

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: P196029

Luminaire Tested: **NAV-AF-03-D-UNV-AFL-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196029
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-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20827.3 lumens
Efficiency: N/A
Efficacy: 109.0 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

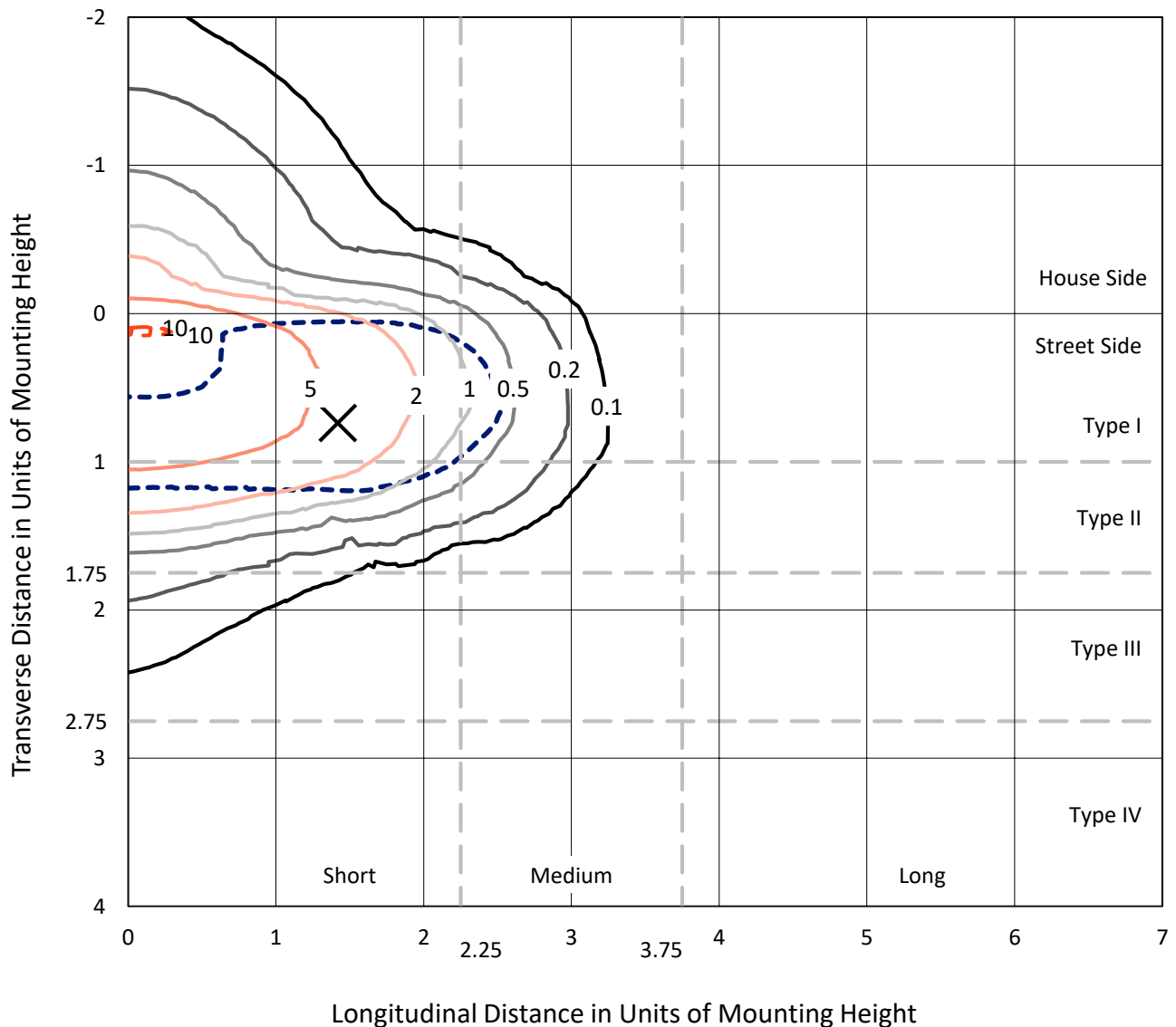
Input Watts (W): 191
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

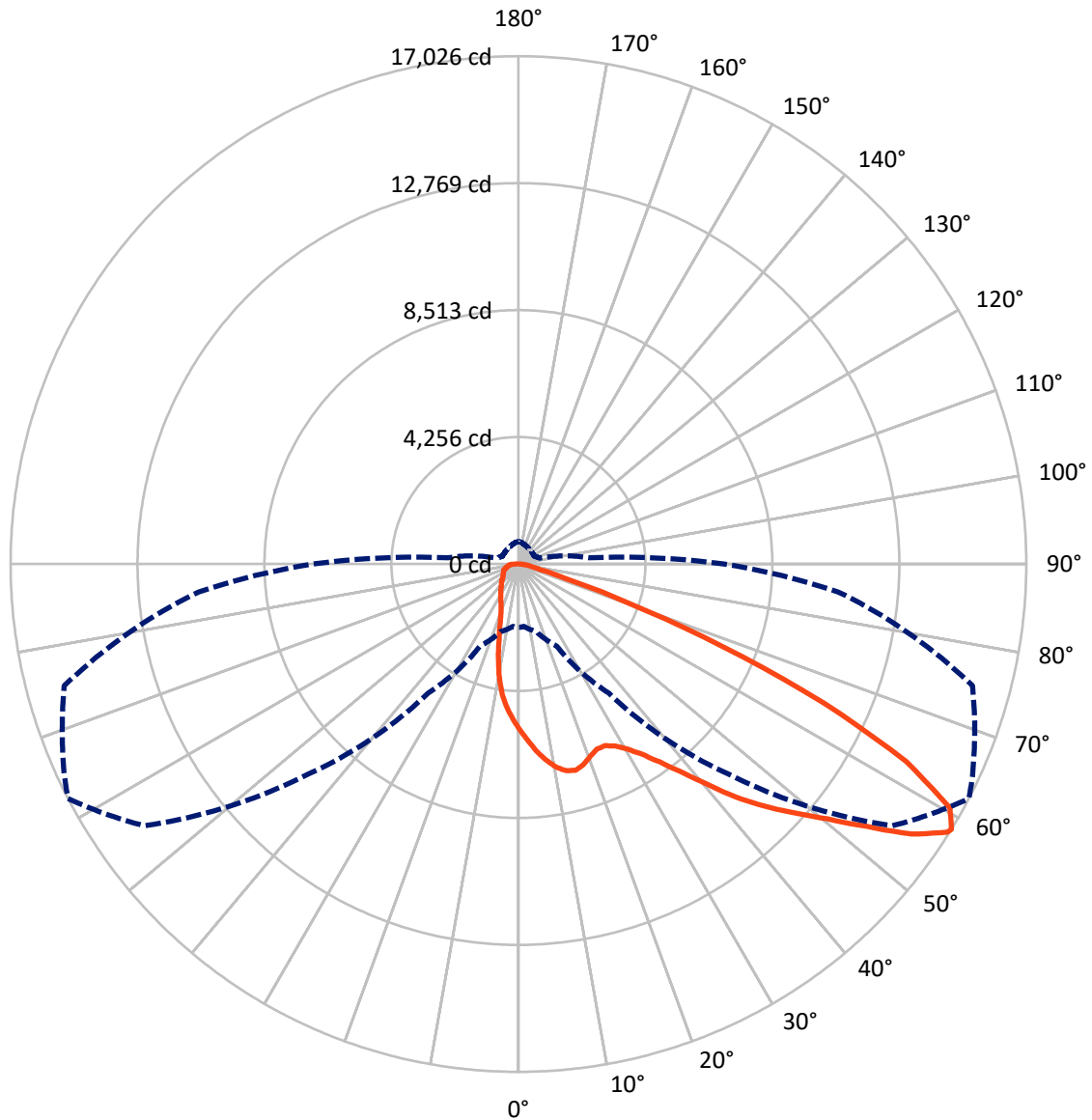
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.4 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	3197.8	0.0	3197.8
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	17629.5	0.0	17629.5
	% Fixture	84.6	0.0	84.6
Total	Lumens	20827.3	0.0	20827.3
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	497.0	2.4
10°-20°	1254.4	6.0
20°-30°	2032.9	9.8
30°-40°	3245.7	15.6
40°-50°	4721.0	22.7
50°-60°	4940.1	23.7
60°-70°	3011.6	14.5
70°-80°	842.2	4.0
80°-90°	282.3	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°	20827.3	100.0
0°-180°	20827.3	100.0



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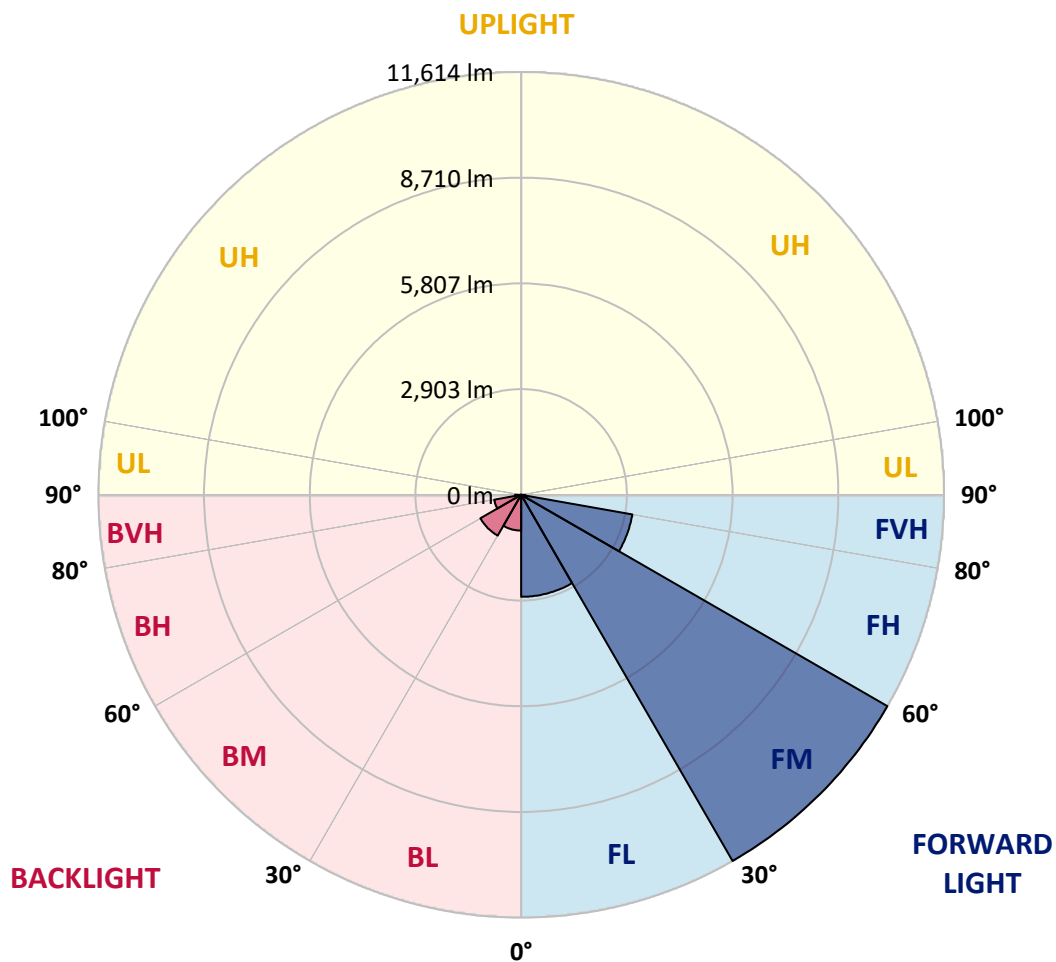
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2801.3	13.5			
FM	(30°-60°)	11613.5	55.8			
FH	(60°-80°)	3101.1	14.9			G2/5000
FVH	(80°-90°)	113.6	0.5			G2/225
BL	(0°-30°)	983.0	4.7	B2/1000		
BM	(30°-60°)	1293.2	6.2	B2/2500		
BH	(60°-80°)	752.8	3.6	B2/1000		G2/1000
BVH	(80°-90°)	168.8	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°	5560.8	5560.8	5560.8	5560.8	5560.8	5560.8	5560.8	5560.8	5560.8	5560.8	5560.8
2.5°	6311.8	6307.9	6254.5	6219.4	6177.7	6081.4	5985.1	5913.5	5877.1	5737.7	5602.4
5°	6833.8	6818.2	6788.2	6750.5	6695.8	6574.7	6422.5	6290.9	6238.9	5991.6	5742.9
7.5°	6557.8	6582.6	6675.0	6779.1	6888.4	6896.2	6788.2	6632.0	6574.7	6244.1	5879.6
10°	5793.8	5783.4	5899.2	6102.2	6462.8	6819.5	6997.8	6921.0	6861.1	6483.7	6016.4
12.5°	5562.1	5559.4	5579.0	5631.0	5857.5	6347.0	6944.4	7111.0	7090.2	6737.5	6162.2
15°	5632.4	5634.9	5633.6	5640.1	5702.6	5935.7	6646.3	7174.8	7239.9	6988.7	6310.5
17.5°	5857.5	5848.4	5819.8	5788.6	5797.7	5880.9	6324.8	7065.5	7260.7	7212.5	6435.5
20°	6205.1	6205.1	6128.3	6041.0	5983.8	6002.1	6190.8	6878.0	7164.4	7402.6	6529.2
22.5°	6641.1	6647.6	6534.4	6375.6	6245.4	6196.0	6267.5	6738.8	7047.2	7578.3	6612.5
25°	7182.6	7181.3	7016.0	6788.2	6582.6	6464.1	6462.8	6745.2	7010.8	7784.0	6699.7
27.5°	7853.0	7791.8	7599.2	7275.0	6984.8	6803.9	6721.8	6909.3	7087.6	8036.5	6816.8
30°	8609.3	8546.8	8294.3	7877.7	7484.6	7220.4	7085.0	7193.1	7321.9	8358.0	6993.9
32.5°	9357.7	9372.1	9075.3	8605.4	8100.3	7728.0	7527.6	7594.0	7683.8	8751.1	7233.4
35°	10453.7	10452.4	10064.5	9477.4	8877.4	8361.9	8108.1	8143.3	8225.2	9305.7	7569.2
37.5°	11271.2	11258.2	11008.3	10488.9	9813.3	9195.0	8828.0	8833.2	8903.5	10002.0	8011.8
40°	11354.4	11351.9	11350.6	11276.4	10814.3	10231.1	9771.6	9676.6	9705.2	10741.4	8481.7
42.5°	10718.0	10813.0	11086.3	11505.5	11634.3	11328.5	10893.7	10681.6	10619.0	11590.1	8979.0
45°	9810.7	9858.9	10337.8	11280.3	12047.0	12359.4	12032.7	11584.9	11478.1	12415.3	9383.7
47.5°	9388.9	9368.2	9645.4	10672.4	12006.7	13179.4	13202.9	12468.7	12287.8	13127.3	9728.7
50°	8484.4	8456.9	8807.1	9778.2	11566.7	13586.8	14404.3	13432.0	13097.5	13804.2	10041.1
52.5°	6681.5	6655.4	7125.4	8376.2	10582.6	13434.5	15417.0	14613.9	14043.8	14456.3	10332.7
55°	4347.5	4350.2	4797.9	6087.9	8563.7	12546.8	15892.2	15979.3	15340.2	15108.5	10568.3
57.5°	2393.8	2371.6	2690.6	3483.2	5891.4	10530.6	15496.4	16963.4	16630.2	15668.2	10738.8
58°	2128.2	2102.2	2348.2	3031.6	5282.2	9961.7	15297.3	17025.9	16795.5	15760.7	10763.5
60°	1516.4	1472.2	1434.5	1709.1	3043.3	7182.6	13969.5	16621.1	16843.6	15945.5	10740.1
62.5°	1278.3	1227.4	1092.1	1081.7	1433.2	3513.2	11047.3	14597.0	15220.5	15519.8	10362.6
65°	1187.1	1136.4	958.0	894.3	972.3	1516.4	6831.2	11271.2	12104.3	14039.8	9412.4
67.5°	1122.1	1062.1	870.8	787.5	803.1	907.3	2898.8	7371.4	8337.3	10948.3	7551.0
70°	1063.5	997.1	801.8	705.5	692.5	689.9	1132.4	3849.1	4779.7	7164.4	5058.3
72.5°	997.1	932.0	740.6	637.8	609.2	559.8	680.8	1590.7	2180.3	3511.9	2318.3
75°	900.7	847.4	673.0	581.9	532.3	454.3	502.5	762.8	939.8	1344.7	1076.5
77.5°	792.7	749.7	604.0	535.0	468.6	371.0	384.0	516.8	580.5	757.6	623.5
80°	561.0	576.6	527.1	471.2	412.7	299.4	295.5	378.8	416.5	508.9	419.1
82.5°	386.6	398.3	429.5	372.3	333.3	233.0	217.4	262.9	282.4	307.2	203.1
85°	276.0	268.1	298.1	266.9	244.7	148.4	139.3	166.6	178.3	187.4	97.6
87.5°	167.9	166.6	171.9	138.0	127.6	75.5	68.9	79.4	84.6	82.0	46.9
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°	5560.8	5560.8	5560.8	5560.8	5560.8	5560.8	5560.8	5560.8	5560.8	5560.8	5560.8
2.5°	5551.7	5487.8	5348.6	5236.6	5115.6	5023.2	4930.7	4878.7	4821.4	4788.8	4785.0
5°	5612.8	5482.6	5185.8	4910.0	4626.2	4371.0	4121.1	3936.2	3785.2	3699.4	3694.2
7.5°	5680.5	5476.2	5018.0	4540.3	4035.2	3532.8	3088.9	2775.2	2573.4	2479.7	2473.2
10°	5732.6	5448.8	4813.6	4070.3	3269.8	2606.0	2202.4	2017.6	1956.4	1940.8	1938.2
12.5°	5795.0	5429.3	4555.8	3467.7	2499.2	1983.7	1861.4	1849.7	1862.7	1870.5	1871.8
15°	5853.6	5391.6	4208.3	2799.9	1956.4	1772.9	1775.4	1800.2	1826.3	1837.9	1839.3
17.5°	5880.9	5299.1	3751.5	2206.3	1711.7	1677.8	1707.8	1740.3	1763.8	1772.9	1772.9
20°	5880.9	5150.8	3221.7	1787.2	1584.1	1590.7	1627.1	1651.9	1657.1	1649.2	1645.3
22.5°	5856.2	4967.1	2706.2	1559.4	1480.0	1504.8	1533.4	1516.4	1455.2	1408.4	1399.3
25°	5834.1	4749.8	2210.3	1420.2	1388.9	1421.4	1409.7	1293.8	1200.1	1151.9	1144.2
27.5°	5797.7	4486.9	1796.3	1305.6	1300.4	1326.4	1210.6	1098.6	1051.8	1025.7	1020.5
30°	5788.6	4201.8	1503.4	1204.0	1213.1	1176.7	1043.9	1007.5	997.1	982.7	976.3
32.5°	5818.4	3916.8	1319.9	1120.7	1129.8	1010.1	959.3	964.5	963.2	945.0	938.5
35°	5900.5	3639.5	1202.8	1045.3	1019.2	904.7	911.1	926.8	926.8	904.7	896.8
37.5°	6043.7	3381.8	1128.5	981.4	891.6	850.0	867.0	887.7	887.7	872.2	865.6
40°	6196.0	3130.5	1072.6	930.7	810.9	812.2	829.2	844.8	851.3	853.9	848.6
42.5°	6333.9	2870.2	1012.7	876.1	774.5	783.6	791.5	803.1	830.4	848.6	846.1
45°	6414.6	2608.5	947.7	808.3	749.7	753.7	751.1	771.9	804.4	831.8	831.8
47.5°	6488.9	2393.8	894.3	740.6	725.1	725.1	717.2	738.1	768.0	800.6	803.1
50°	6559.2	2254.5	856.5	688.5	693.8	689.9	687.3	706.9	747.2	786.2	792.7
52.5°	6630.8	2207.6	822.7	650.8	661.2	656.0	658.7	686.0	731.5	771.9	778.4
55°	6730.9	2237.6	787.5	624.8	630.0	628.7	639.1	670.3	710.7	751.1	753.7
57.5°	6854.6	2347.0	757.6	605.3	600.1	607.8	624.8	654.8	693.8	741.9	745.8
58°	6879.3	2372.9	752.4	600.1	593.5	605.3	622.2	650.8	691.2	741.9	745.8
60°	6917.1	2465.4	739.4	589.6	571.4	592.3	613.1	641.7	686.0	748.5	756.3
62.5°	6734.9	2483.6	735.4	578.0	548.0	574.1	598.7	631.3	680.8	770.6	787.5
65°	6103.5	2296.1	708.1	558.4	528.5	559.8	585.7	623.5	696.4	837.0	844.8
67.5°	4899.5	1907.0	641.7	528.5	506.4	542.8	575.3	623.5	702.9	847.4	852.6
70°	3368.7	1433.2	558.4	495.9	480.3	522.0	571.4	637.8	680.8	801.8	786.2
72.5°	1759.9	997.1	489.4	458.2	449.1	503.7	609.2	623.5	654.8	748.5	732.8
75°	886.5	678.2	430.9	415.2	413.9	497.3	682.1	600.1	627.4	704.2	738.1
77.5°	523.2	531.1	384.0	374.9	381.4	485.5	683.3	576.6	596.2	648.2	684.7
80°	357.9	438.6	347.5	344.9	350.2	446.5	630.0	548.0	559.8	613.1	652.1
82.5°	201.7	242.1	304.6	321.5	319.0	365.8	544.1	498.6	512.9	725.1	766.7
85°	97.6	145.8	255.1	300.6	272.0	243.5	442.5	442.5	446.5	519.4	525.9
87.5°	36.4	65.1	171.9	238.2	190.1	145.8	300.6	313.7	348.8	359.3	367.0
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)