

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: P196018

Luminaire Tested: **NAV-AF-04-D-UNV-AFL-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196018
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-04-D-UNV-AFL-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 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: 20660.5 lumens
Efficiency: N/A
Efficacy: 120.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B2 - U0 - G2

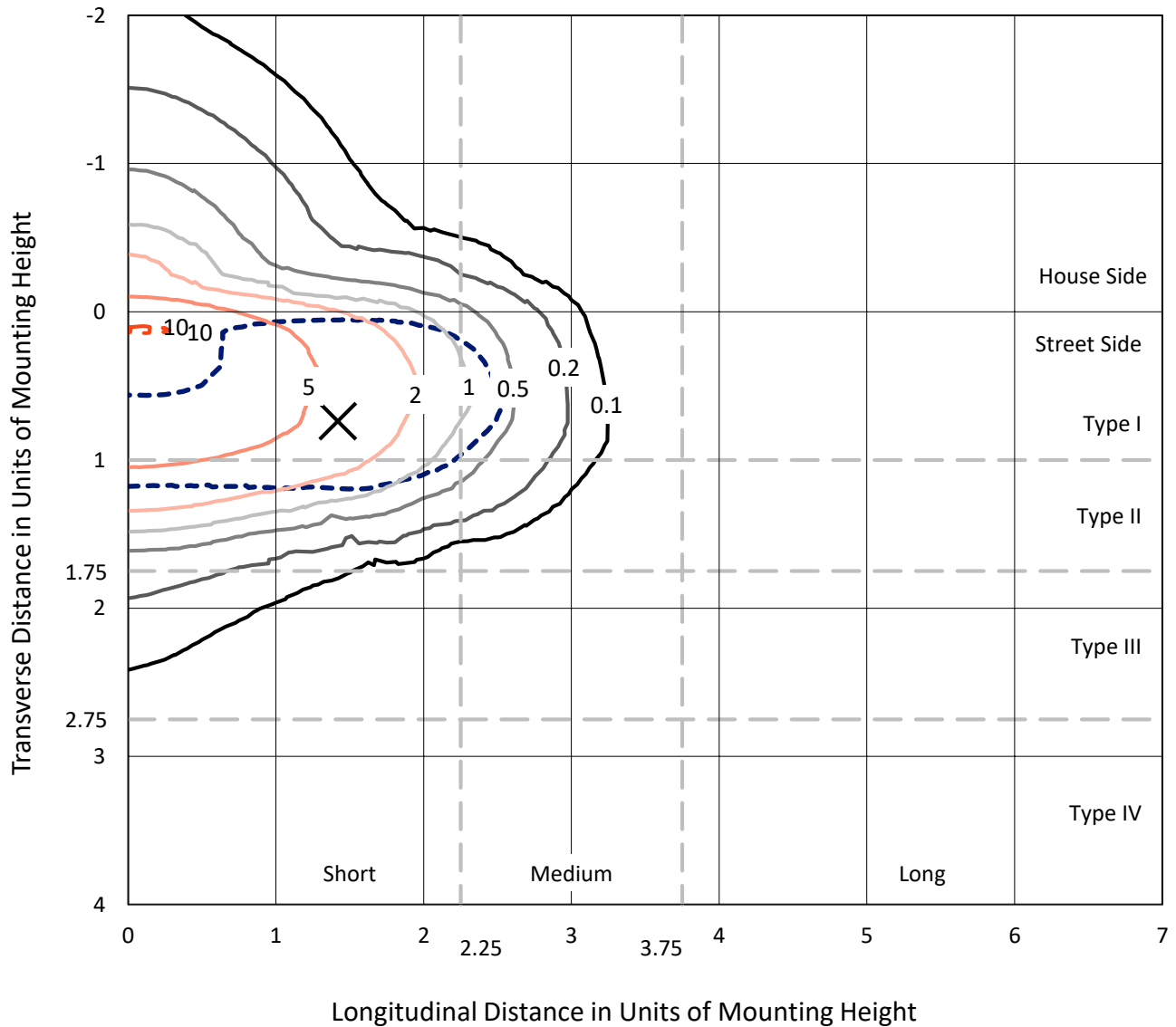
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

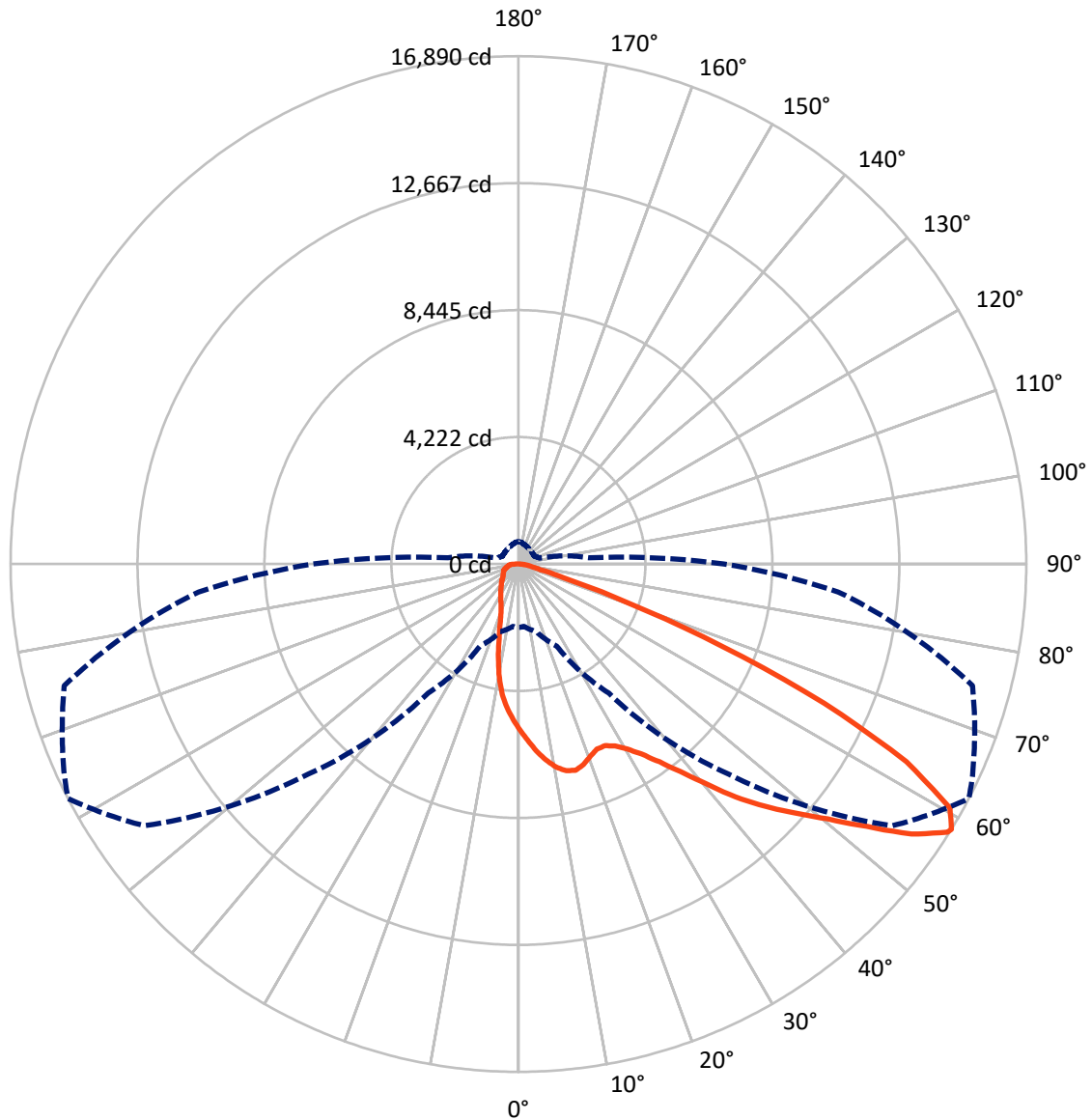
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.3 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	3172.2	0.0	3172.2
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	17488.4	0.0	17488.4
	% Fixture	84.6	0.0	84.6
Total	Lumens	20660.5	0.0	20660.5
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	493.1	2.4
10°-20°	1244.4	6.0
20°-30°	2016.6	9.8
30°-40°	3219.7	15.6
40°-50°	4683.2	22.7
50°-60°	4900.5	23.7
60°-70°	2987.5	14.5
70°-80°	835.5	4.0
80°-90°	280.1	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°	20660.5	100.0
0°-180°	20660.5	100.0



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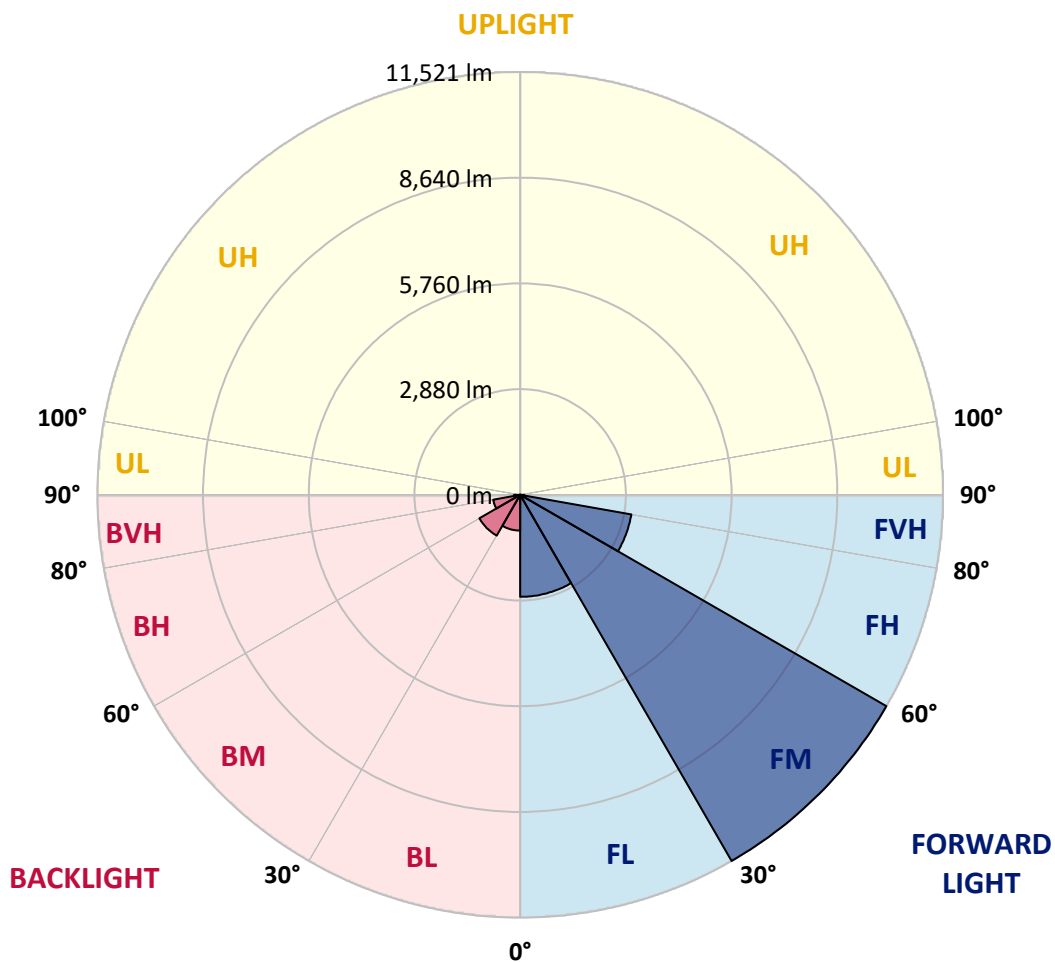
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2778.9	13.5			
FM (30°-60°)	11520.6	55.8			
FH (60°-80°)	3076.2	14.9			G2/5000
FVH (80°-90°)	112.7	0.5			G2/225
BL (0°-30°)	975.1	4.7	B2/1000		
BM (30°-60°)	1282.9	6.2	B2/2500		
BH (60°-80°)	746.8	3.6	B2/1000		G2/1000
BVH (80°-90°)	167.4	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°	5516.3	5516.3	5516.3	5516.3	5516.3	5516.3	5516.3	5516.3	5516.3	5516.3	5516.3
2.5°	6261.3	6257.4	6204.5	6169.6	6128.3	6032.8	5937.2	5866.1	5830.0	5691.8	5557.6
5°	6779.1	6763.5	6733.9	6696.4	6642.2	6522.1	6371.0	6240.6	6189.0	5943.7	5697.0
7.5°	6505.4	6529.9	6621.6	6724.9	6833.3	6841.1	6733.9	6578.9	6522.1	6194.2	5832.6
10°	5747.3	5737.0	5852.0	6053.4	6411.0	6764.9	6941.7	6865.6	6806.2	6431.7	5968.2
12.5°	5517.5	5514.9	5534.3	5585.9	5810.7	6296.2	6888.9	7054.1	7033.4	6683.6	6112.7
15°	5587.3	5589.8	5588.6	5595.0	5657.0	5888.1	6593.1	7117.4	7181.9	6932.7	6259.9
17.5°	5810.7	5801.6	5773.2	5742.2	5751.2	5833.9	6274.2	7009.0	7202.6	7154.8	6383.9
20°	6155.4	6155.4	6079.2	5992.7	5935.9	5954.0	6141.2	6823.0	7107.1	7343.4	6476.9
22.5°	6588.0	6594.5	6482.1	6324.6	6195.4	6146.4	6217.4	6684.8	6990.8	7517.7	6559.6
25°	7125.2	7123.8	6959.9	6733.9	6529.9	6412.4	6411.0	6691.2	6954.6	7721.6	6646.1
27.5°	7790.1	7729.4	7538.3	7216.8	6928.9	6749.3	6668.0	6854.0	7030.8	7972.2	6762.3
30°	8540.3	8478.3	8227.9	7814.6	7424.7	7162.6	7028.3	7135.5	7263.3	8291.1	6937.9
32.5°	9282.8	9297.0	9002.6	8536.4	8035.5	7666.2	7467.3	7533.2	7622.2	8681.1	7175.5
35°	10370.1	10368.7	9984.0	9401.6	8806.4	8295.0	8043.3	8078.0	8159.5	9231.2	7508.7
37.5°	11181.0	11168.1	10920.1	10404.9	9734.7	9121.4	8757.3	8762.4	8832.2	9922.0	7947.6
40°	11263.6	11261.1	11259.7	11186.1	10727.7	10149.2	9693.4	9599.2	9627.6	10655.4	8413.8
42.5°	10632.1	10726.5	10997.6	11413.4	11541.2	11237.7	10806.5	10596.0	10534.0	11497.4	8907.0
45°	9732.1	9779.9	10255.1	11190.0	11950.5	12260.5	11936.3	11492.1	11386.3	12315.9	9308.6
47.5°	9313.8	9293.1	9568.2	10586.9	11910.5	13073.9	13097.1	12368.9	12189.4	13022.3	9650.8
50°	8416.4	8389.2	8736.6	9699.9	11474.0	13478.1	14289.0	13324.4	12992.6	13693.7	9960.7
52.5°	6628.0	6602.1	7068.3	8309.2	10497.8	13327.0	15293.6	14496.8	13931.4	14340.6	10250.0
55°	4312.8	4315.3	4759.6	6039.2	8495.1	12446.3	15764.9	15851.4	15217.4	14987.6	10483.7
57.5°	2374.6	2352.7	2669.0	3455.4	5844.2	10446.3	15372.4	16827.6	16497.0	15542.8	10652.8
58°	2111.2	2085.4	2329.5	3007.4	5239.9	9881.9	15174.8	16889.5	16661.0	15634.5	10677.4
60°	1504.4	1460.4	1422.9	1695.4	3018.9	7125.2	13857.7	16488.0	16708.8	15817.8	10654.1
62.5°	1268.0	1217.6	1083.4	1073.1	1421.7	3485.1	10958.9	14480.1	15098.7	15395.6	10279.6
65°	1177.6	1127.3	950.3	887.1	964.5	1504.4	6776.5	11181.0	12007.4	13927.5	9337.1
67.5°	1113.1	1053.6	863.9	781.2	796.7	900.0	2875.6	7312.4	8270.5	10860.7	7490.6
70°	1055.0	989.1	795.4	699.9	686.9	684.4	1123.4	3818.3	4741.5	7107.1	5017.8
72.5°	989.1	924.5	734.7	632.7	604.3	555.3	675.4	1577.9	2162.8	3483.8	2299.7
75°	893.5	840.6	667.6	577.1	528.1	450.6	498.4	756.7	932.3	1333.8	1067.9
77.5°	786.3	743.8	599.1	530.7	464.8	368.1	380.9	512.6	575.9	751.5	618.5
80°	556.5	572.0	522.9	467.4	409.3	297.0	293.1	375.7	413.2	504.9	415.8
82.5°	383.5	395.2	426.2	369.3	330.5	231.1	215.6	260.9	280.2	304.7	201.4
85°	273.7	266.0	295.7	264.7	242.7	147.2	138.2	165.3	176.9	186.0	96.9
87.5°	166.5	165.3	170.4	136.9	126.5	74.9	68.4	78.8	83.9	81.3	46.4
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°	5516.3	5516.3	5516.3	5516.3	5516.3	5516.3	5516.3	5516.3	5516.3	5516.3	5516.3
2.5°	5507.2	5443.9	5305.7	5194.7	5074.7	4982.9	4891.2	4839.6	4782.8	4750.5	4746.6
5°	5567.9	5438.7	5144.3	4870.6	4589.1	4336.0	4088.1	3904.7	3754.9	3669.7	3664.6
7.5°	5635.0	5432.3	4977.8	4503.8	4002.9	3504.4	3064.1	2753.0	2552.8	2459.8	2453.3
10°	5686.7	5405.2	4775.0	4037.8	3243.7	2585.1	2184.8	2001.4	1940.7	1925.3	1922.6
12.5°	5748.7	5385.8	4519.4	3439.9	2479.2	1967.9	1846.5	1834.9	1847.8	1855.5	1856.9
15°	5806.8	5348.4	4174.7	2777.5	1940.7	1758.7	1761.3	1785.8	1811.6	1823.2	1824.5
17.5°	5833.9	5256.6	3721.4	2188.7	1698.0	1664.4	1694.1	1726.4	1749.7	1758.7	1758.7
20°	5833.9	5109.4	3195.8	1772.9	1571.5	1577.9	1614.1	1638.6	1643.8	1636.0	1632.1
22.5°	5809.3	4927.5	2684.5	1546.9	1468.1	1492.7	1521.1	1504.4	1443.6	1397.1	1388.1
25°	5787.3	4711.8	2192.6	1408.7	1377.8	1410.0	1398.5	1283.5	1190.5	1142.7	1135.0
27.5°	5751.2	4451.0	1781.9	1295.2	1289.9	1315.8	1200.8	1089.9	1043.3	1017.5	1012.3
30°	5742.2	4168.1	1491.4	1194.4	1203.4	1167.3	1035.5	999.4	989.1	974.9	968.4
32.5°	5771.9	3885.4	1309.4	1111.7	1120.8	1002.0	951.7	956.9	955.5	937.4	931.0
35°	5853.2	3610.3	1193.1	1036.9	1011.1	897.4	903.9	919.3	919.3	897.4	889.7
37.5°	5995.3	3354.7	1119.5	973.6	884.5	843.2	860.0	880.7	880.7	865.1	858.7
40°	6146.4	3105.5	1064.0	923.2	804.4	805.8	822.6	838.0	844.4	847.1	841.9
42.5°	6283.3	2847.2	1004.6	869.0	768.3	777.3	785.1	796.7	823.8	841.9	839.3
45°	6363.3	2587.7	940.0	801.9	743.8	747.7	745.0	765.7	798.0	825.1	825.1
47.5°	6436.9	2374.6	887.1	734.7	719.2	719.2	711.5	732.1	761.8	794.1	796.7
50°	6506.6	2236.5	849.7	683.0	688.2	684.4	681.8	701.1	741.1	779.9	786.3
52.5°	6577.7	2189.9	816.1	645.6	655.9	650.8	653.4	680.5	725.7	765.7	772.1
55°	6677.1	2219.7	781.2	619.8	624.9	623.7	634.0	665.0	705.0	745.0	747.7
57.5°	6799.8	2328.1	751.5	600.5	595.3	603.0	619.8	649.5	688.2	736.0	739.9
58°	6824.3	2353.9	746.3	595.3	588.8	600.5	617.2	645.6	685.7	736.0	739.9
60°	6861.7	2445.7	733.5	584.9	566.8	587.5	608.1	636.6	680.5	742.5	750.2
62.5°	6680.9	2463.7	729.6	573.4	543.6	569.5	593.9	626.3	675.4	764.5	781.2
65°	6054.6	2277.8	702.5	553.9	524.3	555.3	581.0	618.5	690.8	830.2	838.0
67.5°	4860.2	1891.6	636.6	524.3	502.3	538.5	570.7	618.5	697.2	840.6	845.8
70°	3341.8	1421.7	553.9	491.9	476.5	517.8	566.8	632.7	675.4	795.4	779.9
72.5°	1745.8	989.1	485.5	454.5	445.5	499.7	604.3	618.5	649.5	742.5	727.0
75°	879.3	672.7	427.4	411.9	410.6	493.3	676.6	595.3	622.4	698.6	732.1
77.5°	519.0	526.8	380.9	371.8	378.3	481.6	677.9	572.0	591.4	643.0	679.2
80°	355.1	435.2	344.7	342.2	347.4	442.9	624.9	543.6	555.3	608.1	646.9
82.5°	200.2	240.2	302.2	319.0	316.4	362.8	539.7	494.6	508.7	719.2	760.6
85°	96.9	144.6	253.1	298.3	269.9	241.4	439.1	439.1	442.9	515.3	521.7
87.5°	36.1	64.5	170.4	236.3	188.5	144.6	298.3	311.2	346.1	356.4	364.2
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)