

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: P196019

Luminaire Tested: **NAV-AF-05-D-UNV-AFL-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196019
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-05-D-UNV-AFL-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 25463.3 lumens
Efficiency: N/A
Efficacy: 121.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B3 - U0 - G2

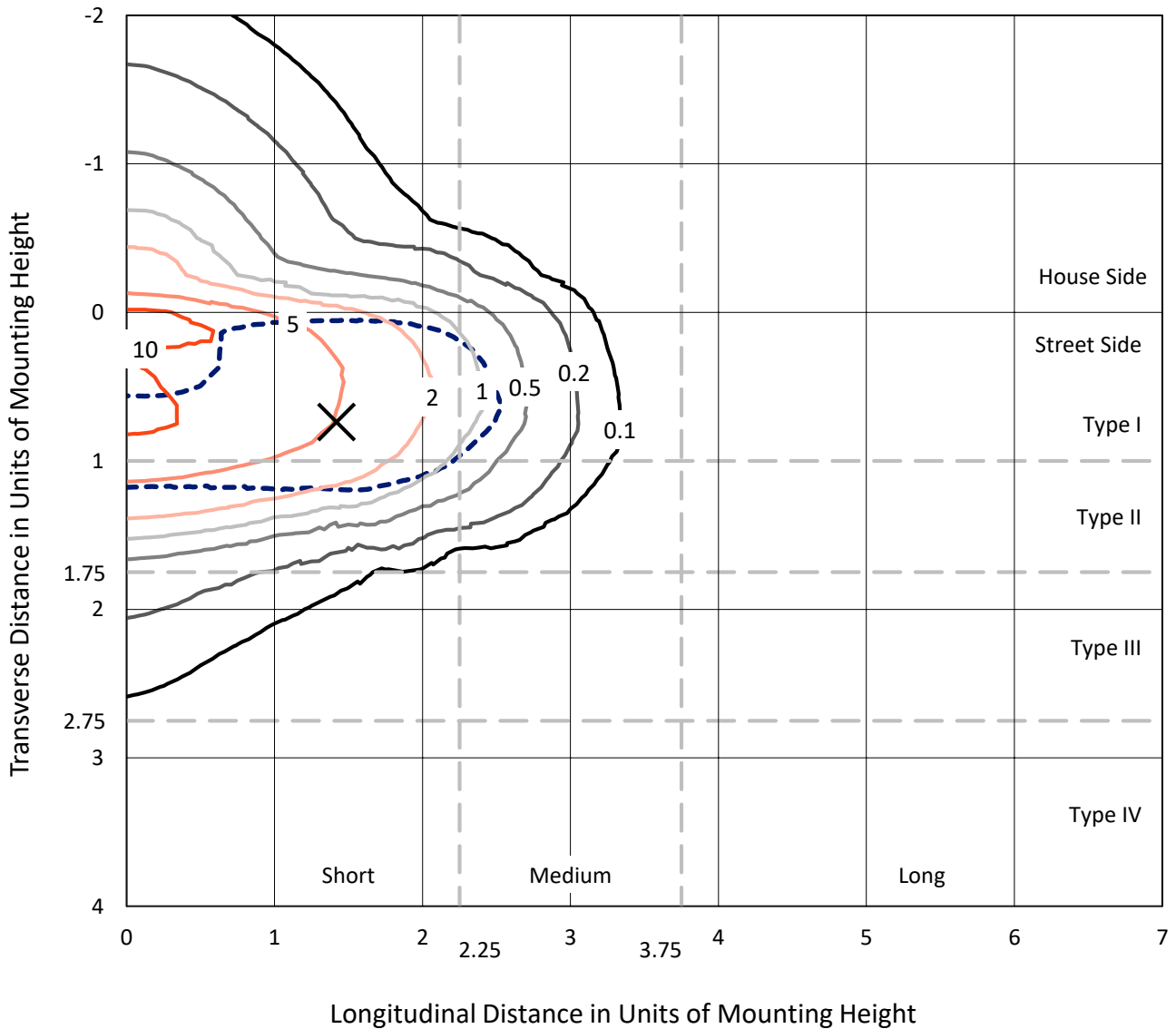
Input Watts (W): 210
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

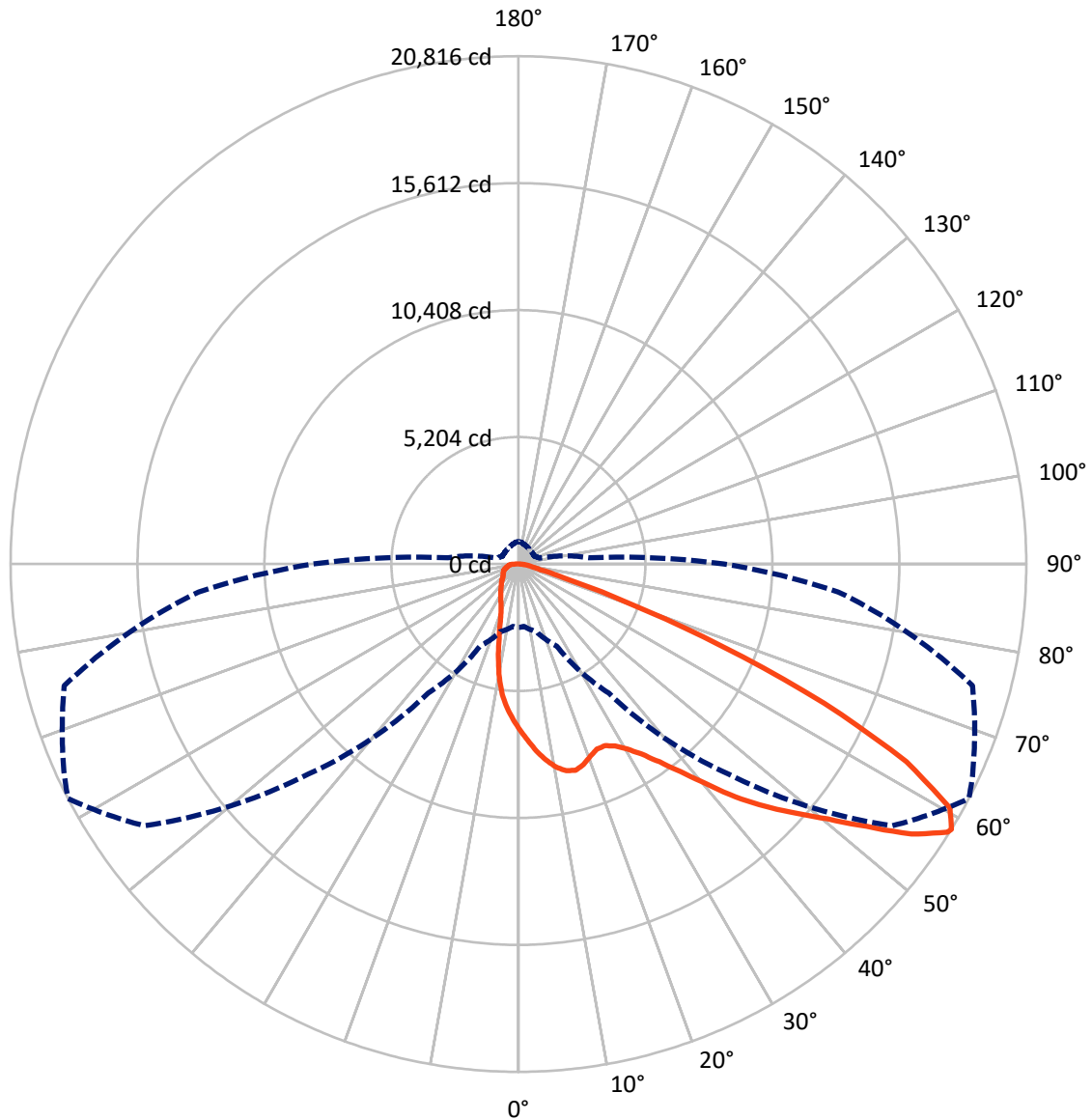
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 12.7 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	3909.6	0.0	3909.6
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	21553.7	0.0	21553.7
	% Fixture	84.6	0.0	84.6
Total	Lumens	25463.3	0.0	25463.3
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	607.7	2.4
10°-20°	1533.6	6.0
20°-30°	2485.4	9.8
30°-40°	3968.2	15.6
40°-50°	5771.8	22.7
50°-60°	6039.7	23.7
60°-70°	3682.0	14.5
70°-80°	1029.7	4.0
80°-90°	345.2	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°	25463.3	100.0
0°-180°	25463.3	100.0



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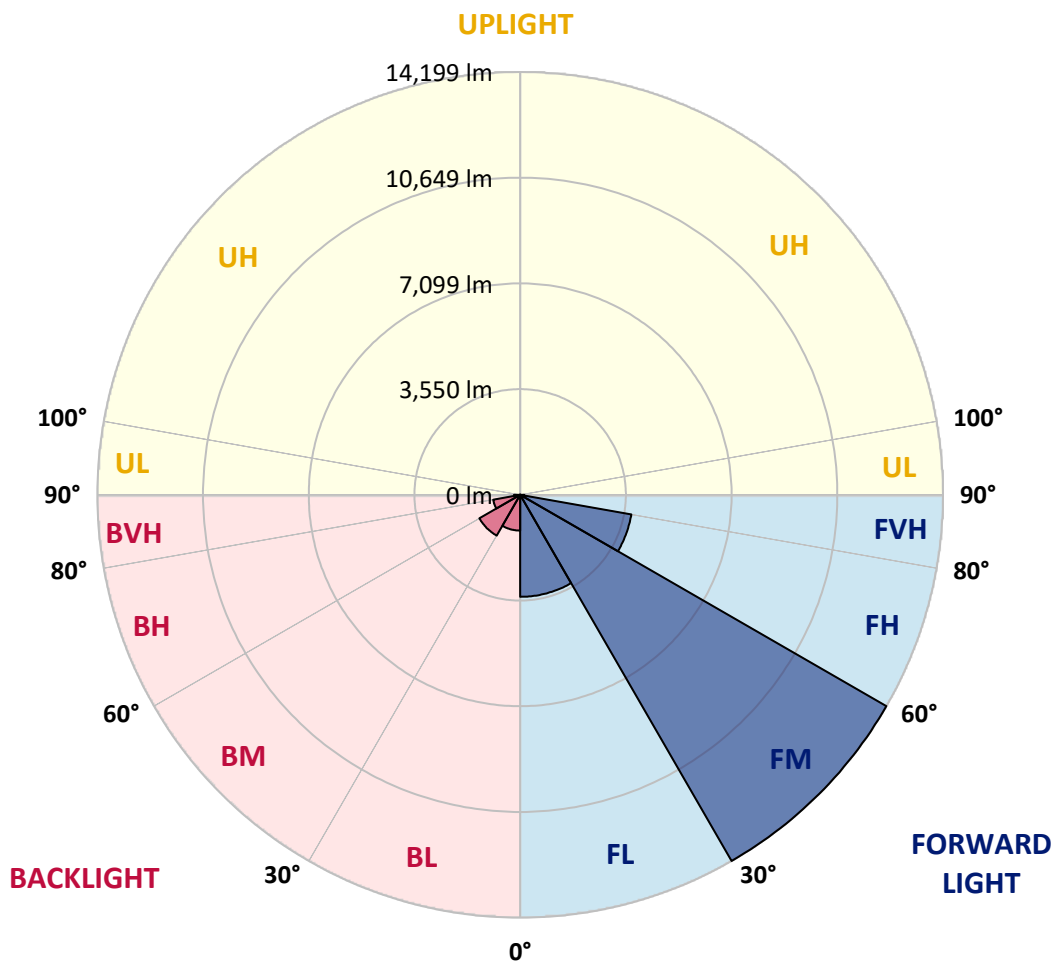
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	3424.9	13.5			
FM (30°-60°)	14198.6	55.8			
FH (60°-80°)	3791.3	14.9			G2/5000
FVH (80°-90°)	138.8	0.5			G2/225
BL (0°-30°)	1201.8	4.7	B3/2500		
BM (30°-60°)	1581.1	6.2	B2/2500		
BH (60°-80°)	920.4	3.6	B2/1000		G2/1000
BVH (80°-90°)	206.3	0.8			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-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°	6798.5	6798.5	6798.5	6798.5	6798.5	6798.5	6798.5	6798.5	6798.5	6798.5	6798.5
2.5°	7716.7	7712.0	7646.8	7603.8	7552.9	7435.1	7317.4	7229.8	7185.2	7015.0	6849.5
5°	8355.0	8335.8	8299.2	8253.1	8186.3	8038.2	7852.1	7691.4	7627.6	7325.2	7021.3
7.5°	8017.6	8047.8	8160.8	8288.0	8421.7	8431.4	8299.2	8108.3	8038.2	7634.0	7188.5
10°	7083.4	7070.6	7212.3	7460.6	7901.4	8337.5	8555.4	8461.5	8388.4	7926.8	7355.5
12.5°	6800.2	6796.9	6820.8	6884.5	7161.4	7759.8	8490.2	8694.0	8668.5	8237.2	7533.7
15°	6886.1	6889.3	6887.6	6895.6	6972.0	7256.8	8125.8	8771.9	8851.5	8544.3	7715.2
17.5°	7161.4	7150.2	7115.2	7077.1	7088.1	7190.0	7732.7	8638.2	8877.0	8818.0	7867.9
20°	7586.3	7586.3	7492.4	7385.8	7315.7	7338.0	7568.8	8409.1	8759.1	9050.4	7982.6
22.5°	8119.4	8127.3	7988.9	7794.8	7635.6	7575.2	7662.7	8238.7	8615.9	9265.3	8084.4
25°	8781.4	8779.9	8577.7	8299.2	8047.8	7903.0	7901.4	8246.7	8571.4	9516.7	8191.0
27.5°	9601.0	9526.2	9290.6	8894.5	8539.5	8318.3	8218.1	8447.2	8665.3	9825.4	8334.3
30°	10525.7	10449.2	10140.5	9631.3	9150.6	8827.6	8662.0	8794.2	8951.7	10218.5	8550.6
32.5°	11440.7	11458.2	11095.3	10520.8	9903.4	9448.3	9203.2	9284.3	9394.2	10699.1	8843.5
35°	12780.6	12779.1	12304.9	11587.1	10853.5	10223.3	9912.9	9955.9	10056.1	11377.1	9254.1
37.5°	13780.1	13764.2	13458.7	12823.6	11997.7	11241.7	10792.9	10799.4	10885.3	12228.5	9795.2
40°	13882.0	13878.8	13877.1	13786.4	13221.5	12508.5	11946.7	11830.6	11865.6	13132.3	10369.7
42.5°	13103.7	13219.9	13554.1	14066.5	14224.1	13850.1	13318.6	13059.2	12982.8	14170.0	10977.6
45°	11994.5	12053.4	12639.1	13791.2	14728.5	15110.5	14711.1	14163.6	14033.1	15179.0	11472.5
47.5°	11478.8	11453.5	11792.4	13048.0	14679.2	16113.1	16141.8	15244.2	15023.0	16049.5	11894.3
50°	10372.8	10339.5	10767.5	11954.7	14141.4	16611.2	17610.6	16421.8	16012.9	16876.9	12276.2
52.5°	8168.8	8137.0	8711.4	10240.8	12938.2	16425.0	18848.8	17866.9	17169.8	17674.2	12632.6
55°	5315.4	5318.5	5866.0	7443.1	10469.9	15339.7	19429.6	19536.2	18754.9	18471.5	12920.7
57.5°	2926.7	2899.6	3289.5	4258.6	7202.8	12874.6	18945.8	20739.3	20332.0	19155.9	13129.2
58°	2602.0	2570.2	2870.9	3706.5	6458.0	12179.2	18702.3	20815.7	20534.0	19268.9	13159.4
60°	1854.0	1799.9	1753.7	2089.5	3720.8	8781.4	17079.1	20320.8	20592.9	19494.9	13130.8
62.5°	1562.8	1500.7	1335.2	1322.5	1752.1	4295.3	13506.3	17846.2	18608.4	18974.5	12669.2
65°	1451.4	1389.3	1171.3	1093.3	1188.8	1854.0	8351.8	13780.1	14798.6	17165.0	11507.6
67.5°	1371.8	1298.6	1064.7	962.8	981.9	1109.2	3544.1	9012.2	10193.0	13385.4	9231.8
70°	1300.2	1219.1	980.3	862.6	846.6	843.4	1384.6	4705.8	5843.7	8759.1	6184.2
72.5°	1219.1	1139.5	905.5	779.8	744.8	684.4	832.3	1944.7	2665.6	4293.6	2834.3
75°	1101.3	1036.0	822.8	711.4	650.9	555.4	614.3	932.5	1149.0	1644.0	1316.1
77.5°	969.1	916.7	738.5	654.1	573.0	453.6	469.4	631.8	709.7	926.2	762.3
80°	685.9	705.0	644.6	576.1	504.5	366.0	361.2	463.1	509.2	622.3	512.4
82.5°	472.6	486.9	525.2	455.1	407.4	284.9	265.8	321.5	345.3	375.5	248.3
85°	337.4	327.9	364.5	326.2	299.2	181.5	170.3	203.7	218.0	229.1	119.4
87.5°	205.3	203.7	210.1	168.7	156.0	92.3	84.4	97.1	103.4	100.2	57.3
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°	6798.5	6798.5	6798.5	6798.5	6798.5	6798.5	6798.5	6798.5	6798.5	6798.5	6798.5
2.5°	6787.4	6709.4	6539.1	6402.2	6254.2	6141.3	6028.2	5964.6	5894.7	5854.9	5850.1
5°	6862.2	6703.1	6340.2	6002.8	5655.9	5344.0	5038.4	4812.5	4627.8	4522.8	4516.4
7.5°	6944.9	6695.1	6134.9	5550.8	4933.4	4319.1	3776.4	3392.9	3146.2	3031.6	3023.7
10°	7008.6	6661.7	5885.0	4976.3	3997.6	3186.0	2692.7	2466.7	2391.9	2372.8	2369.7
12.5°	7085.0	6637.8	5570.0	4239.5	3055.6	2425.3	2275.8	2261.4	2277.3	2286.9	2288.4
15°	7156.6	6591.7	5145.0	3423.1	2391.9	2167.5	2170.7	2200.9	2232.8	2247.1	2248.7
17.5°	7190.0	6478.7	4586.5	2697.4	2092.8	2051.3	2087.9	2127.7	2156.4	2167.5	2167.5
20°	7190.0	6297.3	3938.8	2185.0	1936.8	1944.7	1989.2	2019.5	2025.9	2016.3	2011.5
22.5°	7159.7	6072.8	3308.5	1906.5	1809.4	1839.7	1874.7	1854.0	1779.2	1721.9	1710.8
25°	7132.7	5807.1	2702.2	1736.3	1698.0	1737.8	1723.5	1581.9	1467.3	1408.4	1398.9
27.5°	7088.1	5485.6	2196.2	1596.2	1589.9	1621.7	1480.0	1343.1	1285.8	1254.0	1247.7
30°	7077.1	5137.1	1838.0	1472.0	1483.2	1438.7	1276.3	1231.7	1219.1	1201.6	1193.6
32.5°	7113.6	4788.5	1613.7	1370.2	1381.4	1234.9	1172.9	1179.3	1177.6	1155.3	1147.4
35°	7213.8	4449.6	1470.5	1277.9	1246.1	1106.0	1114.0	1133.1	1133.1	1106.0	1096.5
37.5°	7389.0	4134.5	1379.8	1199.9	1090.2	1039.2	1059.9	1085.4	1085.4	1066.2	1058.2
40°	7575.2	3827.4	1311.3	1137.8	991.4	993.1	1013.7	1032.9	1040.8	1043.9	1037.6
42.5°	7743.8	3509.0	1238.1	1071.0	946.8	958.0	967.6	981.9	1015.3	1037.6	1034.4
45°	7842.5	3189.2	1158.6	988.3	916.7	921.5	918.2	943.7	983.5	1016.9	1016.9
47.5°	7933.2	2926.7	1093.3	905.5	886.4	886.4	876.9	902.3	939.0	978.8	981.9
50°	8019.1	2756.3	1047.2	841.9	848.2	843.4	840.3	864.2	913.5	961.2	969.1
52.5°	8106.7	2699.1	1005.8	795.8	808.4	802.1	805.3	838.7	894.4	943.7	951.7
55°	8229.2	2735.7	962.8	763.8	770.3	768.6	781.4	819.6	868.9	918.2	921.5
57.5°	8380.4	2869.3	926.2	740.0	733.7	743.2	763.8	800.5	848.2	907.2	911.9
58°	8410.6	2901.2	919.8	733.7	725.7	740.0	760.7	795.8	845.1	907.2	911.9
60°	8456.8	3014.1	903.9	720.9	698.7	724.0	749.5	784.6	838.7	915.0	924.6
62.5°	8234.0	3036.4	899.2	706.6	670.0	701.8	732.0	771.8	832.3	942.1	962.8
65°	7462.1	2807.3	865.7	682.7	646.1	684.4	716.2	762.3	851.4	1023.3	1032.9
67.5°	5990.1	2331.4	784.6	646.1	619.1	663.6	703.4	762.3	859.4	1036.0	1042.4
70°	4118.6	1752.1	682.7	606.3	587.3	638.1	698.7	779.8	832.3	980.3	961.2
72.5°	2151.6	1219.1	598.3	560.2	549.0	615.9	744.8	762.3	800.5	915.0	896.0
75°	1083.7	829.1	526.7	507.7	506.1	607.9	833.9	733.7	767.1	860.9	902.3
77.5°	639.8	649.3	469.4	458.3	466.3	593.6	835.4	705.0	728.9	792.5	837.1
80°	437.6	536.3	424.9	421.8	428.1	545.8	770.3	670.0	684.4	749.5	797.3
82.5°	246.6	296.0	372.4	393.1	389.8	447.2	665.2	609.5	627.1	886.4	937.3
85°	119.4	178.2	311.9	367.6	332.6	297.6	541.0	541.0	545.8	634.9	642.9
87.5°	44.6	79.6	210.1	291.2	232.3	178.2	367.6	383.5	426.5	439.3	448.8
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)