

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: P196156

Luminaire Tested: **NAV-AF-04-D-UNV-SL4-600-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196156
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)
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-SL4-600-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13395.5 lumens
Efficiency: N/A
Efficacy: 103.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

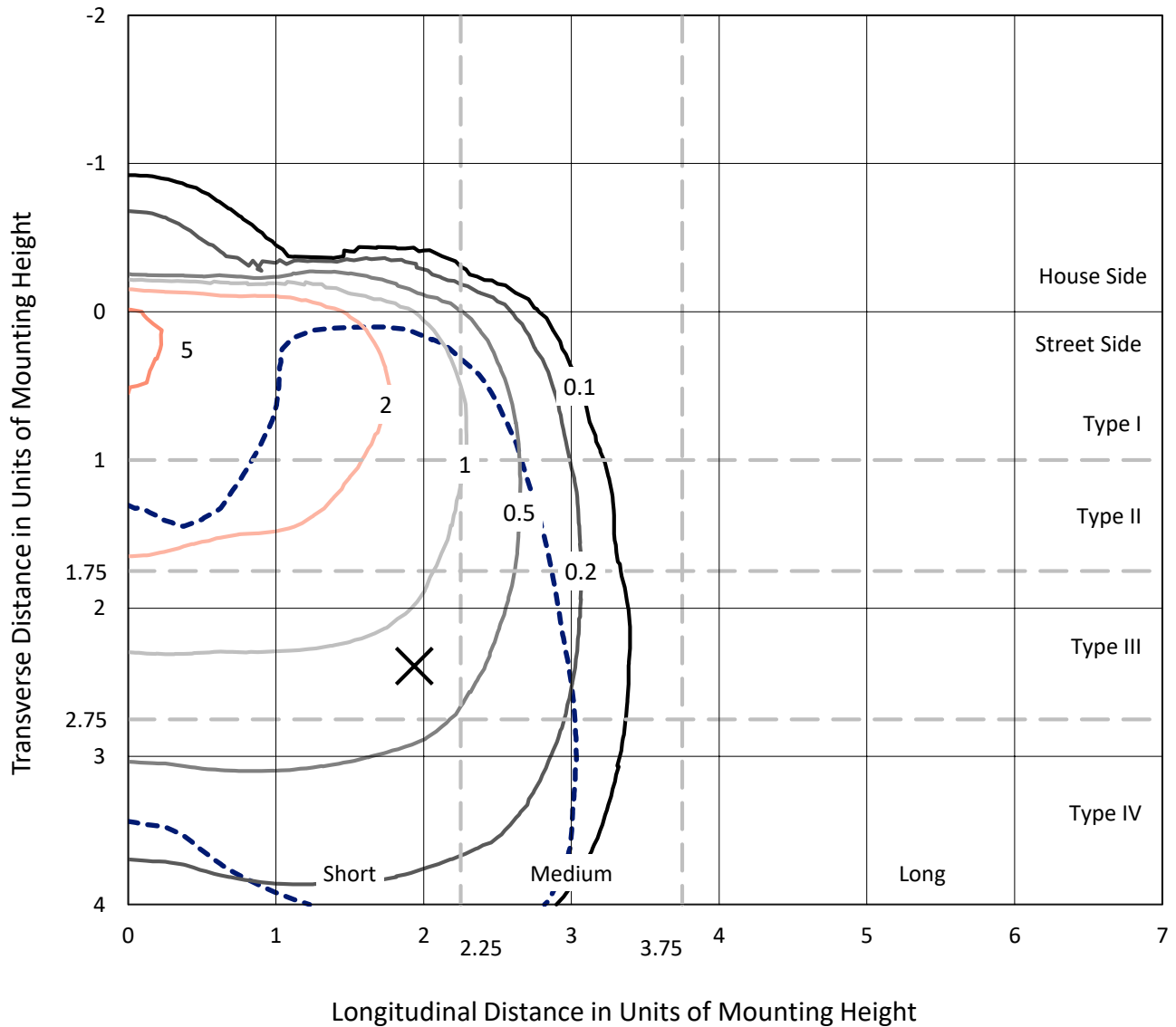
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

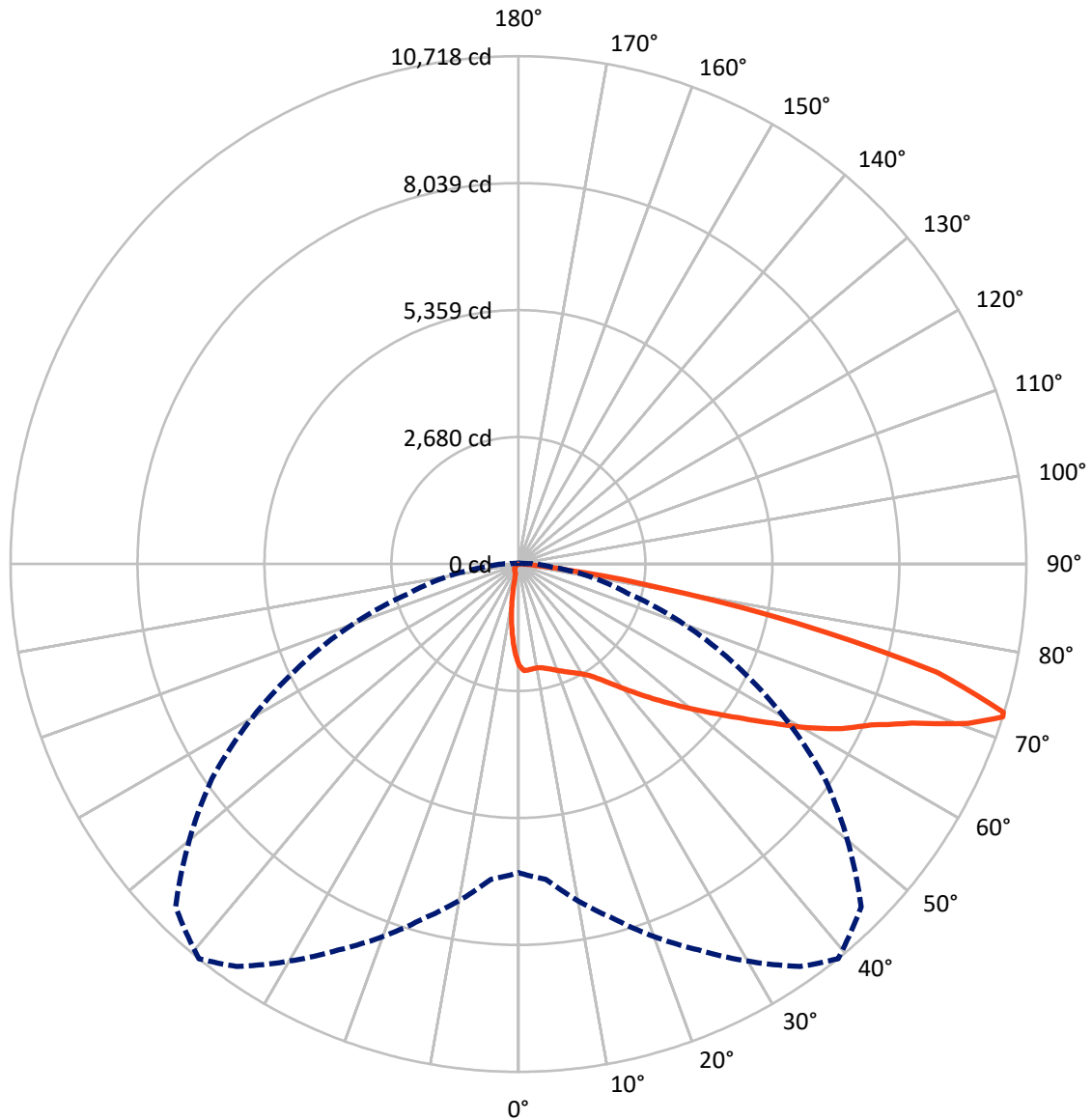
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.6 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	877.9	0.0	877.9
	% Fixture	6.6	0.0	6.6
Street Side	Lumens	12517.6	0.0	12517.6
	% Fixture	93.4	0.0	93.4
Total	Lumens	13395.5	0.0	13395.5
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.4	1.3
10°-20°	422.2	3.2
20°-30°	701.2	5.2
30°-40°	1117.6	8.3
40°-50°	1844.7	13.8
50°-60°	2785.8	20.8
60°-70°	3629.0	27.1
70°-80°	2452.1	18.3
80°-90°	268.6	2.0
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°	13395.5	100.0
0°-180°	13395.5	100.0

Coefficient of Utilization



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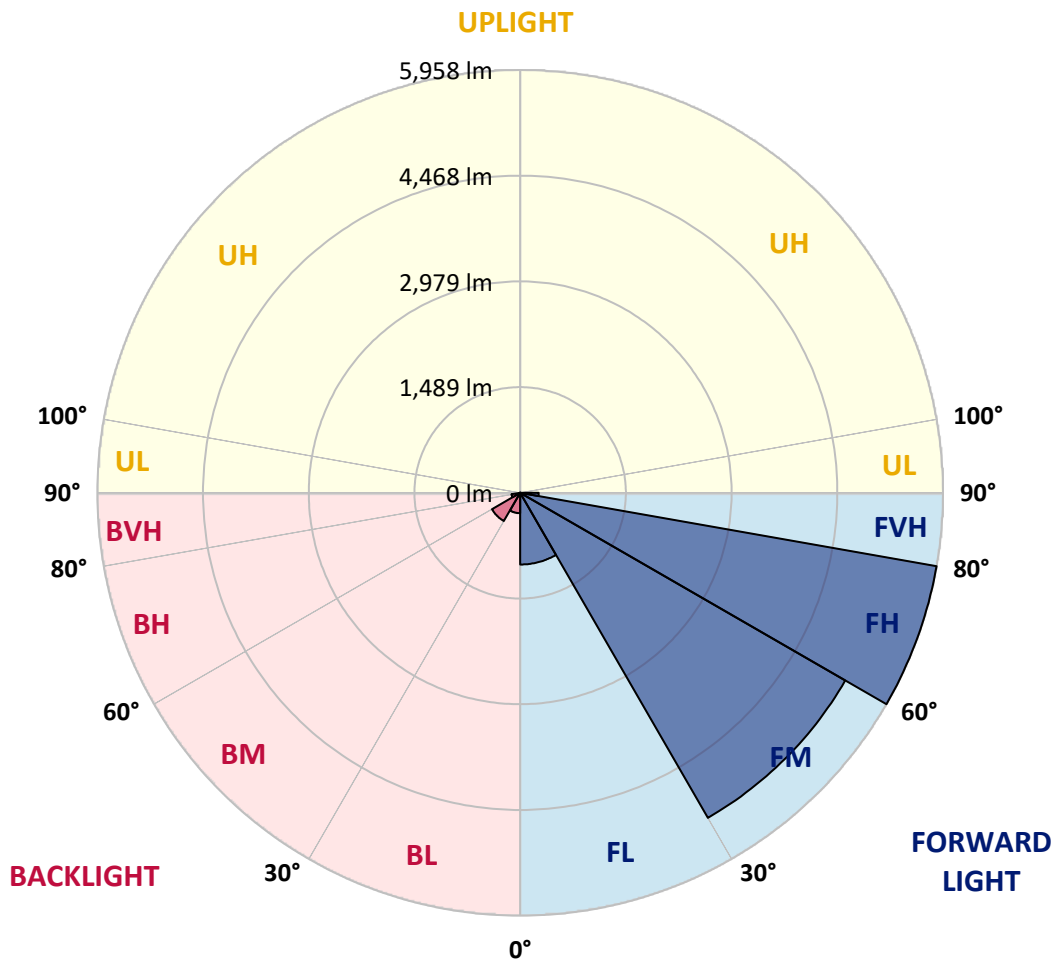
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1010.3	7.5			
FM	(30°-60°)	5288.7	39.5			
FH	(60°-80°)	5957.7	44.5			G3/7500
FVH	(80°-90°)	260.8	1.9			G3/500
BL	(0°-30°)	287.5	2.1	B1/500		
BM	(30°-60°)	459.3	3.4	B1/1000		
BH	(60°-80°)	123.4	0.9	B1/500		G1/500
BVH	(80°-90°)	7.7	0.1			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	2144.0	2144.0	2144.0	2144.0	2144.0	2144.0	2144.0	2144.0	2144.0	2144.0	2144.0
2.5°	2283.0	2287.2	2282.0	2272.5	2258.8	2250.4	2238.8	2213.6	2182.0	2154.5	2123.0
5°	2300.9	2303.1	2296.7	2278.8	2257.8	2246.2	2231.5	2204.0	2171.4	2133.5	2076.7
7.5°	2306.2	2305.1	2297.8	2275.7	2243.0	2228.3	2203.0	2169.3	2135.6	2100.8	2036.6
10°	2304.1	2304.1	2298.9	2277.8	2240.9	2227.3	2198.8	2163.0	2120.9	2086.1	2017.7
12.5°	2296.7	2300.9	2297.8	2286.2	2258.8	2248.3	2223.0	2187.2	2147.2	2111.4	2038.7
15°	2306.2	2312.5	2318.8	2314.6	2298.9	2289.4	2266.2	2229.3	2196.7	2158.8	2080.9
17.5°	2344.1	2357.8	2372.5	2373.7	2356.8	2339.9	2313.6	2275.7	2244.0	2209.4	2125.1
20°	2415.7	2426.2	2453.6	2458.9	2425.2	2401.0	2364.1	2320.0	2288.3	2258.8	2166.2
22.5°	2522.1	2533.6	2555.8	2548.4	2491.6	2463.2	2416.8	2366.3	2333.6	2316.8	2213.6
25°	2683.2	2686.4	2691.6	2659.0	2565.3	2533.6	2476.8	2420.0	2393.6	2391.6	2281.0
27.5°	2872.8	2876.9	2853.8	2781.2	2647.4	2606.4	2542.1	2490.5	2477.9	2493.6	2366.3
30°	3089.7	3090.7	3026.5	2908.6	2742.2	2696.9	2630.5	2573.7	2585.3	2624.3	2475.7
32.5°	3311.9	3301.4	3212.9	3059.1	2871.7	2817.0	2760.1	2703.2	2736.9	2815.9	2635.8
35°	3515.2	3511.0	3406.6	3227.6	3040.2	2991.7	2950.7	2890.7	2945.4	3073.9	2853.8
37.5°	3718.4	3715.3	3596.2	3409.8	3247.7	3212.9	3182.4	3136.1	3225.6	3414.0	3145.5
40°	3942.7	3937.4	3791.1	3612.0	3488.8	3469.8	3451.9	3431.9	3584.6	3846.8	3508.8
42.5°	4219.7	4196.5	3997.5	3832.1	3754.2	3759.4	3760.5	3780.5	4019.6	4361.8	3937.4
45°	4537.7	4486.0	4204.9	4068.0	4045.9	4077.5	4109.1	4192.3	4526.0	4954.7	4411.3
47.5°	4846.2	4763.1	4443.9	4321.8	4367.1	4432.3	4508.1	4670.4	5094.7	5575.0	4840.9
50°	5111.6	5026.3	4680.9	4579.8	4724.1	4821.0	4955.7	5201.1	5695.0	6099.3	5111.6
52.5°	5320.1	5252.6	4931.5	4864.1	5120.0	5252.6	5464.4	5786.6	6261.5	6444.8	5301.1
55°	5473.8	5440.2	5171.6	5181.0	5560.1	5751.8	6015.2	6379.4	6739.6	6713.3	5443.3
57.5°	5647.6	5621.2	5423.3	5554.9	6089.9	6337.4	6641.7	6934.5	7087.1	6929.2	5582.3
60°	5825.6	5834.0	5728.7	6007.8	6744.9	7018.7	7284.0	7356.8	7385.2	7148.2	5728.7
62.5°	5960.3	5996.1	6005.6	6496.4	7416.7	7650.5	7765.3	7713.7	7707.4	7442.1	5717.1
65°	6115.2	6208.9	6364.7	7032.4	8027.5	8181.3	8263.4	8338.2	8180.2	7529.4	5154.8
67.5°	6382.6	6530.1	6880.8	7689.5	8733.0	8960.5	9193.3	9114.3	8250.8	6641.7	3926.9
70°	6742.8	6922.8	7542.0	8547.8	9690.3	10071.6	10266.3	9052.2	7005.0	4589.3	2071.4
72°	6515.3	6678.5	7746.4	8985.8	10368.5	10718.1	10230.5	7895.9	5077.9	2378.9	694.0
72.5°	6294.2	6462.7	7681.0	8980.6	10435.8	10703.3	9997.8	7439.9	4493.4	1851.3	478.1
75°	4367.1	4579.8	6584.8	8072.8	9423.9	9130.0	7649.5	4505.0	1628.0	318.0	157.9
77.5°	2257.8	2422.0	3994.3	5704.5	6568.0	6015.2	4520.8	1954.4	450.7	168.5	104.2
80°	1399.5	1480.6	1868.1	2810.7	3412.0	2984.4	1994.5	789.8	288.6	100.0	83.2
82.5°	724.6	786.6	1176.3	1134.1	1260.5	1047.8	736.1	661.3	178.0	62.1	85.3
85°	238.0	252.8	722.4	754.0	539.2	362.2	326.4	630.8	51.6	40.0	72.6
87.5°	31.6	36.8	253.8	431.8	265.4	164.3	195.9	222.2	17.9	22.1	20.0
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°	2144.0	2144.0	2144.0	2144.0	2144.0	2144.0	2144.0	2144.0	2144.0	2144.0	2144.0
2.5°	2102.0	2088.3	2045.1	2001.9	1952.4	1907.1	1871.3	1848.2	1858.7	1823.9	1829.1
5°	2041.9	2007.1	1912.4	1810.2	1699.6	1596.4	1514.3	1453.2	1441.6	1389.0	1391.1
7.5°	1984.0	1927.1	1773.4	1604.9	1421.6	1273.2	1138.3	1020.4	978.2	935.1	909.8
10°	1952.4	1874.5	1656.5	1411.1	1153.1	935.1	745.5	597.1	535.0	489.7	467.6
12.5°	1961.8	1858.7	1569.1	1235.2	896.2	619.2	421.3	312.7	274.9	253.8	246.4
15°	1993.4	1861.8	1490.1	1063.6	651.8	374.9	247.5	211.6	208.5	207.5	206.4
17.5°	2023.0	1864.9	1406.9	884.5	436.0	239.1	199.1	195.9	195.9	195.9	195.9
20°	2053.5	1866.1	1315.3	697.1	286.4	195.9	187.4	185.4	187.4	187.4	187.4
22.5°	2089.3	1873.4	1226.8	515.0	211.6	184.3	179.0	178.0	179.0	179.0	178.0
25°	2133.5	1889.2	1131.0	368.6	191.7	176.9	171.7	170.6	171.7	170.6	170.6
27.5°	2192.5	1910.3	1019.4	264.3	183.2	169.5	164.3	164.3	164.3	163.3	163.3
30°	2268.3	1935.5	869.8	208.5	174.8	162.1	157.9	157.9	156.9	155.9	155.9
32.5°	2376.7	1976.6	706.7	188.5	165.3	152.7	148.5	149.6	148.5	147.4	146.4
35°	2530.5	2040.9	545.4	178.0	155.9	143.2	139.0	139.0	139.0	136.9	136.9
37.5°	2748.5	2138.8	408.6	167.5	146.4	133.7	128.5	128.5	127.5	125.3	126.3
40°	3018.1	2261.9	295.9	157.9	136.9	123.2	119.0	116.9	114.8	112.7	112.7
42.5°	3342.4	2382.0	222.2	148.5	127.5	114.8	109.6	107.4	103.2	101.1	100.0
45°	3705.7	2509.5	184.3	136.9	116.9	105.3	101.1	96.9	91.7	88.5	87.4
47.5°	4012.2	2587.3	164.3	125.3	106.4	95.9	91.7	85.3	79.0	76.8	76.8
50°	4196.5	2554.7	147.4	113.8	95.9	86.3	81.1	72.6	68.4	66.4	65.3
52.5°	4299.7	2457.8	133.7	104.2	86.3	75.8	68.4	61.1	58.9	56.9	56.9
55°	4370.3	2317.8	119.0	94.7	77.9	66.4	57.9	52.7	50.5	49.5	48.5
57.5°	4437.7	2147.2	105.3	86.3	69.5	58.9	49.5	47.4	43.2	42.1	42.1
60°	4457.6	1912.4	92.7	76.8	62.1	51.6	43.2	40.0	35.8	34.8	34.8
62.5°	4202.8	1521.6	82.1	65.3	54.7	44.2	38.0	33.7	29.5	29.5	29.5
65°	3512.0	1033.1	70.6	56.9	48.5	38.0	32.6	27.4	25.3	25.3	25.3
67.5°	2446.3	576.0	60.0	48.5	41.0	31.6	27.4	23.1	22.1	23.1	23.1
70°	1102.5	228.5	50.5	40.0	33.7	26.3	23.1	20.0	22.1	22.1	22.1
72°	330.6	122.1	42.1	32.6	27.4	23.1	20.0	18.9	21.1	22.1	22.1
72.5°	245.4	109.6	40.0	31.6	27.4	22.1	18.9	18.9	21.1	22.1	22.1
75°	126.3	74.8	30.6	23.1	20.0	17.9	15.8	17.9	21.1	21.1	21.1
77.5°	99.0	61.1	25.3	17.9	16.9	15.8	14.7	16.9	18.9	18.9	18.9
80°	92.7	40.0	20.0	16.9	14.7	13.7	13.7	14.7	16.9	17.9	17.9
82.5°	93.7	32.6	17.9	15.8	13.7	12.7	12.7	13.7	15.8	16.9	16.9
85°	60.0	22.1	15.8	13.7	12.7	11.6	11.6	12.7	14.7	15.8	15.8
87.5°	20.0	16.9	13.7	12.7	10.5	10.5	10.5	10.5	12.7	13.7	14.7
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)