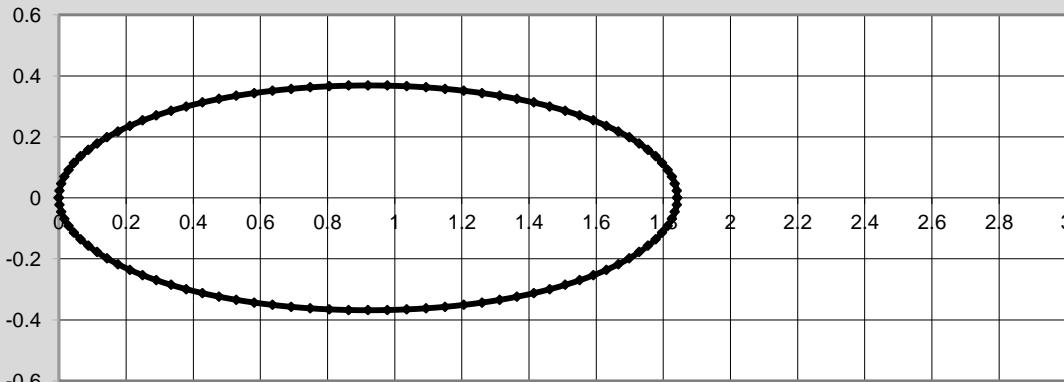


Airship Envelope Datasheet																							
Identifier:	4 - Gore Elliptical Balloon	Date of Design:	2024-05-30																				
Designed by:	Xi Yu	Date of Production:																					
Organisation:	West Virginia University	Place of Production:	Windreiter HQ																				
																							
<table border="1"> <thead> <tr> <th colspan="2">Material Parameter</th><th colspan="2">Gertler Shape Coefficients</th></tr> </thead> <tbody> <tr> <td>Envelope Material:</td><td>TritaX Silver</td><td>Position of max. thickness:</td><td>0.5</td></tr> <tr> <td>Surface Weight [g/m²]:</td><td>30</td><td>Bow Radius:</td><td>0.5</td></tr> <tr> <td>Tension Strength [MPa]:</td><td>245</td><td>Stern Radius:</td><td>0.5</td></tr> <tr> <td>Bonding Technique:</td><td>Point Welding</td><td>Prismatic Coefficient:</td><td>0.67</td></tr> </tbody> </table>				Material Parameter		Gertler Shape Coefficients		Envelope Material:	TritaX Silver	Position of max. thickness:	0.5	Surface Weight [g/m²]:	30	Bow Radius:	0.5	Tension Strength [MPa]:	245	Stern Radius:	0.5	Bonding Technique:	Point Welding	Prismatic Coefficient:	0.67
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Design Parameter		Lift Assumptions*																					
Length to Diameter:	2.500	Lift at Sea Level He [g]:	417.30																				
Block Volume [m³]:	1.000	Lift at 300 m Helium [g]:	402.01																				
Block Coefficient:	0.526	Lift at Sea Level H2 [g]:	449.70																				
Envelope Volume [l]:	526.22	Lift at 300 m H2 [g]:	433.22																				
Length [m]:	1.84	*The calculations assume pure lifting gas																					
Diameter [m]:	0.74																						
Surface Area [m²]:	3.63																						
Envelope Weight [g]:	108.91																						
Number of gores	4																						

Gertler 4621 Shape spreadsheet. Computes shape, volume, centre of volume, and pattern for a Series58 Model 4621 body of revolution. Copyright (C) 2019 Johannes Eissing

Balloon Handling Notes

Fill the balloon until wrinkles start to dissapear.

Seal the balloon with the clip after folding the tube multiple times.

Store the balloon either filled or relase all lifting gas.

Use a vacuum cleaner to fully remove all gas.

Fold the balloon carefully flat as it was shipped.

This ensures a long lifetime of the material.