

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: P196097

Luminaire Tested: **NAV-AF-05-D-UNV-SL2**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196097
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24257)
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-SL2
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 30155.6 lumens
Efficiency: N/A
Efficacy: 108.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B3 - U0 - G4

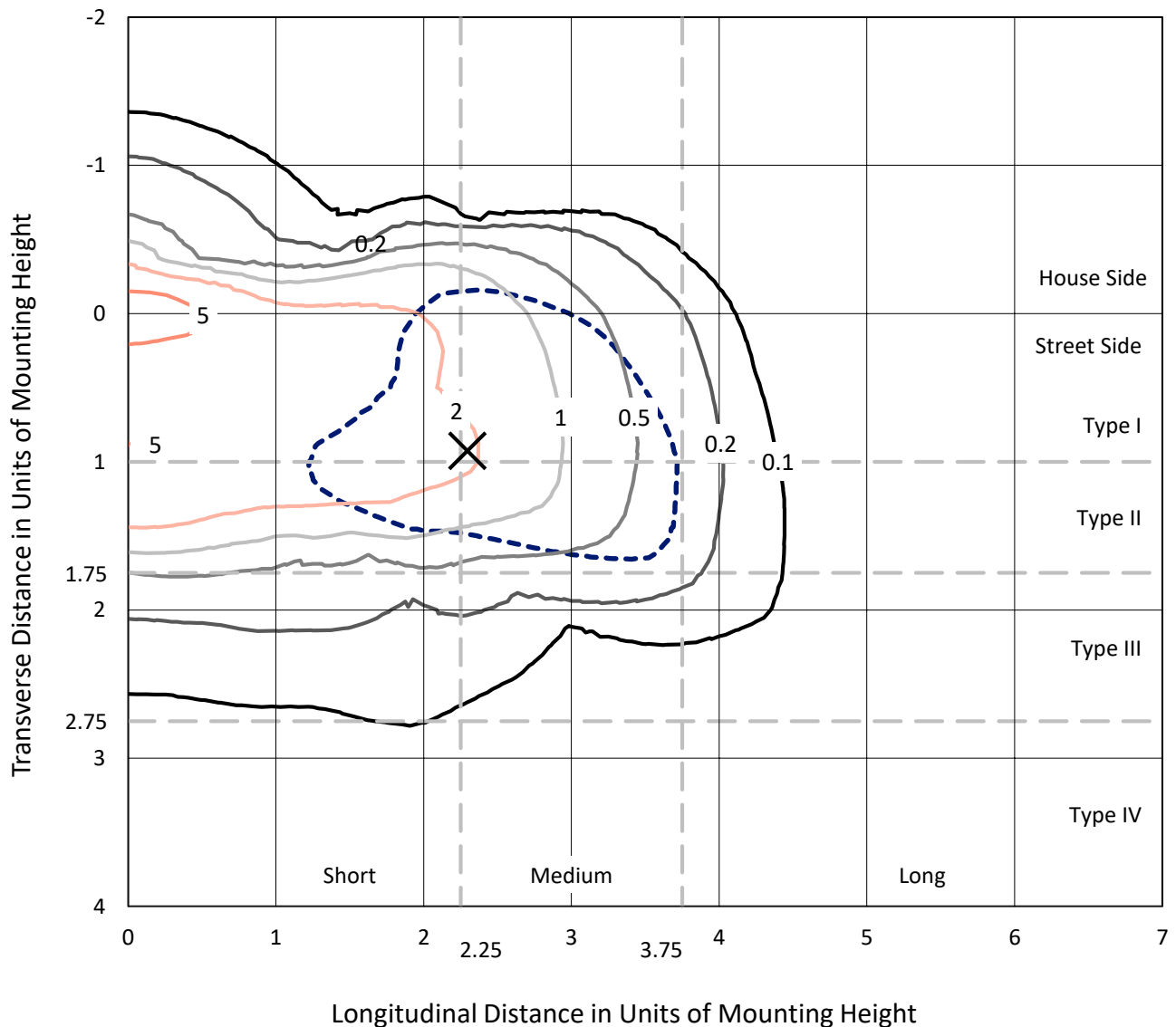
Input Watts (W): 279
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

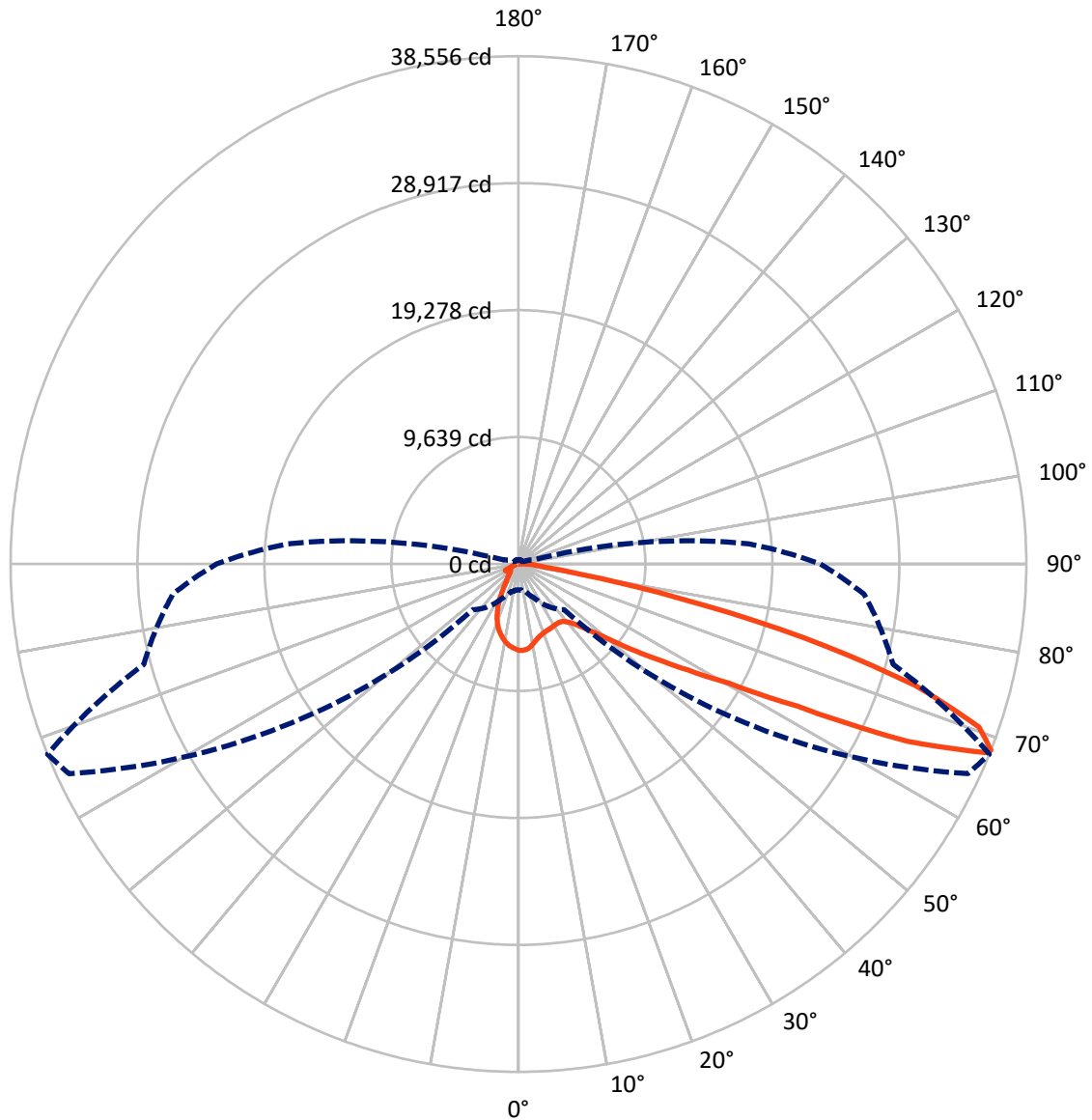
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 7.3 fc
 Type II - Medium - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 68-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	4933.5	0.0	4933.5
	% Fixture	16.4	0.0	16.4
Street Side	Lumens	25222.0	0.0	25222.0
	% Fixture	83.6	0.0	83.6
Total	Lumens	30155.6	0.0	30155.6
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	562.2	1.9
10°-20°	1304.0	4.3
20°-30°	1763.6	5.8
30°-40°	2486.6	8.2
40°-50°	4088.9	13.6
50°-60°	6338.1	21.0
60°-70°	8217.8	27.3
70°-80°	4715.8	15.6
80°-90°	678.5	2.3
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°	30155.6	100.0
0°-180°	30155.6	100.0

Coefficient of Utilization



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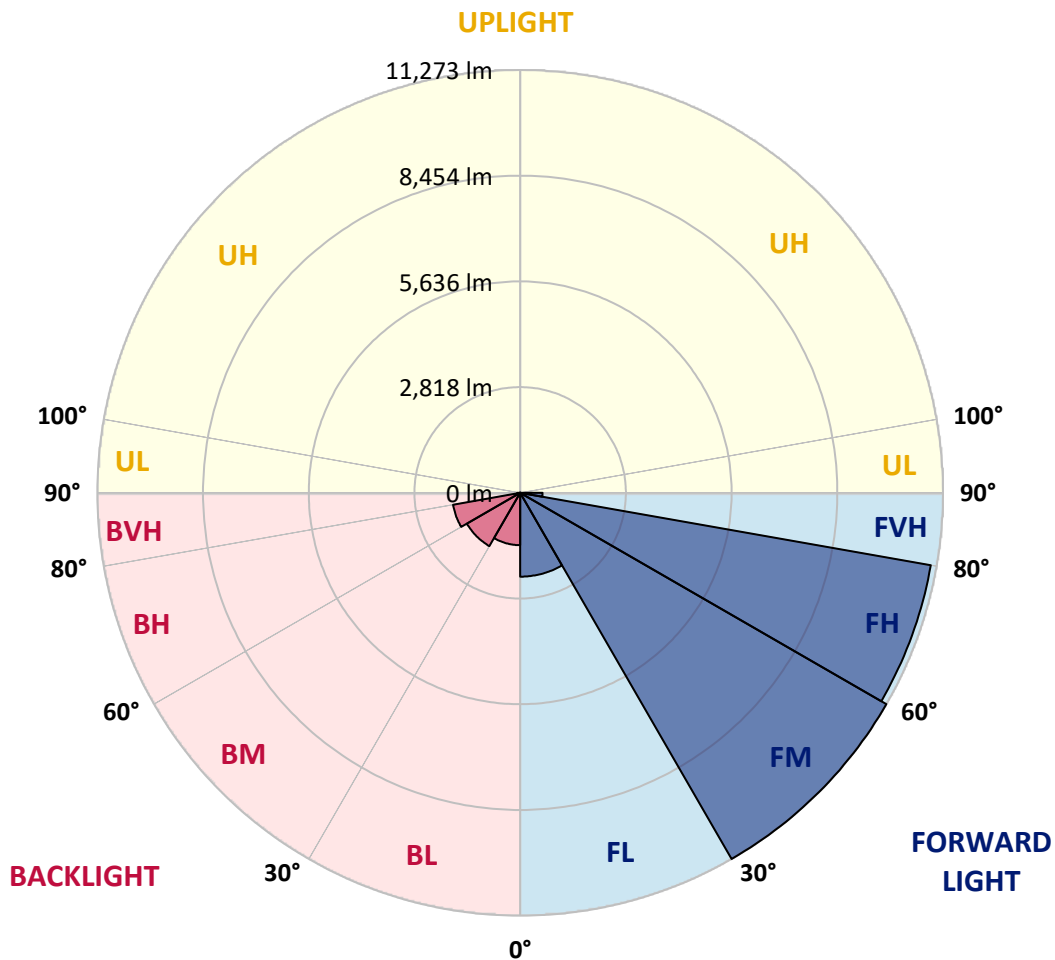
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2235.0	7.4			
FM (30°-60°)	11272.7	37.4			
FH (60°-80°)	11116.7	36.9			G4/12000
FVH (80°-90°)	597.6	2.0			G4/750
BL (0°-30°)	1394.8	4.6	B3/2500		
BM (30°-60°)	1641.0	5.4	B2/2500		
BH (60°-80°)	1817.0	6.0	B3/2500		G3/2500
BVH (80°-90°)	80.9	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G4

Type II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	6561.6	6561.6	6561.6	6561.6	6561.6	6561.6	6561.6	6561.6	6561.6	6561.6	6561.6
2.5°	6386.3	6437.5	6437.5	6474.9	6508.4	6535.9	6559.6	6559.6	6559.6	6543.8	6530.1
5°	5714.5	5783.5	5793.4	5887.9	6012.0	6163.7	6333.1	6482.7	6512.3	6567.4	6589.1
7.5°	5247.7	5269.3	5306.8	5371.8	5497.8	5684.9	5950.9	6285.8	6366.5	6539.9	6630.6
10°	4916.7	4934.5	4966.0	5031.0	5145.2	5314.6	5576.6	6012.0	6146.0	6453.3	6632.5
12.5°	4674.5	4688.3	4717.8	4776.9	4893.1	5044.8	5312.7	5765.8	5931.3	6366.5	6660.1
15°	4485.3	4509.0	4532.6	4589.8	4707.9	4853.7	5125.6	5586.5	5765.8	6297.6	6711.3
17.5°	4410.5	4422.3	4426.3	4455.8	4562.2	4709.9	4981.8	5460.4	5645.6	6242.5	6750.7
20°	4457.8	4459.8	4420.4	4400.6	4461.7	4597.7	4861.6	5365.9	5555.0	6193.3	6766.4
22.5°	4664.7	4664.7	4562.2	4475.5	4434.2	4518.9	4780.9	5300.8	5505.7	6155.8	6766.4
25°	5058.6	5040.9	4881.3	4709.9	4526.8	4491.3	4729.6	5259.5	5468.3	6136.1	6740.8
27.5°	5576.6	5560.9	5358.0	5103.9	4773.0	4550.4	4711.9	5226.1	5430.8	6106.5	6685.7
30°	6207.0	6193.3	5962.8	5629.8	5141.4	4737.5	4753.2	5202.4	5401.4	6057.3	6593.1
32.5°	6835.4	6827.5	6644.3	6303.5	5649.6	5054.6	4861.6	5198.4	5385.5	5998.2	6480.8
35°	7467.7	7467.7	7355.4	7067.9	6333.1	5531.3	5088.2	5271.4	5415.1	5966.7	6384.3
37.5°	8401.4	8364.0	8155.2	7857.8	7193.9	6149.9	5454.5	5425.0	5529.4	6019.9	6352.7
40°	9847.3	9739.0	9217.0	8716.6	8133.5	6941.7	5990.3	5722.4	5785.5	6201.1	6427.6
42.5°	11360.2	11188.7	10497.3	9697.6	9104.7	7918.8	6693.6	6205.0	6203.1	6551.7	6666.0
45°	12658.3	12569.6	11821.1	10806.7	10213.7	9018.0	7582.0	6922.1	6851.1	7095.4	7125.0
47.5°	13412.7	13353.6	12902.6	11980.7	11529.6	10316.2	8708.7	7916.8	7782.9	7928.7	7883.4
50°	13203.9	13261.0	13131.0	12660.2	12943.9	12140.2	10144.7	9280.0	9025.9	9171.7	9061.3
52.5°	12104.8	12258.4	12374.6	12465.3	13757.5	14580.8	11949.1	10981.9	10771.2	10745.6	10639.2
55°	10125.1	10369.3	10735.7	11401.5	13538.8	16540.9	15100.9	13040.5	12733.2	12571.7	12613.0
57.5°	6890.6	7260.9	8050.8	9317.4	12402.2	17376.0	19761.6	15699.7	15179.7	14604.5	14738.5
60°	3795.9	4105.2	5044.8	6321.2	9808.0	17252.0	23892.3	20021.6	18384.7	16860.0	17135.8
62.5°	2456.4	2523.4	3222.7	4317.9	6019.9	15230.9	26187.2	27245.1	23776.1	19834.5	20222.5
65°	1973.8	2021.0	2363.8	3482.7	4193.8	9798.0	26289.6	34738.4	32451.4	23876.6	23888.5
67.5°	1928.5	1950.2	2149.1	2929.2	3933.8	5334.4	22724.2	37693.2	38223.1	28647.5	26340.9
68°	1956.1	1981.7	2182.6	2838.6	3931.8	4916.7	21002.6	37647.9	38555.9	29445.3	26340.9
70°	1725.6	1757.1	2225.9	2937.1	3764.4	4227.3	14381.9	35648.4	37110.1	31279.3	24993.6
72.5°	902.2	876.6	1101.1	2318.5	4237.2	4404.6	7597.8	29782.2	31488.1	28968.6	21593.6
75°	703.3	640.2	616.5	916.0	3726.9	4568.1	4412.5	21168.0	22456.3	20882.4	14433.1
77.5°	661.8	585.0	539.7	541.8	1640.9	4753.2	3569.4	12457.4	12457.4	9961.6	4605.5
80°	531.8	460.9	431.4	492.4	791.9	4381.0	3725.0	5677.1	4841.9	2574.6	1268.6
82.5°	350.7	313.2	315.2	399.9	600.8	2925.2	4314.0	2803.1	2105.7	1140.6	746.5
85°	222.6	191.1	212.8	279.7	449.2	1304.1	4270.6	1948.2	1394.7	640.2	372.3
87.5°	112.3	86.6	106.4	145.8	273.8	374.3	3516.2	1739.4	1034.2	266.0	202.9
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°	6561.6	6561.6	6561.6	6561.6	6561.6	6561.6	6561.6	6561.6	6561.6	6561.6	6561.6
2.5°	6530.1	6486.7	6465.0	6429.6	6386.3	6342.9	6313.3	6299.6	6291.8	6295.6	6293.7
5°	6577.4	6520.2	6427.6	6295.6	6159.7	6016.0	5905.6	5820.9	5767.7	5752.0	5748.1
7.5°	6612.8	6530.1	6356.7	6116.4	5883.9	5631.9	5417.1	5245.7	5129.5	5076.3	5074.3
10°	6606.9	6500.5	6226.7	5872.1	5531.3	5161.0	4824.1	4536.6	4327.8	4227.3	4223.4
12.5°	6612.8	6467.0	6067.1	5586.5	5098.0	4568.1	4067.8	3620.6	3309.3	3161.6	3155.7
15°	6636.4	6431.6	5903.7	5267.4	4591.7	3843.2	3128.1	2566.7	2283.0	2186.6	2186.6
17.5°	6634.4	6372.5	5714.5	4897.1	3990.9	2988.2	2135.3	1788.6	1761.0	1849.7	1863.5
20°	6595.1	6278.0	5470.3	4457.8	3285.7	2068.3	1447.9	1398.6	1619.2	1863.5	1891.0
22.5°	6534.0	6155.8	5188.6	3947.6	2464.3	1347.4	1116.9	1191.7	1491.2	1794.6	1837.8
25°	6449.3	6008.1	4865.6	3354.7	1638.9	969.1	931.7	1024.3	1235.1	1438.0	1469.5
27.5°	6325.2	5820.9	4513.0	2712.5	1046.0	797.8	811.6	876.6	967.2	1053.8	1071.6
30°	6169.6	5602.3	4128.8	2001.4	793.8	713.1	736.7	776.1	815.5	870.6	882.5
32.5°	6012.0	5379.7	3729.0	1374.9	693.4	667.8	691.4	713.1	746.5	784.0	791.9
35°	5870.2	5172.9	3317.2	959.3	650.1	638.2	650.1	663.8	697.3	734.8	738.7
37.5°	5767.7	5003.5	2887.8	758.4	624.4	612.6	618.6	624.4	663.8	719.0	724.9
40°	5753.9	4891.1	2452.4	681.6	604.8	589.0	585.0	589.0	640.2	703.3	709.1
42.5°	5887.9	4897.1	2027.0	650.1	589.0	571.2	555.5	563.3	608.7	658.0	661.8
45°	6205.0	5035.0	1658.6	636.3	575.2	561.4	537.8	541.8	563.3	589.0	592.9
47.5°	6764.5	5336.3	1376.9	628.4	563.3	551.6	522.0	510.1	512.2	526.0	526.0
50°	7658.8	5840.6	1205.5	620.5	553.5	531.8	498.4	474.8	468.8	476.7	478.6
52.5°	8992.4	6705.3	1122.8	604.8	535.8	506.3	468.8	445.2	435.4	443.2	443.2
55°	10794.8	8086.2	1083.4	583.1	514.1	474.8	441.2	421.6	413.7	419.6	419.6
57.5°	12849.4	9880.8	1150.4	553.5	486.5	441.2	417.6	403.9	397.9	403.9	405.8
60°	15290.0	12228.9	1611.4	516.1	457.1	411.7	397.9	390.1	386.1	392.0	392.0
62.5°	18534.3	15353.1	2493.9	486.5	425.4	384.1	380.2	376.2	372.3	378.2	378.2
65°	22036.7	18195.5	2566.7	468.8	397.9	360.5	362.4	362.4	358.5	364.4	364.4
67.5°	23151.7	17949.3	1434.1	447.1	364.4	336.9	344.7	344.7	342.8	348.6	346.7
68°	22915.3	17559.3	1248.9	441.2	358.5	330.9	338.8	340.7	338.8	344.7	342.8
70°	21154.2	15416.1	821.4	407.7	332.9	311.3	323.0	325.0	323.0	330.9	329.0
72.5°	17462.8	11563.0	606.7	356.5	301.4	285.6	297.5	299.4	301.4	309.2	307.3
75°	11090.3	6386.3	478.6	303.4	269.9	256.0	267.9	273.8	277.7	289.6	283.7
77.5°	3037.6	1938.3	388.1	258.1	232.4	226.6	234.5	242.3	246.2	260.0	250.2
80°	1063.8	856.9	323.0	218.6	193.0	191.1	199.0	206.8	210.7	222.6	210.7
82.5°	646.1	559.5	258.1	171.3	151.7	149.8	159.6	167.5	171.3	171.3	163.5
85°	336.9	295.4	189.1	120.2	104.4	98.5	116.2	126.0	128.1	126.0	120.2
87.5°	189.1	167.5	100.5	57.1	47.3	49.2	61.1	74.9	80.8	78.8	74.9
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)