

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: P196503

Luminaire Tested: **NAV-AF-03-D-UNV-AFL-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196503
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-7030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17950.2 lumens
Efficiency: N/A
Efficacy: 108.1 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

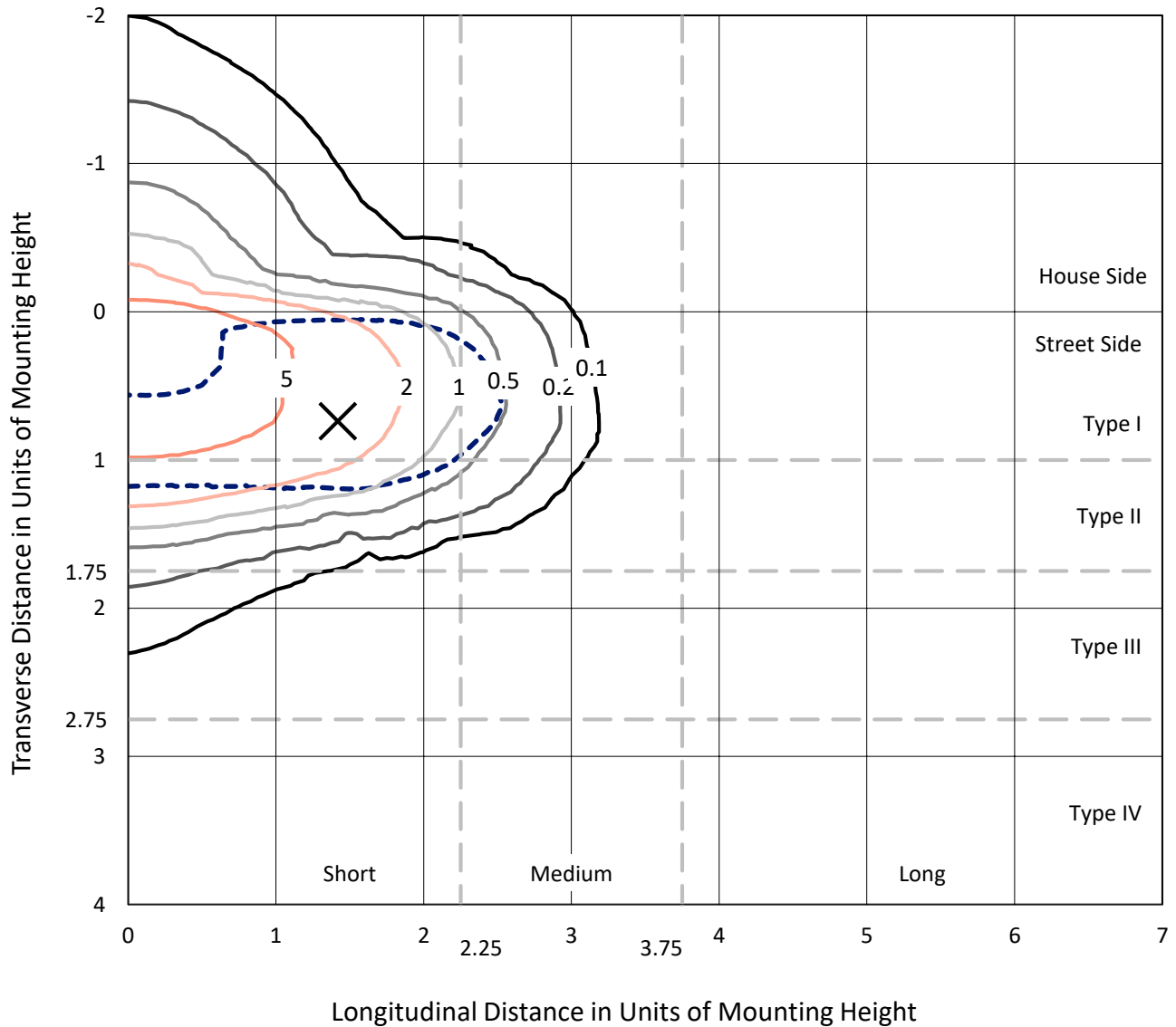
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

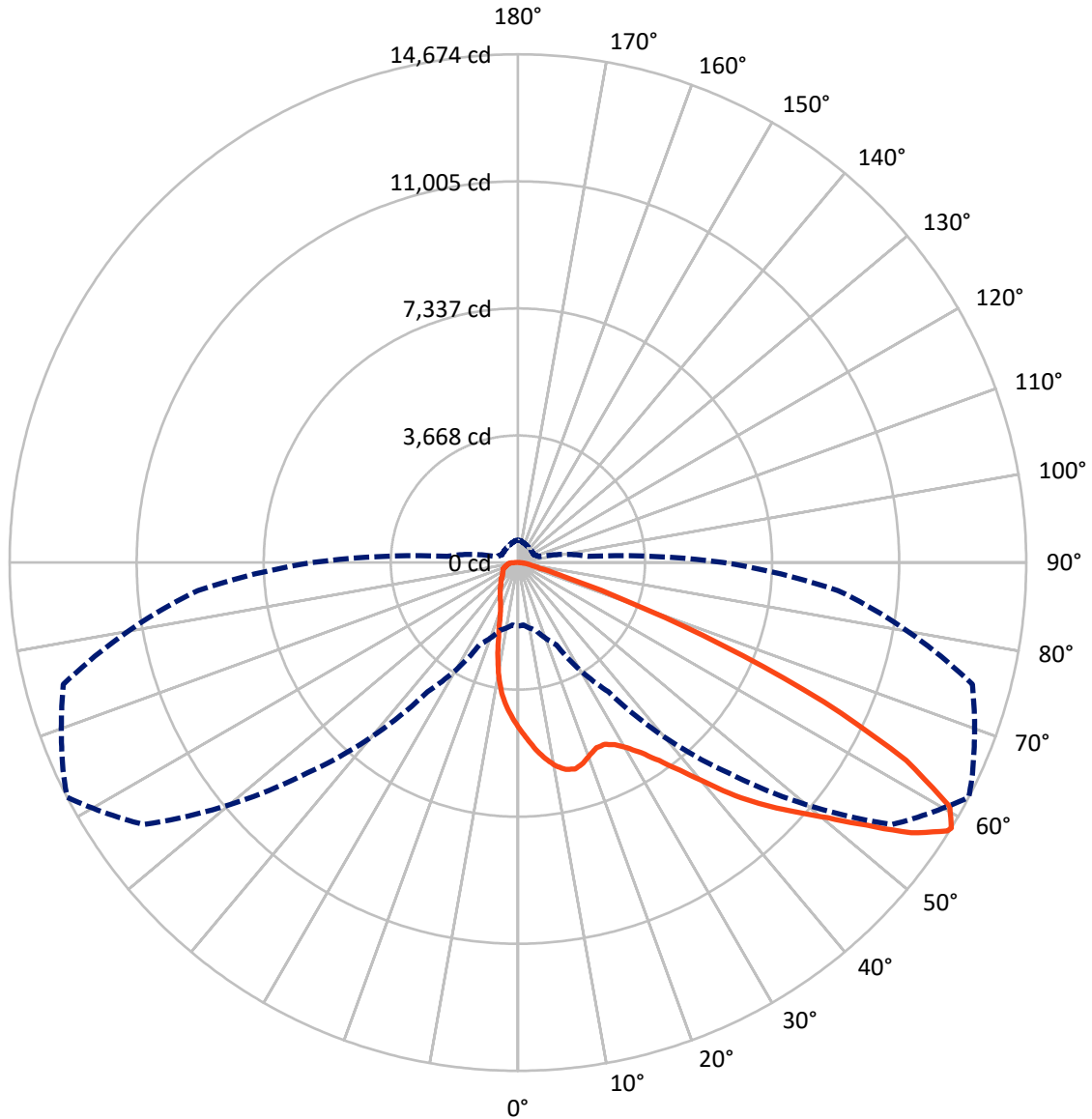
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9 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	2756.0	0.0	2756.0
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	15194.1	0.0	15194.1
	% Fixture	84.6	0.0	84.6
Total	Lumens	17950.2	0.0	17950.2
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	428.4	2.4
10°-20°	1081.1	6.0
20°-30°	1752.1	9.8
30°-40°	2797.3	15.6
40°-50°	4068.8	22.7
50°-60°	4257.7	23.7
60°-70°	2595.6	14.5
70°-80°	725.9	4.0
80°-90°	243.3	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°	17950.2	100.0
0°-180°	17950.2	100.0



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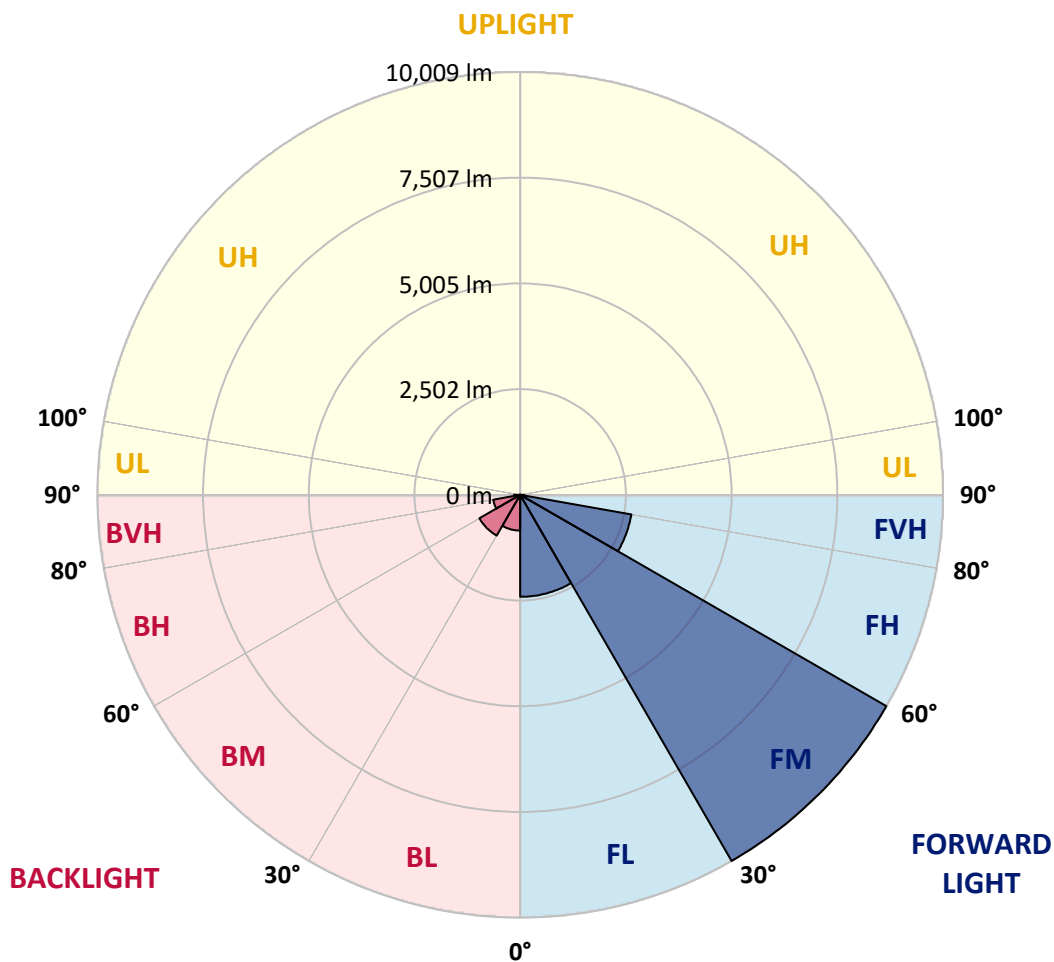
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2414.4	13.5			
FM	(30°-60°)	10009.2	55.8			
FH	(60°-80°)	2672.7	14.9			G2/5000
FVH	(80°-90°)	97.9	0.5			G1/100
BL	(0°-30°)	847.2	4.7	B2/1000		
BM	(30°-60°)	1114.6	6.2	B2/2500		
BH	(60°-80°)	648.8	3.6	B2/1000		G2/1000
BVH	(80°-90°)	145.4	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°	4792.5	4792.5	4792.5	4792.5	4792.5	4792.5	4792.5	4792.5	4792.5	4792.5	4792.5
2.5°	5439.9	5436.5	5390.6	5360.3	5324.3	5241.3	5158.3	5096.6	5065.2	4945.2	4828.5
5°	5889.7	5876.3	5850.5	5817.9	5770.8	5666.5	5535.3	5422.0	5377.0	5163.9	4949.7
7.5°	5652.0	5673.3	5752.9	5842.6	5936.9	5943.6	5850.5	5715.9	5666.5	5381.6	5067.5
10°	4993.3	4984.4	5084.3	5259.3	5570.0	5877.4	6031.1	5964.9	5913.3	5587.9	5185.2
12.5°	4793.8	4791.4	4808.3	4853.2	5048.4	5470.2	5985.1	6128.7	6110.8	5806.8	5310.9
15°	4854.3	4856.6	4855.4	4861.1	4914.9	5115.6	5728.3	6183.7	6239.8	6023.3	5438.8
17.5°	5048.4	5040.5	5015.9	4988.9	4996.8	5068.5	5451.2	6089.4	6257.8	6216.2	5546.4
20°	5347.9	5347.9	5281.7	5206.5	5157.1	5172.9	5335.5	5927.9	6174.7	6379.9	5627.3
22.5°	5723.8	5729.3	5631.8	5494.8	5382.6	5340.0	5401.8	5807.9	6073.7	6531.5	5699.1
25°	6190.4	6189.3	6046.9	5850.5	5673.3	5571.1	5570.0	5813.4	6042.4	6708.7	5774.3
27.5°	6768.2	6715.4	6549.4	6270.1	6019.8	5864.0	5793.3	5954.8	6108.5	6926.4	5875.2
30°	7420.1	7366.2	7148.5	6789.5	6450.6	6223.0	6106.3	6199.4	6310.5	7203.5	6027.8
32.5°	8065.1	8077.4	7821.7	7416.6	6981.3	6660.5	6487.7	6544.9	6622.3	7542.2	6234.3
35°	9009.6	9008.5	8674.2	8168.2	7651.1	7206.8	6988.1	7018.4	7089.1	8020.1	6523.7
37.5°	9714.2	9703.0	9487.5	9040.0	8457.6	7924.8	7608.5	7612.9	7673.5	8620.3	6905.0
40°	9786.1	9783.7	9782.6	9718.7	9320.4	8817.8	8421.8	8339.9	8364.6	9257.5	7310.0
42.5°	9237.5	9319.3	9554.8	9916.2	10027.2	9763.5	9388.8	9205.9	9152.1	9989.0	7738.7
45°	8455.5	8497.0	8909.8	9722.0	10382.8	10652.0	10370.5	9984.5	9892.6	10700.3	8087.5
47.5°	8092.0	8074.0	8313.0	9198.1	10348.1	11358.8	11379.1	10746.3	10590.4	11313.9	8384.8
50°	7312.2	7288.6	7590.5	8427.3	9968.9	11710.0	12414.5	11576.4	11288.1	11897.4	8654.0
52.5°	5758.5	5736.1	6141.0	7219.2	9120.8	11578.8	13287.3	12595.1	12103.7	12459.4	8905.2
55°	3747.0	3749.2	4135.1	5246.9	7380.7	10813.6	13696.7	13771.9	13221.1	13021.4	9108.4
57.5°	2063.2	2044.0	2318.9	3002.1	5077.5	9075.8	13355.8	14620.1	14332.8	13503.8	9255.4
58°	1834.3	1811.8	2023.8	2612.8	4552.5	8585.6	13184.1	14673.9	14475.3	13583.4	9276.6
60°	1307.0	1268.8	1236.3	1473.1	2622.9	6190.4	12039.9	14325.0	14516.8	13742.7	9256.5
62.5°	1101.7	1057.9	941.3	932.3	1235.1	3027.9	9521.2	12580.5	13117.8	13375.9	8931.2
65°	1023.1	979.4	825.7	770.8	838.0	1307.0	5887.6	9714.2	10432.2	12100.4	8112.2
67.5°	967.1	915.5	750.5	678.7	692.1	782.0	2498.4	6353.1	7185.6	9435.9	6507.9
70°	916.5	859.4	691.1	608.0	596.9	594.6	976.0	3317.3	4119.5	6174.7	4359.6
72.5°	859.4	803.3	638.3	549.7	525.0	482.4	586.7	1370.8	1879.2	3026.8	1998.1
75°	776.3	730.3	579.9	501.5	458.9	391.4	433.0	657.4	809.9	1158.9	927.8
77.5°	683.2	646.2	520.5	461.1	403.8	319.7	330.9	445.3	500.3	653.0	537.3
80°	483.5	497.0	454.3	406.1	355.6	258.1	254.7	326.4	359.0	438.6	361.2
82.5°	333.2	343.3	370.2	320.9	287.3	200.8	187.4	226.6	243.4	264.7	175.1
85°	237.8	231.1	256.9	230.0	210.9	128.0	120.0	143.5	153.7	161.6	84.1
87.5°	144.8	143.5	148.0	118.9	110.0	65.1	59.4	68.4	72.8	70.7	40.4
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°	4792.5	4792.5	4792.5	4792.5	4792.5	4792.5	4792.5	4792.5	4792.5	4792.5	4792.5
2.5°	4784.7	4729.8	4609.7	4513.3	4408.9	4329.3	4249.6	4204.8	4155.3	4127.4	4124.0
5°	4837.5	4725.3	4469.5	4231.6	3987.1	3767.3	3551.8	3392.5	3262.4	3188.3	3183.9
7.5°	4895.8	4719.7	4324.8	3913.0	3477.7	3044.7	2662.2	2391.8	2218.0	2137.1	2131.5
10°	4940.7	4696.1	4148.7	3508.1	2818.2	2246.0	1898.2	1738.9	1686.2	1672.6	1670.5
12.5°	4994.6	4679.2	3926.6	2988.7	2153.9	1709.7	1604.3	1594.2	1605.3	1612.1	1613.2
15°	5045.0	4646.8	3627.0	2413.1	1686.2	1528.0	1530.1	1551.5	1574.0	1584.0	1585.3
17.5°	5068.5	4567.1	3233.2	1901.5	1475.2	1446.0	1471.8	1499.9	1520.2	1528.0	1528.0
20°	5068.5	4439.2	2776.6	1540.3	1365.3	1370.8	1402.4	1423.6	1428.1	1421.4	1418.0
22.5°	5047.2	4281.0	2332.3	1344.0	1275.6	1296.9	1321.6	1307.0	1254.2	1213.9	1206.0
25°	5028.2	4093.6	1904.9	1223.9	1197.1	1225.2	1215.0	1115.1	1034.3	992.8	986.1
27.5°	4996.8	3867.0	1548.2	1125.3	1120.8	1143.2	1043.3	946.8	906.5	884.0	879.5
30°	4988.9	3621.4	1295.7	1037.8	1045.6	1014.2	899.7	868.3	859.4	847.0	841.4
32.5°	5014.7	3375.7	1137.6	966.0	973.8	870.6	826.8	831.3	830.2	814.4	808.8
35°	5085.4	3136.8	1036.7	900.9	878.5	779.7	785.3	798.8	798.8	779.7	773.0
37.5°	5208.8	2914.6	972.6	845.8	768.4	732.6	747.2	765.2	765.2	751.6	746.0
40°	5340.0	2698.0	924.5	802.2	698.9	700.1	714.7	728.1	733.6	736.0	731.5
42.5°	5458.9	2473.7	872.8	755.0	667.5	675.3	682.1	692.1	715.7	731.5	729.2
45°	5528.5	2248.2	816.7	696.6	646.2	649.5	647.4	665.3	693.4	716.8	716.8
47.5°	5592.4	2063.2	770.8	638.3	624.9	624.9	618.2	636.1	661.9	690.0	692.1
50°	5653.1	1943.0	738.1	593.5	597.9	594.6	592.3	609.1	644.0	677.6	683.2
52.5°	5714.8	1902.6	709.0	560.9	569.9	565.4	567.7	591.2	630.5	665.3	670.9
55°	5801.1	1928.4	678.7	538.5	543.0	541.8	550.8	577.8	612.5	647.4	649.5
57.5°	5907.7	2022.7	653.0	521.7	517.2	523.9	538.5	564.4	597.9	639.5	642.8
58°	5929.1	2045.2	648.5	517.2	511.6	521.7	536.3	560.9	595.7	639.5	642.8
60°	5961.5	2124.8	637.2	508.2	492.5	510.5	528.4	553.1	591.2	645.0	651.8
62.5°	5804.5	2140.5	633.8	498.1	472.3	494.7	516.0	544.1	586.7	664.2	678.7
65°	5260.4	1979.0	610.3	481.3	455.5	482.4	504.9	537.3	600.2	721.3	728.1
67.5°	4222.7	1643.5	553.1	455.5	436.4	467.8	495.8	537.3	605.9	730.3	734.8
70°	2903.3	1235.1	481.3	427.4	414.0	449.8	492.5	549.7	586.7	691.1	677.6
72.5°	1516.7	859.4	421.8	394.9	387.0	434.2	525.0	537.3	564.4	645.0	631.6
75°	763.9	584.5	371.4	357.9	356.7	428.6	587.9	517.2	540.8	606.9	636.1
77.5°	451.0	457.7	330.9	323.1	328.7	418.5	589.0	497.0	513.8	558.7	590.1
80°	308.5	378.0	299.6	297.3	301.8	384.8	543.0	472.3	482.4	528.4	562.0
82.5°	173.9	208.6	262.6	277.1	274.9	315.2	468.9	429.7	442.1	624.9	660.8
85°	84.1	125.6	219.9	259.2	234.5	209.8	381.5	381.5	384.8	447.6	453.2
87.5°	31.4	56.0	148.0	205.3	163.8	125.6	259.2	270.4	300.7	309.6	316.5
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)