

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: P196298

Luminaire Tested: **NAV-AF-02-D-UNV-T3-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196298
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (p24135)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-02-D-UNV-T3-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8212.2 lumens
Efficiency: N/A
Efficacy: 124.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

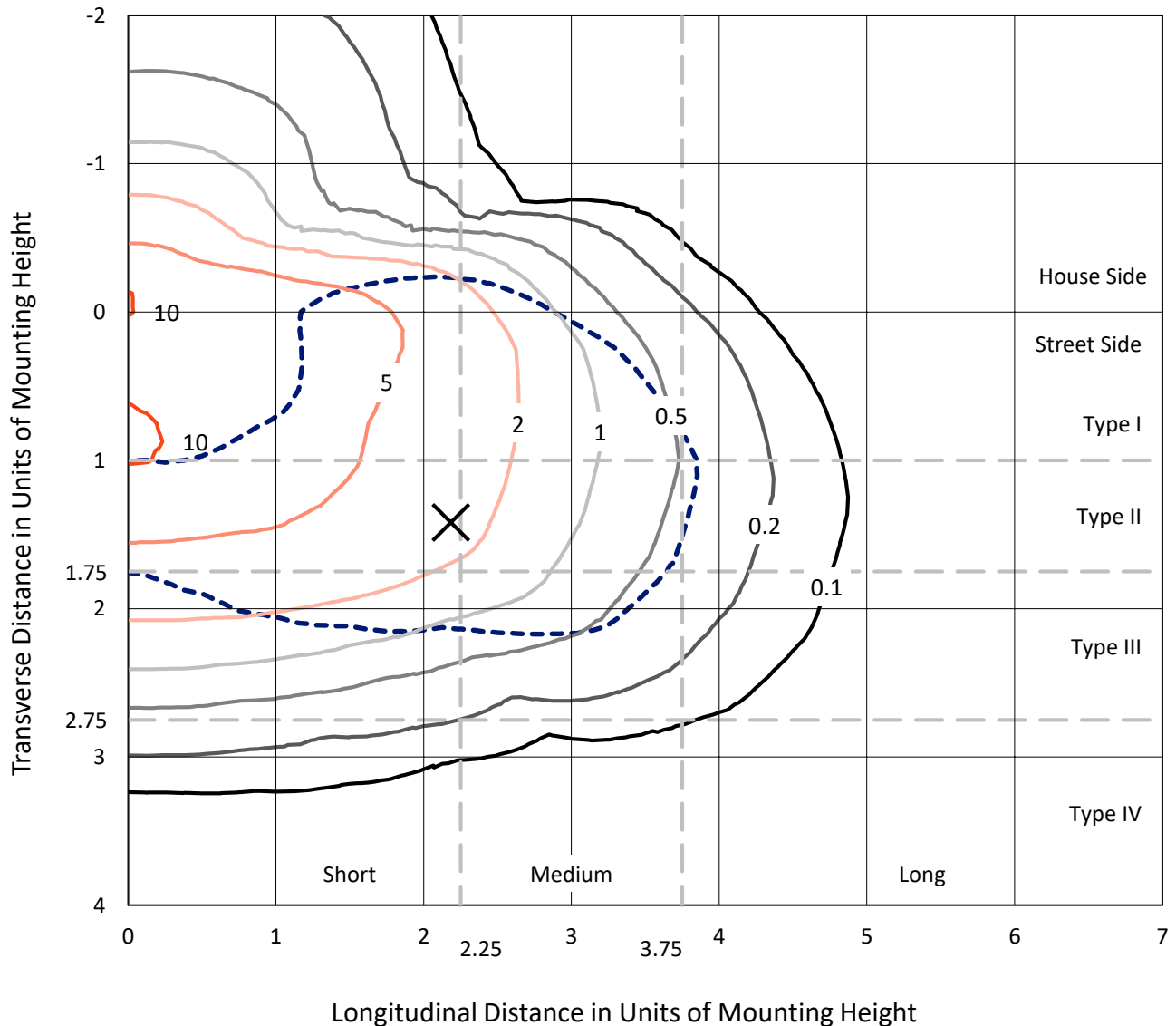
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

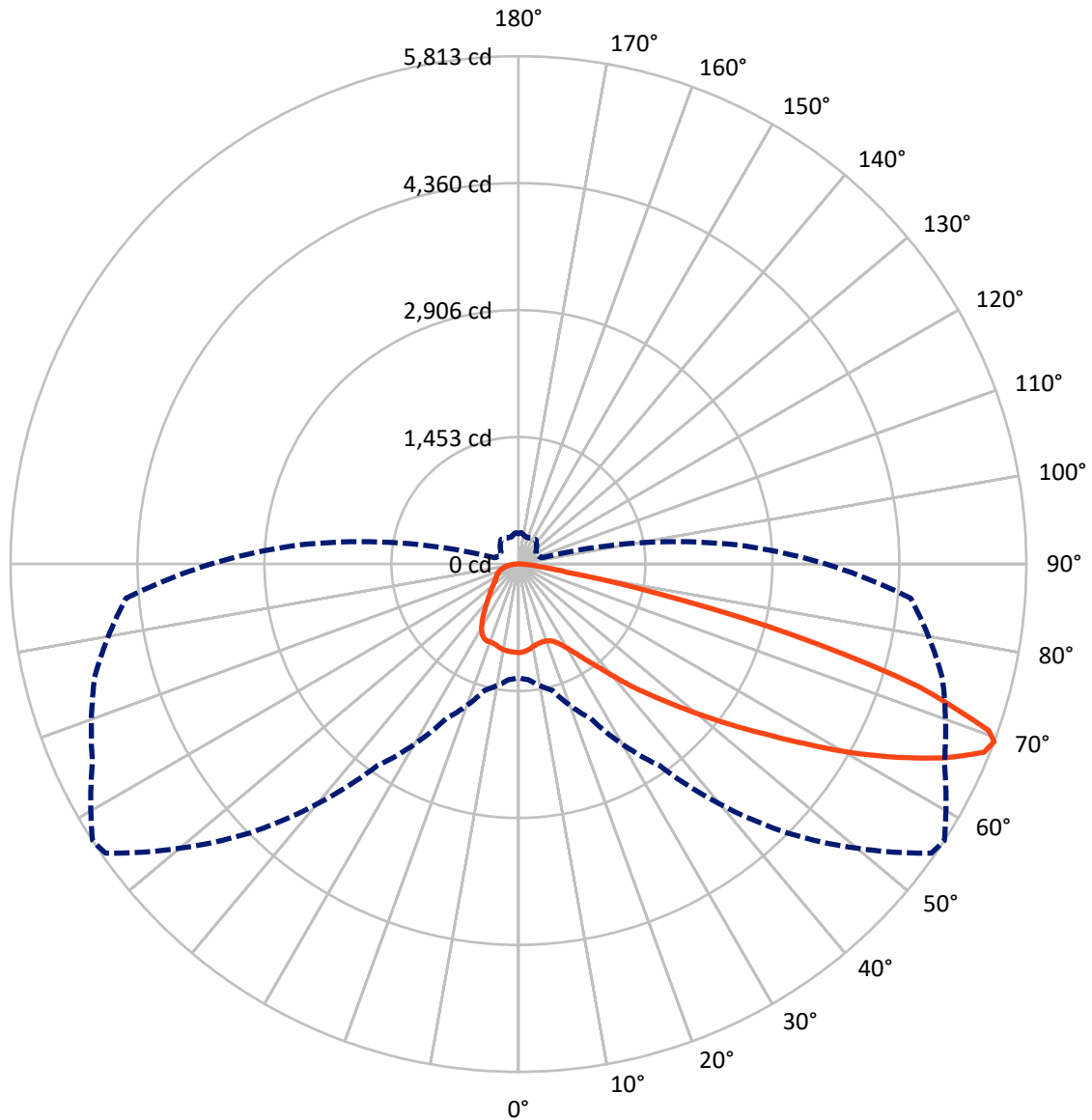
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 10.4 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1812.2	0.0	1812.2
	% Fixture	22.1	0.0	22.1
Street Side	Lumens	6400.1	0.0	6400.1
	% Fixture	77.9	0.0	77.9
Total	Lumens	8212.2	0.0	8212.2
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.0	1.2
10°-20°	270.1	3.3
20°-30°	449.3	5.5
30°-40°	733.7	8.9
40°-50°	1238.3	15.1
50°-60°	1926.3	23.5
60°-70°	2294.6	27.9
70°-80°	1069.0	13.0
80°-90°	136.0	1.7
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°	8212.2	100.0
0°-180°	8212.2	100.0



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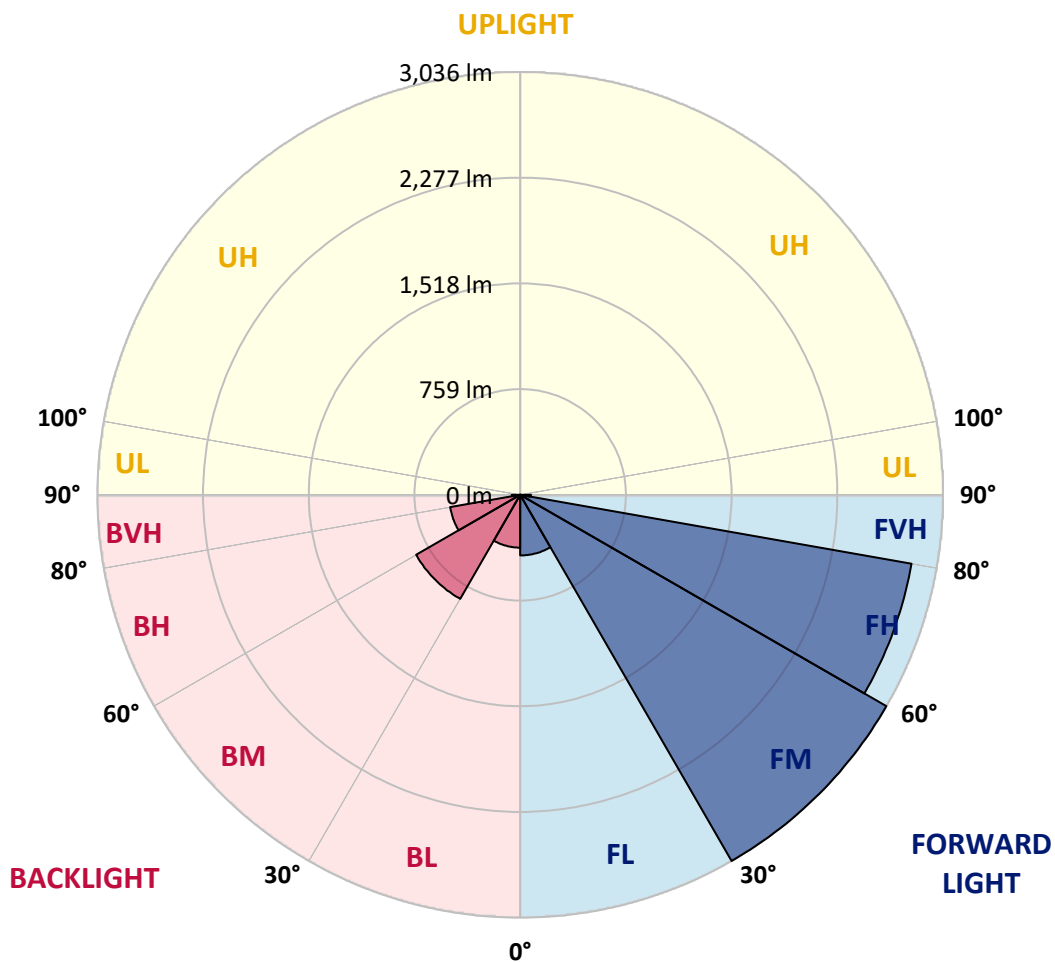
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	434.9	5.3			
FM (30°-60°)	3035.8	37.0			
FH (60°-80°)	2852.9	34.7			G2/5000
FVH (80°-90°)	76.4	0.9			G1/100
BL (0°-30°)	379.5	4.6	B1/500		
BM (30°-60°)	862.5	10.5	B1/1000		
BH (60°-80°)	510.6	6.2	B2/1000		G2/1000
BVH (80°-90°)	59.5	0.7			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
0°	1014.7	1014.7	1014.7	1014.7	1014.7	1014.7	1014.7	1014.7	1014.7	1014.7	1014.7
2.5°	1008.9	1008.9	1011.6	1011.6	1011.6	1010.5	1007.3	1008.4	1006.3	1004.7	1002.1
5°	988.4	989.5	992.7	993.7	995.2	995.7	995.7	995.2	995.7	995.7	994.2
7.5°	960.0	961.1	964.7	966.9	971.6	975.8	977.9	977.9	980.5	982.6	983.2
10°	942.6	942.6	944.8	944.8	948.5	950.5	957.4	956.9	964.2	971.1	974.3
12.5°	940.6	940.6	939.5	935.8	933.7	933.2	940.1	941.1	952.2	964.2	970.1
15°	947.5	947.5	944.3	936.9	929.0	925.4	932.1	934.3	946.3	960.6	969.5
17.5°	969.5	968.9	962.1	947.5	933.7	927.9	930.1	932.1	943.2	959.5	970.6
20°	1018.3	1018.3	1003.6	976.8	953.2	939.5	936.4	937.9	945.8	961.1	975.3
22.5°	1104.1	1105.7	1079.4	1035.2	994.7	965.8	953.2	954.7	958.4	973.1	989.0
25°	1230.3	1226.0	1188.8	1126.2	1063.1	1013.6	987.9	989.5	989.5	1003.1	1019.5
27.5°	1363.8	1364.8	1311.2	1243.9	1160.8	1087.3	1046.3	1045.8	1045.1	1058.3	1075.7
30°	1514.7	1515.2	1453.2	1375.4	1280.2	1186.1	1124.6	1124.0	1119.3	1135.6	1158.2
32.5°	1679.8	1679.3	1607.3	1519.4	1413.7	1307.0	1227.1	1226.6	1222.9	1245.0	1272.3
35°	1862.8	1862.8	1791.3	1683.0	1568.8	1450.0	1357.5	1356.9	1359.1	1389.1	1414.8
37.5°	2083.0	2087.7	2001.5	1870.1	1745.5	1618.8	1511.0	1507.8	1492.1	1542.6	1585.2
40°	2312.8	2325.9	2236.6	2083.0	1948.4	1817.6	1698.7	1696.6	1683.0	1736.6	1805.4
42.5°	2561.5	2591.4	2492.1	2335.4	2188.7	2047.2	1928.0	1922.1	1869.5	1953.2	2060.9
45°	2887.5	2906.9	2762.8	2620.9	2482.6	2321.2	2179.3	2148.2	2095.6	2202.9	2342.8
47.5°	3109.3	3099.8	3009.9	2914.8	2825.9	2671.3	2453.1	2413.8	2349.6	2491.5	2645.6
50°	3247.1	3253.9	3203.4	3198.7	3194.0	3086.1	2762.3	2715.0	2640.8	2809.1	2988.9
52.5°	3338.0	3307.0	3315.9	3423.2	3553.0	3501.6	3111.9	3059.3	2983.1	3151.4	3354.3
55°	3300.1	3259.1	3341.7	3553.0	3858.5	3870.0	3495.7	3441.6	3376.4	3515.2	3793.8
57.5°	3143.5	3164.0	3294.4	3588.3	4067.3	4200.2	3936.8	3881.6	3753.3	3894.3	4211.3
60°	2923.2	2964.7	3164.0	3532.6	4213.4	4457.3	4421.1	4384.3	4163.4	4263.4	4649.7
62.5°	2686.6	2727.6	2972.6	3437.4	4147.7	4685.0	4896.4	4873.7	4616.1	4618.7	4927.9
65°	2336.9	2353.8	2604.0	3177.7	3965.3	4890.5	5372.1	5352.2	5048.8	4922.1	5005.7
67.5°	1765.0	1786.0	1991.6	2508.4	3410.0	4779.1	5752.3	5749.1	5309.0	5034.7	4820.7
69°	1303.3	1329.1	1496.8	1947.4	2819.7	4354.3	5770.2	5812.7	5379.5	5023.0	4507.8
70°	953.7	983.2	1138.2	1545.7	2348.5	3885.3	5617.1	5708.6	5352.7	4950.0	4263.9
72.5°	405.4	415.3	491.6	697.7	1191.3	2342.8	4600.8	4793.2	4834.3	4435.2	3331.1
75°	253.9	257.1	287.0	358.0	530.0	968.9	2979.4	3241.8	3609.3	3441.1	2230.2
77.5°	191.4	194.1	211.3	246.5	329.1	361.7	1382.2	1648.3	2067.3	2024.1	1109.9
80°	146.7	148.2	159.8	179.3	231.9	226.6	448.5	563.6	862.8	761.3	392.7
82.5°	115.2	115.7	125.6	129.3	161.9	152.4	225.0	250.8	348.6	289.7	191.9
85°	102.0	103.5	113.5	94.6	103.5	92.0	123.6	134.1	185.1	174.5	72.5
87.5°	52.1	54.7	95.1	80.9	52.1	43.7	54.1	58.3	75.2	81.5	35.2
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°	1014.7	1014.7	1014.7	1014.7	1014.7	1014.7	1014.7	1014.7	1014.7	1014.7	1014.7
2.5°	1002.6	1003.1	1004.7	1007.3	1011.6	1016.8	1023.2	1029.4	1033.1	1035.7	1034.7
5°	994.2	994.7	997.9	1002.6	1007.9	1015.8	1026.2	1034.2	1039.9	1043.6	1043.1
7.5°	983.7	985.3	991.5	996.9	1004.2	1010.5	1018.9	1026.2	1032.1	1035.7	1035.2
10°	975.8	977.3	985.3	992.1	998.4	999.4	997.9	995.7	995.2	997.9	996.9
12.5°	972.1	975.3	982.6	987.4	984.7	974.8	963.2	958.4	956.9	962.1	962.7
15°	973.1	975.8	982.1	979.0	964.7	948.0	941.6	945.3	948.5	951.7	952.2
17.5°	975.8	977.3	979.0	967.4	947.5	936.4	934.3	930.6	921.2	915.8	915.3
20°	980.5	982.6	980.0	961.6	943.8	929.0	903.8	881.2	859.6	848.0	843.3
22.5°	996.9	998.4	990.5	972.6	945.3	897.4	846.5	807.5	774.5	756.6	749.7
25°	1028.9	1031.5	1020.5	997.9	926.4	842.8	770.8	718.2	676.7	655.1	649.3
27.5°	1085.1	1087.8	1075.7	1016.8	882.2	769.7	682.4	630.3	594.6	576.2	573.6
30°	1169.2	1172.9	1161.9	1016.3	814.9	676.7	596.2	565.7	545.2	532.5	532.0
32.5°	1286.0	1299.7	1254.4	998.4	731.8	582.6	531.0	520.5	510.6	502.1	502.1
35°	1434.3	1466.3	1345.9	961.1	640.4	518.4	494.7	484.8	472.1	463.2	462.2
37.5°	1611.5	1661.4	1411.2	894.9	561.5	487.3	472.6	456.3	436.4	419.0	414.8
40°	1854.8	1866.4	1443.2	787.1	502.6	470.6	452.1	431.7	406.4	387.0	384.8
42.5°	2099.3	2061.5	1436.8	671.4	468.9	455.3	431.1	408.5	385.9	369.6	369.6
45°	2377.4	2231.8	1389.1	555.2	438.4	437.9	411.6	390.2	372.8	360.7	358.0
47.5°	2643.5	2384.8	1306.5	469.5	406.9	420.6	399.1	381.7	365.9	354.4	352.3
50°	2966.3	2562.0	1218.7	409.6	376.4	405.4	393.8	384.8	369.6	349.6	347.5
52.5°	3287.0	2769.1	1150.9	364.4	349.6	393.2	396.9	398.0	383.8	344.9	342.3
55°	3631.4	2990.5	1079.4	329.1	327.5	387.5	404.3	403.2	396.4	346.0	341.8
57.5°	3958.9	3212.9	972.6	304.4	310.2	381.7	405.9	389.0	377.0	351.2	344.3
60°	4230.2	3396.9	816.0	287.0	295.4	370.1	395.4	370.1	349.6	350.2	343.8
62.5°	4362.2	3448.4	624.1	267.1	283.4	351.2	380.1	355.9	337.0	352.3	348.6
65°	4261.7	3301.8	444.8	248.7	268.6	329.1	371.2	343.8	330.7	362.7	358.5
67.5°	3901.1	2902.1	322.8	232.4	254.5	306.5	354.4	332.8	324.4	370.6	361.2
69°	3517.8	2505.7	279.7	222.9	244.5	294.4	343.3	327.0	319.7	359.6	346.0
70°	3199.2	2200.3	258.2	217.2	236.1	287.6	334.9	323.4	315.0	346.5	330.2
72.5°	2293.9	1422.2	217.2	199.8	214.0	272.3	316.5	309.6	297.1	312.8	302.3
75°	1385.9	742.4	184.5	181.9	190.9	251.3	294.9	286.5	273.9	275.5	270.3
77.5°	636.7	342.8	154.6	160.9	166.6	225.0	268.6	259.2	247.7	243.5	244.0
80°	279.2	200.3	129.3	137.2	140.3	202.4	240.3	229.8	217.2	239.8	222.4
82.5°	150.9	116.2	101.0	106.2	115.2	176.2	208.7	195.1	183.0	213.0	172.0
85°	61.0	59.4	68.3	73.7	79.9	126.7	174.5	160.4	145.7	130.4	127.3
87.5°	26.3	28.4	33.7	35.7	42.6	78.9	117.2	102.5	103.0	88.3	86.7
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)