

X	Y	Z	$\alpha/2$	Z index	index $\alpha/2$	R	R-x	index length
cm	cm	cm	radial	cm	radial	cm	cm	cm
depth	half breadth	length						
17.90	15.00	120.00	0.57	10.00	0.01	111.19	93.29	10.00

ZY equals half triangle with y = 15 cm  
 XY equals half triangle with x = 17.90 cm at bow and 0cm at stern  
 XY area equals area of half ellipse ( $\pi/2 \times X \times Y$ )  
 Z equals 0+Zindex  
 Y equals  $Y^2 \text{ upto } 120^2 / 1/2$   
 X equals  $x^2 \text{ upto } (1 - (Y^2/15^2))$

ZY equals half triangle with y = 15 cm  
 XY equals circle segment with cord equal to the length of the hull  
 XY area equals area of half ellipse ( $\pi/2 \times X \times Y$ ) mapped on the circle segment

Z	Y	X	opp XY half ellipse area	Simpson	product
0.00	0.00	17.90	0.00	1.00	0.00
10.00	1.25	17.94	35.02	4.00	140.10
20.00	2.50	17.95	69.31	2.00	138.62
30.00	3.75	17.33	102.09	4.00	408.37
40.00	5.00	16.88	132.65	2.00	265.08
50.00	6.25	16.27	159.78	4.00	639.01
60.00	7.50	15.50	182.63	2.00	365.25
70.00	8.75	14.54	199.83	4.00	799.32
80.00	10.00	13.34	209.57	2.00	419.15
90.00	11.25	11.94	209.28	4.00	836.90
100.00	12.50	9.89	194.28	2.00	388.56
110.00	13.75	7.15	154.51	4.00	618.04
120.00	15.00	0.00	0.00	1.00	0.00
					5018.41
					16728.03 cm <sup>3</sup>

Z	Y	X	opp XY half ellipse area	Simpson	product
0.00	0.00	0.32	0.00	1.00	0.00
10.00	1.25	6.02	11.83	4.00	47.31
20.00	2.50	10.46	41.08	2.00	82.12
30.00	3.75	13.78	81.19	4.00	324.60
40.00	5.00	16.09	126.34	2.00	252.69
50.00	6.25	17.45	171.51	4.00	688.24
60.00	7.50	17.90	210.88	2.00	421.76
70.00	8.75	17.45	239.83	4.00	959.33
80.00	10.00	16.09	252.69	2.00	505.37
90.00	11.25	13.78	243.45	4.00	973.79
100.00	12.50	10.46	205.30	2.00	410.59
110.00	13.75	6.02	130.10	4.00	520.38
120.00	15.00	0.32	7.57	1.00	7.57
					5190.74
					17302.47 cm <sup>3</sup>

$\alpha/2$	R	$R^2(1-\cos(\alpha/2))$
0.10	601.00	3.00
0.11	546.56	3.30
0.12	501.20	3.60
0.13	462.84	3.91
0.14	429.97	4.21
0.15	401.50	4.51
0.16	376.60	4.81
0.17	354.66	5.11
0.18	335.14	5.41
0.19	317.70	5.72
0.20	302.01	6.02
0.21	287.83	6.33
0.22	274.94	6.63
0.23	263.18	6.93
0.24	252.42	7.23
0.25	242.52	7.54
0.26	233.39	7.84
0.27	224.95	8.15
0.28	217.11	8.46
0.29	209.63	8.76
0.30	203.03	9.07
0.31	196.68	9.38
0.32	190.74	9.68
0.33	185.16	9.99
0.34	179.92	10.30
0.35	174.98	10.61
0.36	170.32	10.92
0.37	165.92	11.23
0.38	161.78	11.54
0.39	157.82	11.85
0.40	154.08	12.16
0.41	150.52	12.48
0.42	147.15	12.79
0.43	143.93	13.10
0.44	140.87	13.42
0.45	137.94	13.73
0.46	135.15	14.05
0.47	132.48	14.37
0.48	129.93	14.68
0.49	127.49	15.00
0.50	125.15	15.32
0.51	122.91	15.64
0.52	120.75	15.96
0.53	118.69	16.28
0.54	116.70	16.61
0.55	114.78	16.93
0.56	112.95	17.25
0.57	111.19	17.58
0.58	109.49	17.90
0.59	107.84	18.23
0.60	106.26	18.56
0.61	104.74	18.89
0.62	103.28	19.22
0.63	101.84	19.55
0.64	100.47	19.88
0.65	99.14	20.22
0.66	97.86	20.55
0.67	96.62	20.89
0.68	95.42	21.22
0.69	94.26	21.56
0.70	93.14	21.90
0.71	92.05	22.24
0.72	90.99	22.58
0.73	89.97	22.93
0.74	88.98	23.27
0.75	88.02	23.62
0.76	87.09	23.96
0.77	86.19	24.31
0.78	85.31	24.66
0.79	84.47	25.01
0.80	83.64	25.37
0.81	82.84	25.72
0.82	82.06	26.08
0.83	81.31	26.44
0.84	80.58	26.79
0.85	79.86	27.15
0.86	79.17	27.52
0.87	78.50	27.88
0.88	77.85	28.25
0.89	77.21	28.61
0.90	76.60	28.98
0.91	76.00	29.35
0.92	75.41	29.73
0.93	74.85	30.10
0.94	74.30	30.48
0.95	73.76	30.86
0.96	73.24	31.24
0.97	72.74	31.62
0.98	72.25	32.00
0.99	71.77	32.39
1.00	71.30	32.78
1.01	70.85	33.17
1.02	70.41	33.56
1.03	69.99	33.96
1.04	69.57	34.35
1.05	69.17	34.75
1.06	68.78	35.15
1.07	68.40	35.56
1.08	68.03	35.97
1.09	67.67	36.37
1.10	67.32	36.79

length	$\alpha/2$	$R^2 \cos \alpha/2$	R-x	t
60.00	0.5700	93.61	93.29	0.32
50.00	0.4664	99.31	93.29	6.02
40.00	0.3880	103.74	93.29	10.46
30.00	0.2732	107.06	93.29	13.78
20.00	0.1808	109.37	93.29	16.09
10.00	0.0901	110.74	93.29	17.45
0.00	0.0000	111.19	93.29	17.90