

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: P196013

Luminaire Tested: **NAV-AF-05-D-UNV-AFL-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196013
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-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20764.9 lumens
Efficiency: N/A
Efficacy: 128.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B2 - U0 - G2

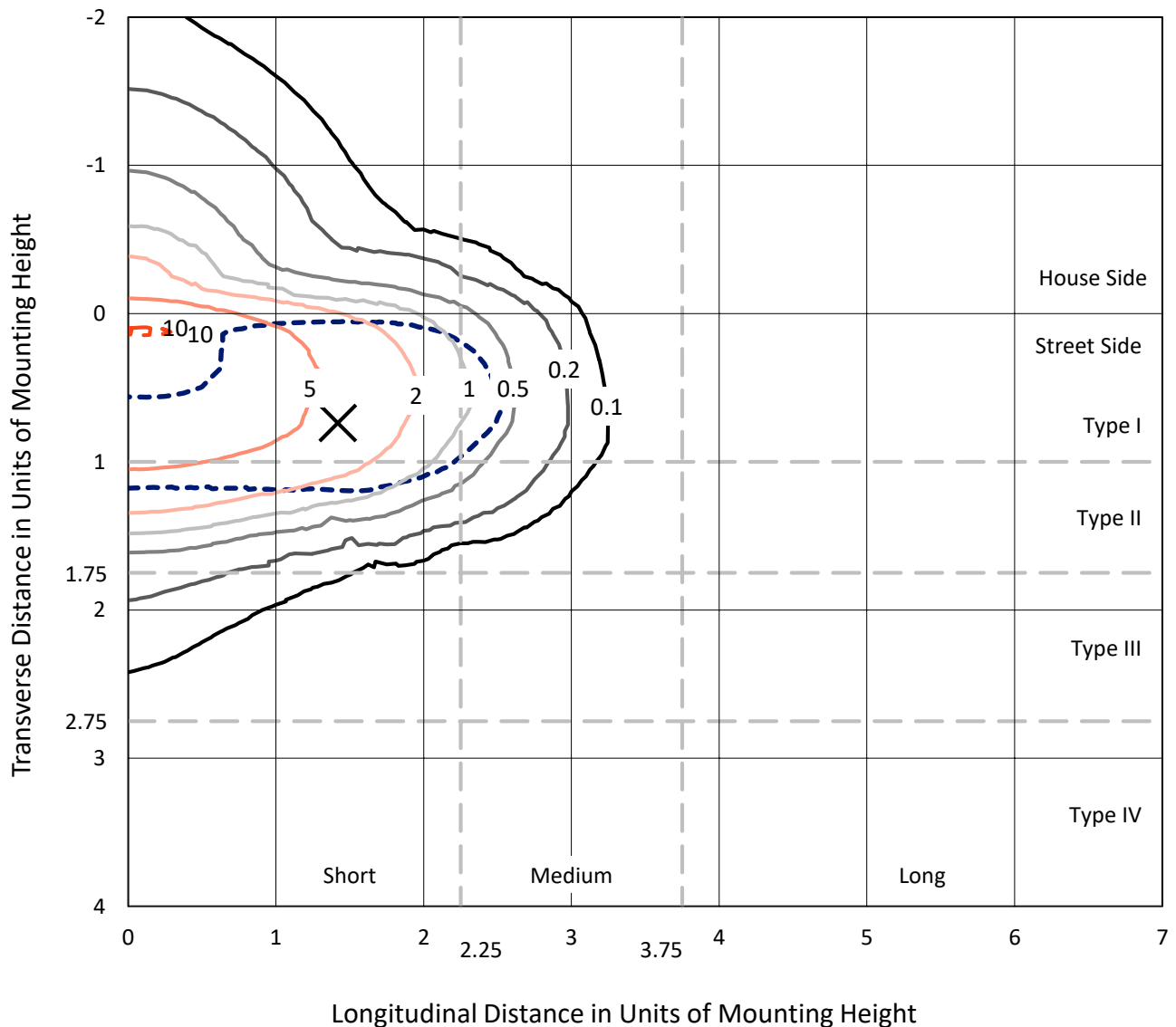
Input Watts (W): 162
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

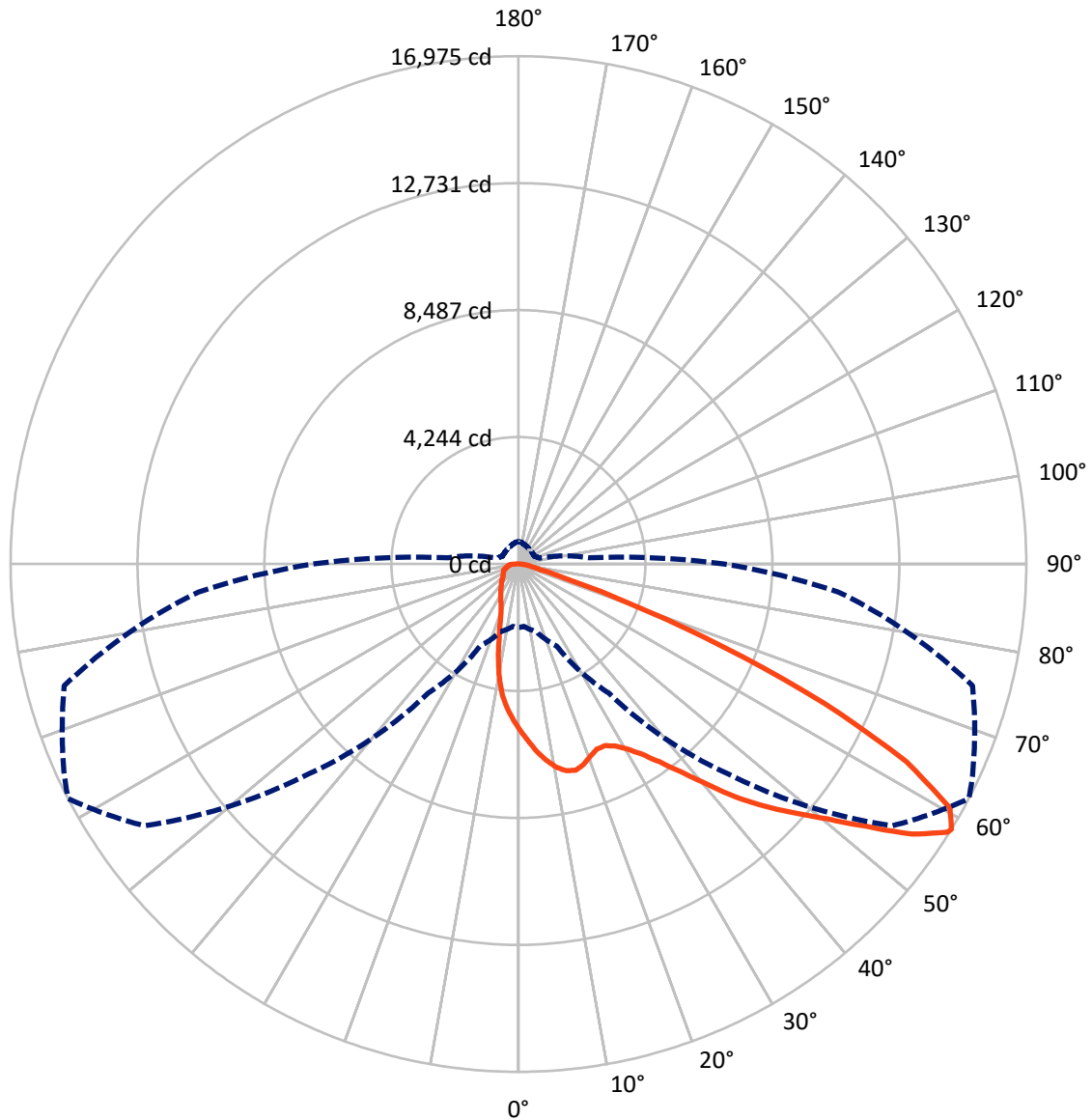
✕ Max cd
 - - - 1/2 Max cd



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	3188.2	0.0	3188.2
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	17576.7	0.0	17576.7
	% Fixture	84.6	0.0	84.6
Total	Lumens	20764.9	0.0	20764.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	495.5	2.4
10°-20°	1250.6	6.0
20°-30°	2026.8	9.8
30°-40°	3236.0	15.6
40°-50°	4706.8	22.7
50°-60°	4925.3	23.7
60°-70°	3002.6	14.5
70°-80°	839.7	4.0
80°-90°	281.5	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°	20764.9	100.0
0°-180°	20764.9	100.0



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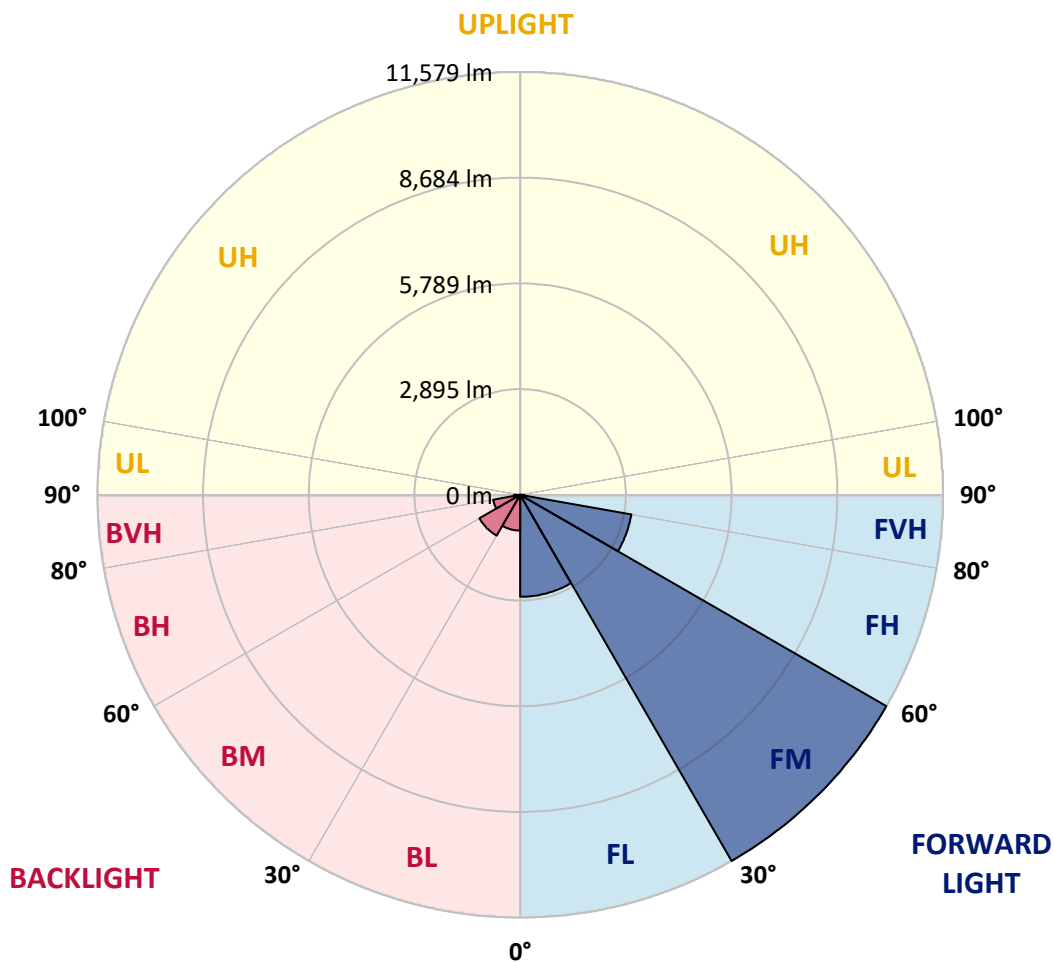
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2792.9	13.5			
FM (30°-60°)	11578.7	55.8			
FH (60°-80°)	3091.8	14.9			G2/5000
FVH (80°-90°)	113.2	0.5			G2/225
BL (0°-30°)	980.1	4.7	B2/1000		
BM (30°-60°)	1289.3	6.2	B2/2500		
BH (60°-80°)	750.5	3.6	B2/1000		G2/1000
BVH (80°-90°)	168.2	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°	5544.1	5544.1	5544.1	5544.1	5544.1	5544.1	5544.1	5544.1	5544.1	5544.1	5544.1
2.5°	6292.9	6289.0	6235.8	6200.7	6159.2	6063.2	5967.2	5895.8	5859.5	5720.5	5585.6
5°	6813.3	6797.7	6767.8	6730.3	6675.8	6555.1	6403.3	6272.1	6220.3	5973.6	5725.8
7.5°	6538.2	6562.8	6655.0	6758.8	6867.8	6875.6	6767.8	6612.1	6555.1	6225.4	5862.0
10°	5776.4	5766.0	5881.6	6084.0	6443.5	6799.0	6976.8	6900.2	6840.6	6464.2	5998.3
12.5°	5545.4	5542.8	5562.3	5614.2	5840.0	6328.0	6923.6	7089.8	7069.0	6717.3	6143.6
15°	5615.5	5618.0	5616.7	5623.3	5685.6	5917.9	6626.5	7153.3	7218.2	6967.7	6291.6
17.5°	5840.0	5830.9	5802.4	5771.2	5780.3	5863.3	6305.9	7044.3	7239.0	7190.9	6416.2
20°	6186.5	6186.5	6109.9	6022.9	5965.8	5984.1	6172.2	6857.5	7143.0	7380.4	6509.6
22.5°	6621.3	6627.7	6514.9	6356.5	6226.7	6177.4	6248.8	6718.5	7026.1	7555.6	6592.7
25°	7161.1	7159.8	6995.0	6767.8	6562.8	6444.7	6443.5	6725.1	6989.8	7760.7	6679.7
27.5°	7829.5	7768.5	7576.4	7253.2	6963.8	6783.5	6701.7	6888.6	7066.3	8012.5	6796.5
30°	8583.5	8521.2	8269.4	7854.1	7462.2	7198.7	7063.8	7171.5	7300.0	8333.0	6972.9
32.5°	9329.7	9343.9	9048.1	8579.6	8076.0	7704.9	7505.0	7571.2	7660.8	8725.0	7211.7
35°	10422.4	10421.1	10034.4	9449.1	8850.8	8336.8	8083.9	8118.9	8200.6	9277.8	7546.5
37.5°	11237.4	11224.4	10975.2	10457.4	9783.9	9167.5	8801.5	8806.7	8876.8	9972.1	7987.8
40°	11320.5	11317.9	11316.6	11242.6	10781.9	10200.5	9742.4	9647.7	9676.2	10709.3	8456.3
42.5°	10685.8	10780.6	11053.1	11471.1	11599.5	11294.5	10861.1	10649.5	10587.2	11555.4	8952.0
45°	9781.4	9829.3	10306.9	11246.5	12010.9	12322.4	11996.7	11550.1	11443.8	12378.1	9355.6
47.5°	9360.8	9340.1	9616.5	10640.4	11970.7	13139.9	13163.3	12431.4	12251.0	13088.0	9699.5
50°	8458.9	8431.7	8780.7	9748.8	11532.0	13546.1	14361.2	13391.8	13058.2	13762.9	10011.0
52.5°	6661.5	6635.5	7104.0	8351.2	10550.9	13394.3	15370.9	14570.1	14001.6	14413.1	10301.7
55°	4334.5	4337.1	4783.6	6069.7	8538.1	12509.3	15844.5	15931.4	15294.2	15063.3	10536.6
57.5°	2386.6	2364.6	2682.5	3472.8	5873.7	10499.0	15450.0	16912.5	16580.4	15621.3	10706.6
58°	2121.9	2095.9	2341.2	3022.5	5266.4	9931.8	15251.4	16974.8	16745.2	15713.4	10731.3
60°	1511.9	1467.8	1430.2	1703.9	3034.2	7161.1	13927.7	16571.3	16793.2	15897.7	10707.9
62.5°	1274.4	1223.8	1088.8	1078.5	1428.9	3502.7	11014.2	14553.2	15174.9	15473.4	10331.6
65°	1183.6	1132.9	955.1	891.6	969.5	1511.9	6810.7	11237.4	12068.0	13997.8	9384.2
67.5°	1118.7	1059.0	868.2	785.1	800.8	904.6	2890.1	7349.3	8312.2	10915.6	7528.4
70°	1060.3	994.1	799.4	703.4	690.4	687.8	1129.0	3837.5	4765.4	7143.0	5043.1
72.5°	994.1	929.2	738.5	635.9	607.3	558.0	678.7	1585.9	2173.8	3501.4	2311.4
75°	898.0	844.9	671.0	580.1	530.8	453.0	500.9	760.5	937.0	1340.6	1073.3
77.5°	790.3	747.5	602.2	533.4	467.2	369.9	382.9	515.3	578.8	755.3	621.6
80°	559.3	574.9	525.6	469.8	411.4	298.5	294.6	377.7	415.3	507.4	417.9
82.5°	385.4	397.1	428.3	371.1	332.3	232.3	216.8	262.2	281.6	306.3	202.4
85°	275.2	267.3	297.2	266.1	244.0	147.9	138.8	166.1	177.8	186.9	97.3
87.5°	167.5	166.1	171.3	137.6	127.2	75.3	68.7	79.2	84.4	81.7	46.7
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°	5544.1	5544.1	5544.1	5544.1	5544.1	5544.1	5544.1	5544.1	5544.1	5544.1	5544.1
2.5°	5535.0	5471.5	5332.5	5220.9	5100.2	5008.1	4916.0	4864.0	4806.9	4774.5	4770.6
5°	5596.0	5466.2	5170.3	4895.2	4612.3	4357.9	4108.8	3924.4	3774.0	3688.2	3683.0
7.5°	5663.5	5459.7	5002.9	4526.7	4023.1	3522.1	3079.6	2766.9	2565.7	2472.3	2465.7
10°	5715.4	5432.5	4799.2	4058.1	3260.0	2598.1	2195.9	2011.5	1950.6	1935.0	1932.4
12.5°	5777.7	5413.0	4542.2	3457.3	2491.7	1977.8	1855.8	1844.2	1857.1	1864.9	1866.2
15°	5836.0	5375.4	4195.7	2791.5	1950.6	1767.6	1770.1	1794.9	1820.8	1832.4	1833.7
17.5°	5863.3	5283.2	3740.2	2199.8	1706.6	1672.8	1702.7	1735.1	1758.5	1767.6	1767.6
20°	5863.3	5135.3	3212.0	1781.9	1579.4	1585.9	1622.2	1646.8	1652.1	1644.3	1640.4
22.5°	5838.7	4952.3	2698.0	1554.8	1475.6	1500.3	1528.8	1511.9	1451.0	1404.2	1395.1
25°	5816.6	4735.5	2203.6	1415.9	1384.8	1417.2	1405.5	1289.9	1196.5	1148.6	1140.7
27.5°	5780.3	4473.5	1790.9	1301.7	1296.5	1322.5	1207.0	1095.3	1048.6	1022.6	1017.4
30°	5771.2	4189.2	1498.9	1200.4	1209.5	1173.2	1040.9	1004.4	994.1	979.8	973.3
32.5°	5801.1	3905.0	1315.9	1117.4	1126.5	1007.1	956.5	961.7	960.3	942.1	935.7
35°	5882.8	3628.6	1199.1	1042.1	1016.2	901.9	908.5	924.0	924.0	901.9	894.2
37.5°	6025.6	3371.6	1125.1	978.6	888.9	847.4	864.3	885.1	885.1	869.5	863.1
40°	6177.4	3121.1	1069.4	927.9	808.5	809.8	826.6	842.3	848.7	851.3	846.2
42.5°	6315.0	2861.6	1009.7	873.4	772.2	781.2	789.0	800.8	828.0	846.2	843.5
45°	6395.4	2600.8	944.8	805.9	747.5	751.5	748.8	769.6	802.0	829.3	829.3
47.5°	6469.4	2386.6	891.6	738.5	722.8	722.8	715.0	735.8	765.7	798.1	800.8
50°	6539.5	2247.7	854.0	686.5	691.7	687.8	685.3	704.7	744.9	783.9	790.3
52.5°	6610.8	2201.0	820.2	648.9	659.3	654.1	656.6	683.9	729.4	769.6	776.1
55°	6710.8	2230.9	785.1	623.0	628.1	626.9	637.2	668.4	708.6	748.8	751.5
57.5°	6834.0	2339.9	755.3	603.4	598.3	606.1	623.0	652.7	691.7	739.7	743.6
58°	6858.7	2365.9	750.1	598.3	591.8	603.4	620.3	648.9	689.2	739.7	743.6
60°	6896.3	2457.9	737.1	587.9	569.7	590.4	611.2	639.8	683.9	746.2	754.0
62.5°	6714.6	2476.2	733.3	576.2	546.4	572.3	597.0	629.4	678.7	768.2	785.1
65°	6085.2	2289.3	705.9	556.8	526.9	558.0	584.0	621.6	694.3	834.4	842.3
67.5°	4884.8	1901.3	639.8	526.9	504.8	541.1	573.6	621.6	700.8	844.9	850.1
70°	3358.7	1428.9	556.8	494.5	478.8	520.4	569.7	635.9	678.7	799.4	783.9
72.5°	1754.6	994.1	487.9	456.8	447.7	502.3	607.3	621.6	652.7	746.2	730.7
75°	883.8	676.2	429.5	414.0	412.7	495.7	680.1	598.3	625.5	702.1	735.8
77.5°	521.7	529.5	382.9	373.8	380.2	484.1	681.3	574.9	594.3	646.3	682.6
80°	356.9	437.3	346.5	343.9	349.1	445.1	628.1	546.4	558.0	611.2	650.2
82.5°	201.1	241.4	303.7	320.6	317.9	364.7	542.5	497.1	511.4	722.8	764.3
85°	97.3	145.4	254.4	299.8	271.2	242.6	441.2	441.2	445.1	517.8	524.3
87.5°	36.3	64.9	171.3	237.5	189.5	145.4	299.8	312.7	347.8	358.1	366.0
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)