

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: LUMARK

Report Number: P196023

Luminaire Tested: **NAV-AF-03-D-UNV-AFL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196023
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24160)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-03-D-UNV-AFL
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18986 lumens
Efficiency: N/A
Efficacy: 114.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B2 - U0 - G2

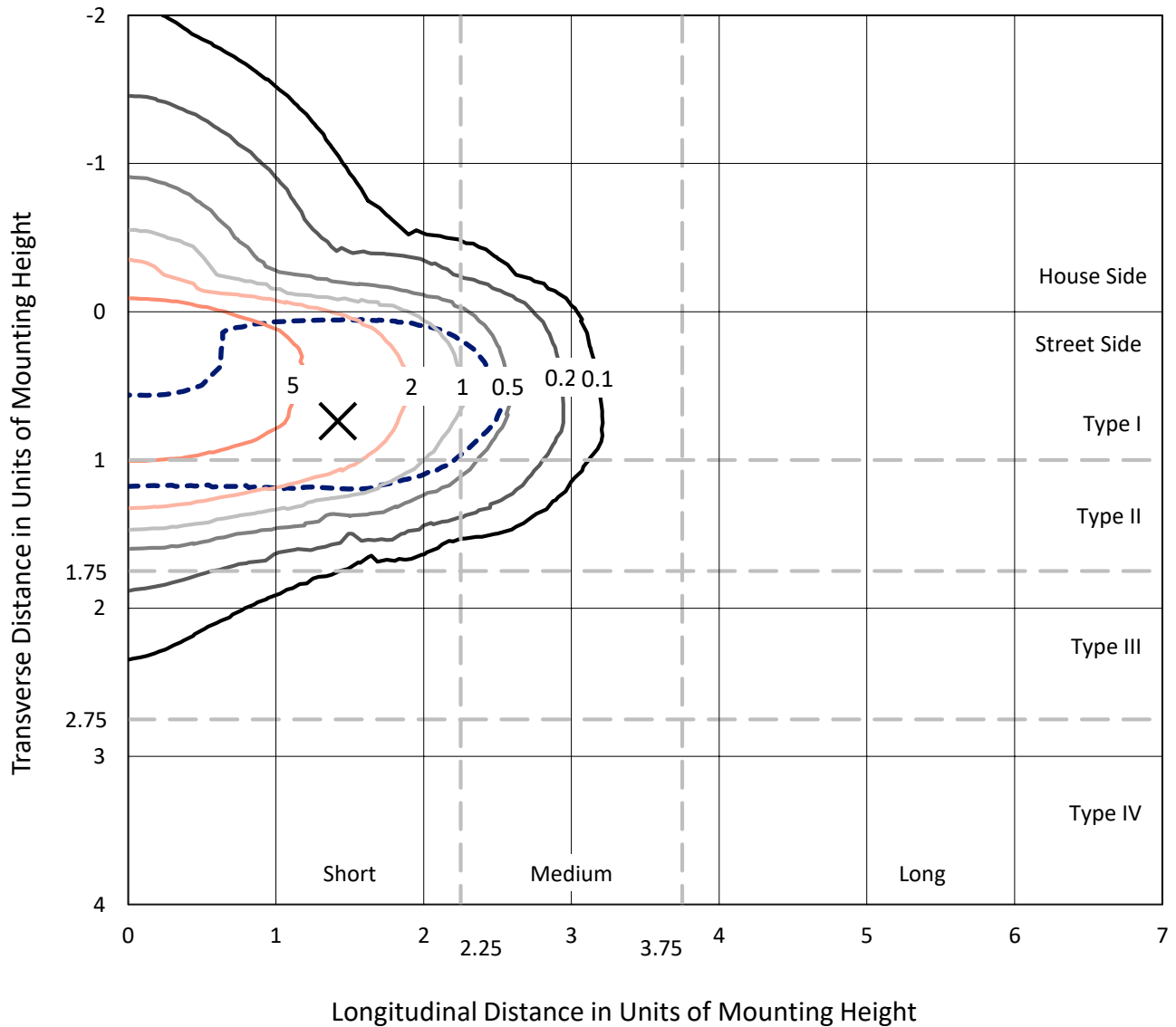
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

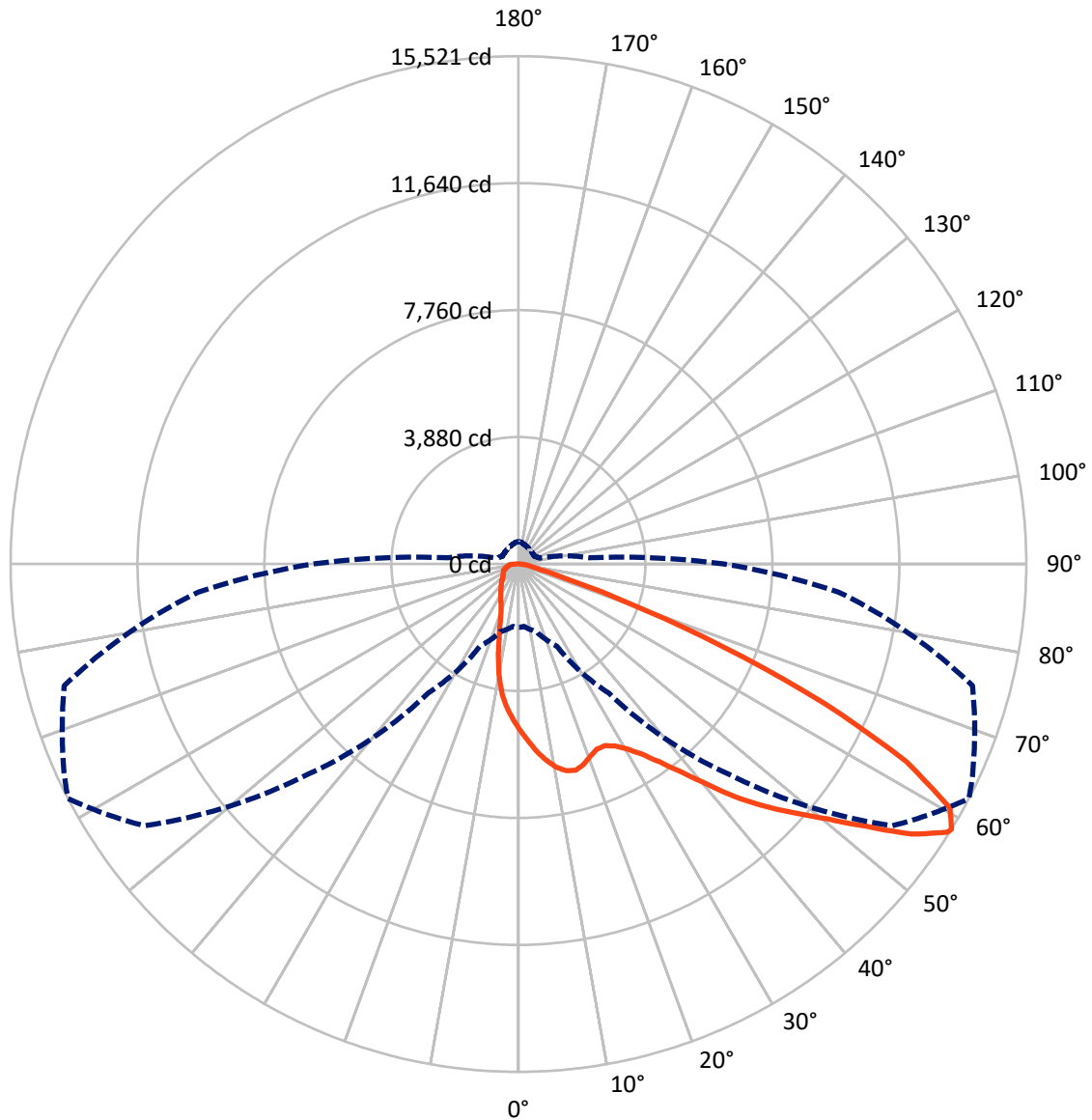
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.5 fc
 Type II - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 62.5-Deg Lateral - - - Horizontal Cone Through 58-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2915.1	0.0	2915.1
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	16070.9	0.0	16070.9
	% Fixture	84.6	0.0	84.6
Total	Lumens	18986.0	0.0	18986.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	453.1	2.4
10°-20°	1143.5	6.0
20°-30°	1853.2	9.8
30°-40°	2958.8	15.6
40°-50°	4303.6	22.7
50°-60°	4503.3	23.7
60°-70°	2745.4	14.5
70°-80°	767.8	4.0
80°-90°	257.4	1.4
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	18986.0	100.0
0°-180°	18986.0	100.0

Coefficient of Utilization



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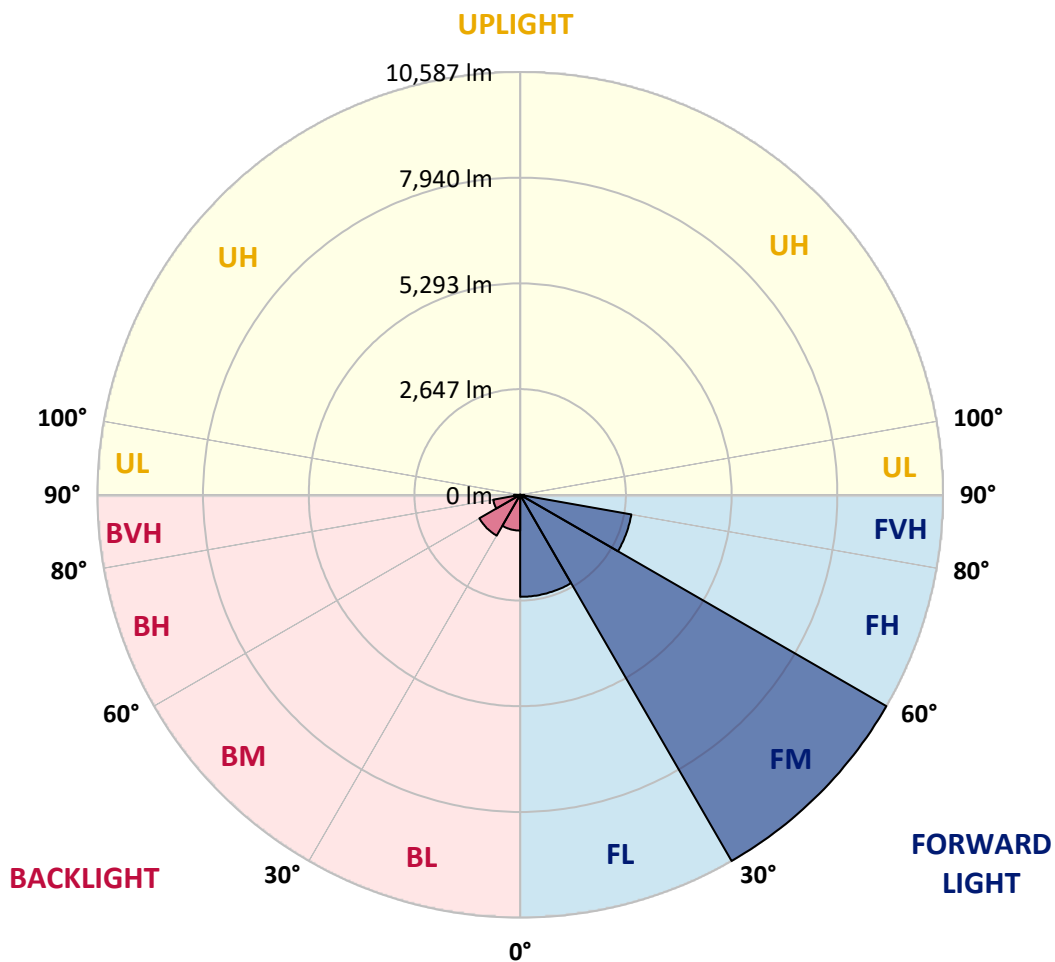
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2553.7	13.5			
FM	(30°-60°)	10586.8	55.8			
FH	(60°-80°)	2826.9	14.9			G2/5000
FVH	(80°-90°)	103.5	0.5			G2/225
BL	(0°-30°)	896.1	4.7	B2/1000		
BM	(30°-60°)	1178.9	6.2	B2/2500		
BH	(60°-80°)	686.2	3.6	B2/1000		G2/1000
BVH	(80°-90°)	153.8	0.8			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	62.5°	65°	75°	85°
0°	5069.1	5069.1	5069.1	5069.1	5069.1	5069.1	5069.1	5069.1	5069.1	5069.1	5069.1
2.5°	5753.8	5750.2	5701.6	5669.5	5631.5	5543.8	5455.9	5390.7	5357.5	5230.6	5107.1
5°	6229.7	6215.3	6188.1	6153.7	6103.8	5993.5	5854.7	5734.8	5687.3	5461.8	5235.3
7.5°	5978.0	6000.6	6084.8	6179.7	6279.5	6286.5	6188.1	6045.7	5993.5	5692.1	5359.9
10°	5281.5	5272.1	5377.7	5562.7	5891.5	6216.6	6379.1	6309.2	6254.5	5910.4	5484.4
12.5°	5070.4	5067.9	5085.7	5133.2	5339.7	5785.8	6330.4	6482.3	6463.4	6141.8	5617.3
15°	5134.4	5136.7	5135.6	5141.6	5198.4	5410.9	6058.7	6540.5	6599.9	6370.8	5752.6
17.5°	5339.7	5331.4	5305.2	5276.8	5285.1	5361.1	5765.7	6440.8	6618.8	6574.9	5866.5
20°	5656.5	5656.5	5586.4	5507.0	5454.8	5471.4	5643.4	6270.0	6531.0	6748.2	5951.9
22.5°	6054.0	6060.0	5956.7	5811.9	5693.2	5648.2	5713.5	6143.0	6424.2	6908.4	6027.9
25°	6547.6	6546.5	6395.7	6188.1	6000.6	5892.6	5891.5	6149.0	6391.0	7095.8	6107.4
27.5°	7158.7	7103.0	6927.3	6631.9	6367.3	6202.4	6127.6	6298.4	6461.0	7326.1	6214.2
30°	7848.2	7791.2	7560.9	7181.2	6822.9	6582.1	6458.6	6557.1	6674.5	7619.1	6375.5
32.5°	8530.4	8543.5	8272.9	7844.6	7384.2	7044.9	6862.1	6922.6	7004.5	7977.5	6593.9
35°	9529.5	9528.4	9174.7	8639.6	8092.6	7622.7	7391.3	7423.3	7498.1	8482.9	6900.0
37.5°	10274.7	10262.9	10035.0	9561.6	8945.7	8382.1	8047.5	8052.3	8116.3	9117.8	7303.5
40°	10350.6	10348.3	10347.1	10279.4	9858.2	9326.7	8907.8	8821.1	8847.2	9791.8	7731.9
42.5°	9770.4	9857.1	10106.2	10488.3	10605.7	10326.9	9930.6	9737.2	9680.2	10565.4	8185.1
45°	8943.4	8987.2	9423.9	10283.0	10981.9	11266.7	10968.9	10560.6	10463.4	11317.7	8554.1
47.5°	8558.9	8539.9	8792.7	9728.9	10945.2	12014.3	12035.6	11366.4	11201.4	11966.8	8868.6
50°	7734.2	7709.3	8028.5	8913.7	10544.1	12385.7	13130.8	12244.4	11939.5	12583.8	9153.4
52.5°	6090.8	6067.0	6495.4	7635.7	9647.0	12246.9	14054.0	13321.9	12802.1	13178.3	9419.2
55°	3963.2	3965.6	4373.8	5549.7	7806.6	11437.6	14487.1	14566.6	13984.0	13772.8	9633.9
57.5°	2182.2	2162.0	2452.7	3175.3	5370.5	9599.6	14126.4	15463.6	15159.9	14283.1	9789.4
58°	1940.1	1916.4	2140.6	2763.6	4815.2	9081.0	13944.9	15520.6	15310.6	14367.2	9811.9
60°	1382.4	1342.0	1307.6	1558.0	2774.2	6547.6	12734.5	15151.6	15354.5	14535.8	9790.6
62.5°	1165.2	1119.0	995.5	986.0	1306.4	3202.7	10070.6	13306.4	13874.8	14147.7	9446.4
65°	1082.2	1035.9	873.3	815.2	886.4	1382.4	6227.2	10274.7	11034.2	12798.6	8580.3
67.5°	1022.8	968.2	793.8	717.9	732.1	827.1	2642.6	6719.7	7600.1	9980.4	6883.4
70°	969.5	908.9	730.9	643.1	631.3	628.9	1032.4	3508.7	4357.2	6531.0	4611.1
72.5°	908.9	849.6	675.1	581.4	555.4	510.2	620.6	1450.0	1987.6	3201.4	2113.3
75°	821.1	772.4	613.5	530.4	485.3	414.1	458.0	695.3	856.7	1225.8	981.3
77.5°	722.6	683.4	550.6	487.6	427.2	338.2	350.1	471.1	529.2	690.6	568.4
80°	511.4	525.7	480.6	429.5	376.1	272.9	269.3	345.3	379.7	463.9	382.1
82.5°	352.4	363.1	391.6	339.4	303.8	212.4	198.1	239.7	257.5	280.1	185.2
85°	251.5	244.5	271.7	243.3	223.1	135.2	126.9	151.9	162.5	170.8	89.0
87.5°	153.0	151.9	156.6	125.8	116.3	68.8	62.9	72.4	77.1	74.8	42.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	5069.1	5069.1	5069.1	5069.1	5069.1	5069.1	5069.1	5069.1	5069.1	5069.1	5069.1
2.5°	5060.8	5002.6	4875.7	4773.7	4663.3	4579.0	4494.8	4447.4	4395.1	4365.4	4362.0
5°	5116.6	4997.9	4727.4	4475.8	4217.1	3984.6	3756.8	3588.3	3450.6	3372.3	3367.6
7.5°	5178.3	4992.0	4574.3	4138.9	3678.4	3220.5	2815.8	2529.9	2345.9	2260.4	2254.5
10°	5225.7	4967.0	4388.0	3710.4	2980.7	2375.6	2007.7	1839.3	1783.4	1769.2	1766.8
12.5°	5282.7	4949.2	4153.1	3161.1	2278.2	1808.4	1696.9	1686.1	1698.0	1705.2	1706.3
15°	5336.1	4914.9	3836.3	2552.4	1783.4	1616.2	1618.5	1641.0	1664.8	1675.5	1676.6
17.5°	5361.1	4830.6	3419.7	2011.3	1560.4	1529.5	1556.8	1586.5	1607.9	1616.2	1616.2
20°	5361.1	4695.3	2936.8	1629.2	1444.1	1450.0	1483.3	1505.8	1510.5	1503.4	1499.9
22.5°	5338.5	4528.1	2466.9	1421.5	1349.2	1371.7	1397.8	1382.4	1326.6	1283.9	1275.6
25°	5318.3	4329.8	2014.8	1294.5	1266.1	1295.8	1285.0	1179.5	1094.0	1050.2	1043.0
27.5°	5285.1	4090.2	1637.5	1190.2	1185.4	1209.1	1103.6	1001.5	958.8	935.1	930.3
30°	5276.8	3830.3	1370.5	1097.6	1105.9	1072.7	951.7	918.4	908.9	895.9	890.0
32.5°	5304.1	3570.5	1203.2	1021.6	1030.0	920.8	874.5	879.2	878.1	861.4	855.5
35°	5378.9	3317.7	1096.4	952.9	929.1	824.7	830.6	844.9	844.9	824.7	817.5
37.5°	5509.3	3082.8	1028.8	894.7	812.8	774.9	790.2	809.3	809.3	795.0	789.1
40°	5648.2	2853.7	977.7	848.4	739.3	740.4	755.9	770.1	776.0	778.4	773.7
42.5°	5773.9	2616.4	923.2	798.6	706.0	714.3	721.5	732.1	757.1	773.7	771.3
45°	5847.5	2378.0	863.9	736.8	683.4	687.0	684.7	703.7	733.4	758.2	758.2
47.5°	5915.2	2182.2	815.2	675.1	660.9	660.9	653.8	672.8	700.1	729.8	732.1
50°	5979.2	2055.2	780.8	627.7	632.5	628.9	626.6	644.4	681.1	716.7	722.6
52.5°	6044.5	2012.5	749.9	593.3	602.8	598.0	600.4	625.3	666.9	703.7	709.6
55°	6135.9	2039.8	717.9	569.6	574.3	573.2	582.6	611.1	647.8	684.7	687.0
57.5°	6248.6	2139.4	690.6	551.8	547.0	554.1	569.6	596.9	632.5	676.4	680.0
58°	6271.1	2163.1	685.9	547.0	541.0	551.8	567.2	593.3	630.0	676.4	680.0
60°	6305.6	2247.4	674.0	537.6	520.9	539.9	558.8	585.0	625.3	682.3	689.4
62.5°	6139.4	2264.0	670.4	526.8	499.5	523.2	545.8	575.5	620.6	702.5	717.9
65°	5563.9	2093.2	645.5	509.0	481.7	510.2	534.0	568.4	634.8	763.0	770.1
67.5°	4466.3	1738.4	585.0	481.7	461.6	494.8	524.5	568.4	640.8	772.4	777.2
70°	3070.9	1306.4	509.0	452.0	437.8	475.8	520.9	581.4	620.6	730.9	716.7
72.5°	1604.3	908.9	446.1	417.7	409.4	459.2	555.4	568.4	596.9	682.3	668.1
75°	808.0	618.2	392.8	378.5	377.4	453.3	621.7	547.0	571.9	641.9	672.8
77.5°	477.0	484.2	350.1	341.8	347.7	442.6	623.0	525.7	543.5	591.0	624.1
80°	326.3	399.9	316.8	314.5	319.2	407.0	574.3	499.5	510.2	558.8	594.4
82.5°	183.9	220.8	277.6	293.1	290.7	333.5	496.0	454.5	467.5	660.9	698.9
85°	89.0	132.9	232.6	274.2	248.0	221.9	403.5	403.5	407.0	473.4	479.4
87.5°	33.2	59.3	156.6	217.2	173.3	132.9	274.2	286.0	318.0	327.5	334.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)