	655.450	1.323
687.053	1.758	685.880	1.680	684.900	1.334
716.372	1.774	715.331	1.685	714.459	1.331
745.775	1.785	744.866	1.686	744.097	1.321
775.257	1.782	774.472	1.674	773.795	1.294
804.795	1.704	804.126	1.591	803.525	1.215
834.362	1.510	833.797	1.393	833.257	1.066
863.936	1.290	863.469	1.166	862.978	0.889
893.508	1.075	893.130	0.938	892.676	0.687
917.364	0.849	917.054	0.692	916.623	0.458
936.612	0.606	936.356	0.423	935.941	0.208
952.145	0.379	951.934	0.165	951.530	-0.041
964.681	0.174	964.507	-0.073	964.112	-0.281
974.798	-0.019	974.655	-0.301	974.269	-0.516
982.963	-0.350	982.846	-0.689	982.467	-0.812
989.454	-0.624	989.369	-1.032	989.033	-1.171
990.205	-1.569	990.126	-2.732	989.843	-2.959
991.200	-0.173	991.131	-0.757	990.935	-1.411
992.339	0.561	992.292	0.265	992.207	-0.474
993.089	0.813	993.090	0.574	993.093	-0.168
992.475	0.318	992.513	-0.045	992.438	-0.251
991.484	-0.846	991.535	-1.459	991.365	-0.459
990.595	-2.716	990.657	-3.551	990.441	-0.779
989.954	-0.997	990.015	-1.332	989.723	-0.551

APPENDIX F

SHROUD OFFSETS

The inner and outer surface points for generating the shroud are shown in the table below. The length along the shroud is shown as overall length and as length from the centerline of the propeller, which is located 355.6 mm (14 inches) behind the shroud leading edge. The inner and outer surfaces of the shroud use the leading and trailing edge points of the shroud as the dividing points. All dimensions are in millimeters.

Overall Shroud Length	Length from Prop Centerline	Shroud Inner Radius	Shroud Outer R Radius
0.0000	-355.6000	1998.8530	1998.8530
1.1287	-354.4713	1979.7689	2007.4116
3.9304	-351.6696	1963.3468	2014.7273
8.1546	-347.4454	1947.9410	2021.5071
13.6865	-341.9135	1933.2895	2027.8398
20.4518	-335.1482	1919.3003	2033.7378
28.3960	-327.2040	1905.9420	2039.1854
37.4767	-318.1233	1893.2120	2044.1513
47.6592	-307.9408	1881.1245	2048.5926
58.9144	-296.6856	1869.7050	2052.4558
71.2172	-284.3828	1858.9874	2055.6752
84.5457	-271.0543	1849.0128	2058.1705
98.8806	-256.7194	1839.8296	2059.8415
114.2044	-241.3956	1831.4931	2060.5593
130.5015	-225.0985	1824.0667	2060.5750
147.7574	-207.8426	1817.6231	2060.5750
165.9590	-189.6410	1812.2460	2060.5750
185.0943	-170.5057	1808.0327	2060.5750
205.1519	-150.4481	1805.0979	2060.5750
226.1213	-129.4787	1803.5787	2060.5750
247.9927	-107.6073	1803.4000	2060.5750
270.7570	-84.8430	1803.4000	2060.5750
294.4054	-61.1946	1803.4000	2060.5750
318.9298	-36.6702	1803.4000	2060.5750
344.3223	-11.2777	1803.4000	2060.5750
355.6000	0.0000	1803.4000	2060.5750
370.5757	14.9757	1803.4000	2060.5750
397.6829	42.0829	1803.4000	2060.5750
425.6373	70.0373	1803.4000	2060.5750
454.4325	98.8325	1803.4000	2060.5750
484.0624	128.4624	1803.4000	2060.5748
514.5211	158.9211	1803.4000	2060.4900
545.8031	190.2031	1803.4000	2060.2417
577.9029	222.3029	1803.4000	2059.8172
610.8155	255.2155	1803.4010	2059.2034
644.5357	288.9357	1804.2121	2058.3869
679.0589	323.4589	1806.6152	2057.3542
714.3802	358.7802	1810.7067	2056.0915
750.4954	394.8954	1815.4616	2054.5846
787.4000	431.8000	1820.3205	2052.8194
824.3046	468.7046	1825.1794	2050.8260
860.4198	504.8198	1829.9343	2048.6542
895.7411	540.1411	1834.5848	2046.3183
930.2643	574.6643	1839.1301	2043.8326
963.9845	608.3845	1843.5697	2041.2111
996.8971	641.2971	1847.9030	2038.4677
1028.9969	673.3969	1852.1293	2035.6160
1060.2789	704.6789	1856.2479	2032.6694
1090.7376	735.1376	1860.2581	2029.6413
1120.3675	764.7675	1864.1592	2026.5454
1149.1627	793.5627	1867.9504	2023.4772
1177.1171	821.5171	1871.6309	2020.4987
1204.2243	848.6243	1875.1998	2017.6103
1230.4777	874.8777	1878.6563	2014.8130
1255.8702	900.2702	1881.9995	2012.1074
1280.3946	924.7946	1885.2284	2009.4942
1304.0430	948.4430	1888.3420	2006.9745
1326.8073	971.2073	1891.3391	2004.5489
1348.6787	993.0787	1894.2187	2002.2185
1369.6481	1014.0481	1896.9796	1999.9841
1389.7057	1034.1057	1899.6204	1997.8470
1408.8410	1053.2410	1902.1397	1995.8081
1427.0426	1071.4426	1904.5362	1993.8686
1444.2985	1088.6985	1906.8081	1992.0300
1460.5956	1104.9956	1908.9538	1990.2935
1475.9194	1120.3194	1910.9713	1988.6607
1490.2543	1134.6543	1912.8586	1987.1333
1503.5828	1147.9828	1914.6135	1985.7132
1515.8856	1160.2856	1916.2333	1984.4023
1527.1408	1171.5408	1917.7151	1983.2030
1537.3233	1181.7233	1919.0558	1982.1180
1546.4040	1190.8040	1920.2513	1981.1505
1554.3482	1198.7482	1921.9369	1979.5031
1561.1135	1205.5135	1925.2836	1976.1564
1566.6454	1211.0454	1929.9689	1971.4711
1570.8696	1215.2696	1935.7484	1965.6916
1573.6713	1218.0713	1942.5022	1958.9378
1574.8000	1219.2000	1950.7200	1950.7200

APPENDIX G

PROP/STATOR HUB OFFSETS

The surface points for the prop/stator hub are shown in the table below. The length along the hub is shown from the centerline of the propeller, which is located 355.6 mm (14 inches) behind the shroud leading edge. There is a straight section of hub extending 355.6 mm (10 inches) forward and aft of the centerline of the propeller. The shape of the hub region forward of the propeller hub straight section is a faired surface that will mate to the propeller shaft and will be refined later. The shape of the hub aft of the prop is defined in the table below since this shape must match the defined stator 0% span section. All dimensions are in millimeters.

Hub Length from Prop Centerline	Hub Section Radius
-254.0000	338.0740
0.0000	338.0740
254.0000	338.0740
288.9357	337.9614
323.4589	337.6289
358.7802	337.0602
394.8954	336.2386
431.8000	335.1465
468.7046	333.7966
504.8198	332.2228
540.1411	330.4385
574.6643	328.4564
608.3845	326.2889
641.2971	323.9485
673.3969	321.4472
704.6789	318.7969
735.1376	316.0096
764.7675	313.0971
793.5627	310.0714
821.5171	306.9444
848.6243	303.7284
874.8777	300.4355
900.2702	297.0783
924.7946	293.6696
948.4430	290.2224
971.2073	286.7502
993.0787	283.2666
1014.0481	279.7859
1034.1057	276.3228
1053.2410	272.8923
1071.4426	269.5101
1088.6985	266.1923
1104.9956	262.9556
1120.3194	259.8173
1134.6543	256.7953
1147.9828	253.9078
1160.2856	251.1740
1171.5408	248.6134
1181.7233	246.2463
1190.8040	244.0937
1198.7482	242.1773
1205.5135	240.5204
1211.0454	239.1482
1215.2696	238.0896
1218.0713	237.3823
1219.2000	237.0962
1220.4266	236.7845
1224.8359	235.6573
1232.9518	233.5548
1245.0956	230.3396
1261.5085	225.8569
1282.3868	219.9122
1307.8971	212.2492
1338.1849	202.5155
1373.3797	190.2040
1413.5989	174.5374
1453.8181	156.6759
1489.0129	138.5819
1519.3007	120.3486
1544.8110	102.0714
1565.6893	83.8518
1582.1022	65.8028
1594.2460	48.0610
1602.3619	30.8138
1606.7712	14.3869
1607.9978	0.0000