

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: P196142

Luminaire Tested: **NAV-AF-02-D-UNV-SL3**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196142
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24262)
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-SL3
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12444.2 lumens
Efficiency: N/A
Efficacy: 110.1 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B2 - U0 - G3

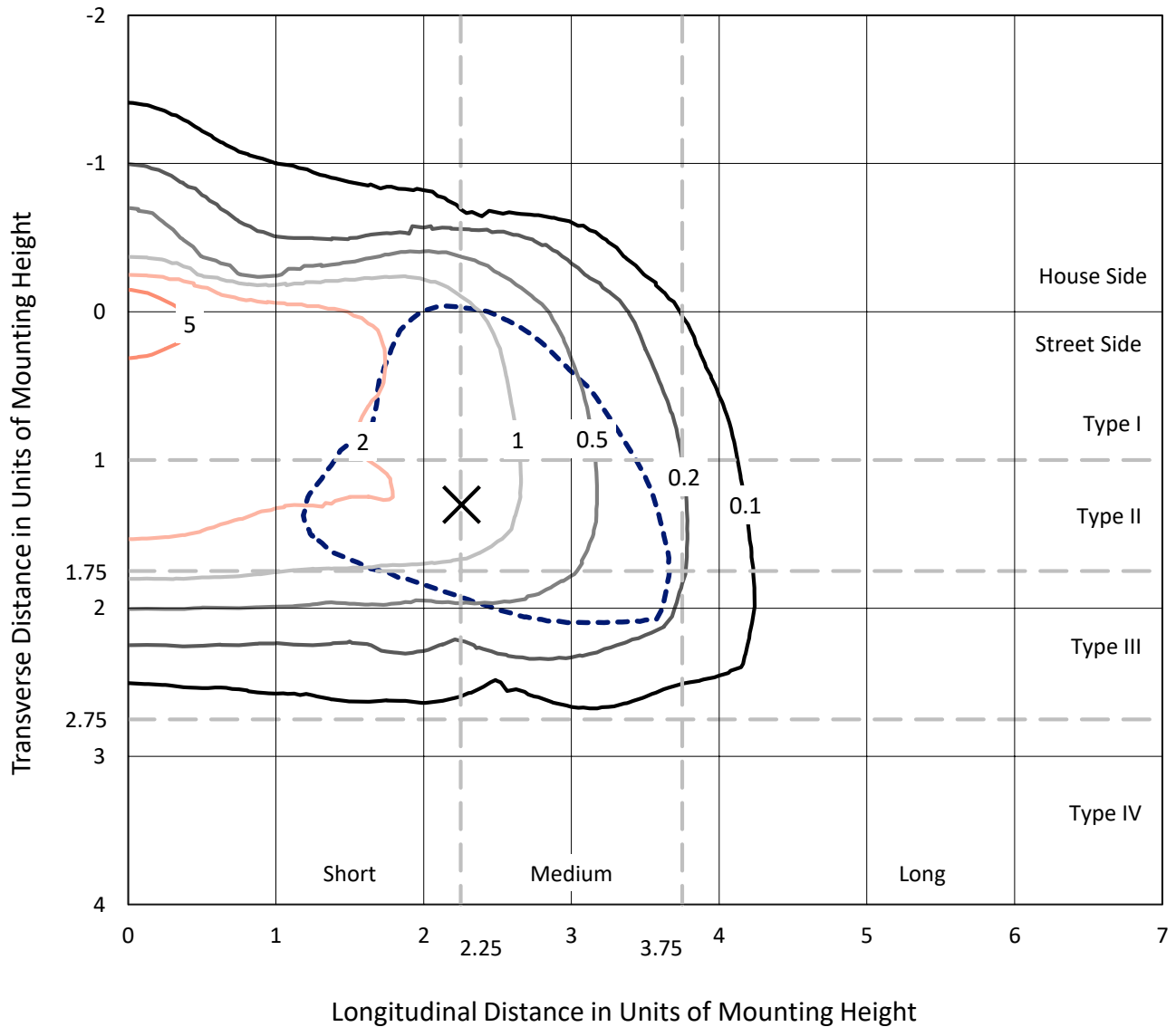
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

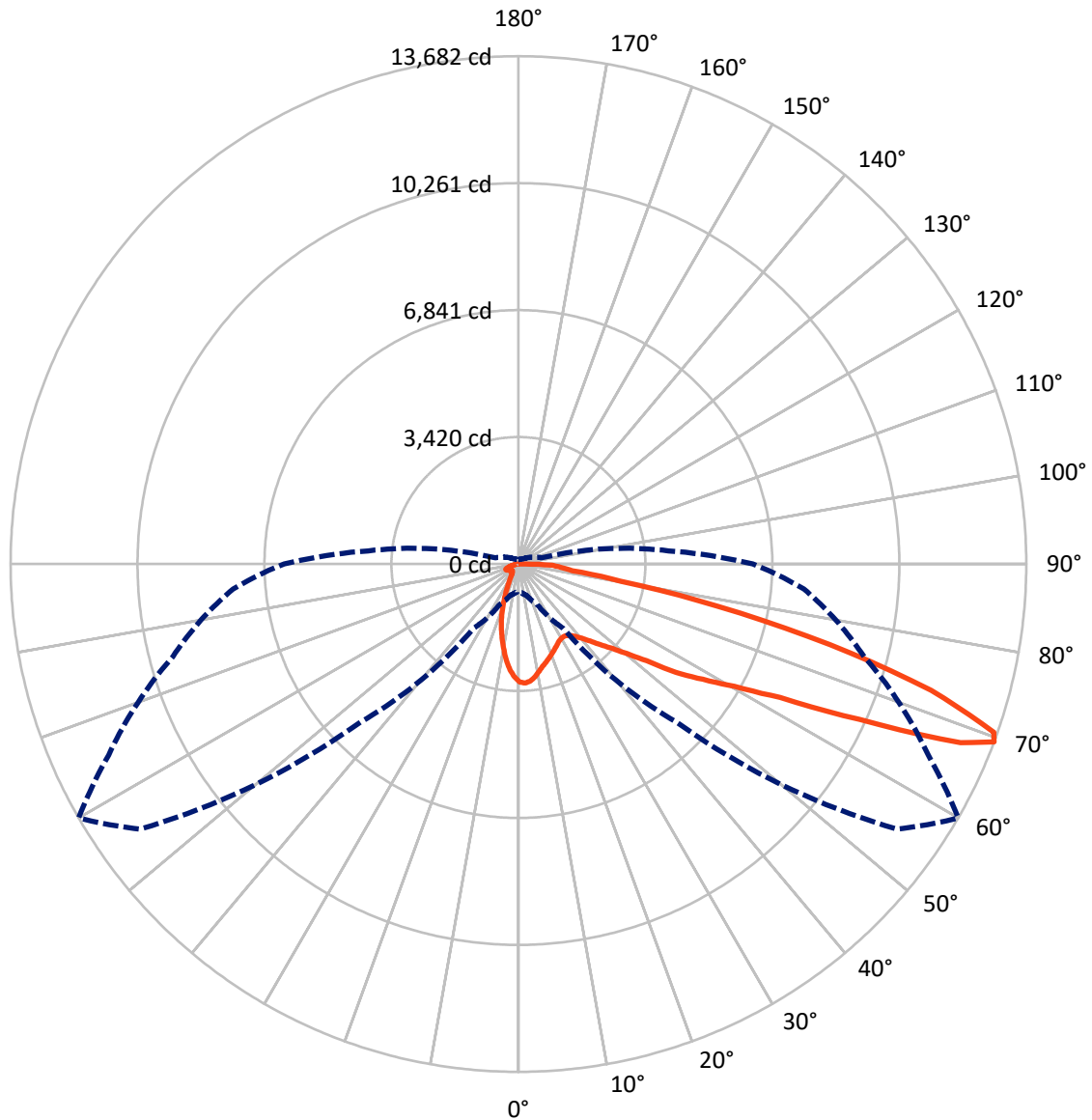
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.9 fc
 Type III - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 60-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1775.0	0.0	1775.0
	% Fixture	14.3	0.0	14.3
Street Side	Lumens	10669.3	0.0	10669.3
	% Fixture	85.7	0.0	85.7
Total	Lumens	12444.2	0.0	12444.2
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	269.4	2.2
10°-20°	576.7	4.6
20°-30°	735.7	5.9
30°-40°	1012.4	8.1
40°-50°	1640.0	13.2
50°-60°	2573.9	20.7
60°-70°	3431.4	27.6
70°-80°	1908.7	15.3
80°-90°	296.0	2.4
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°	12444.2	100.0
0°-180°	12444.2	100.0



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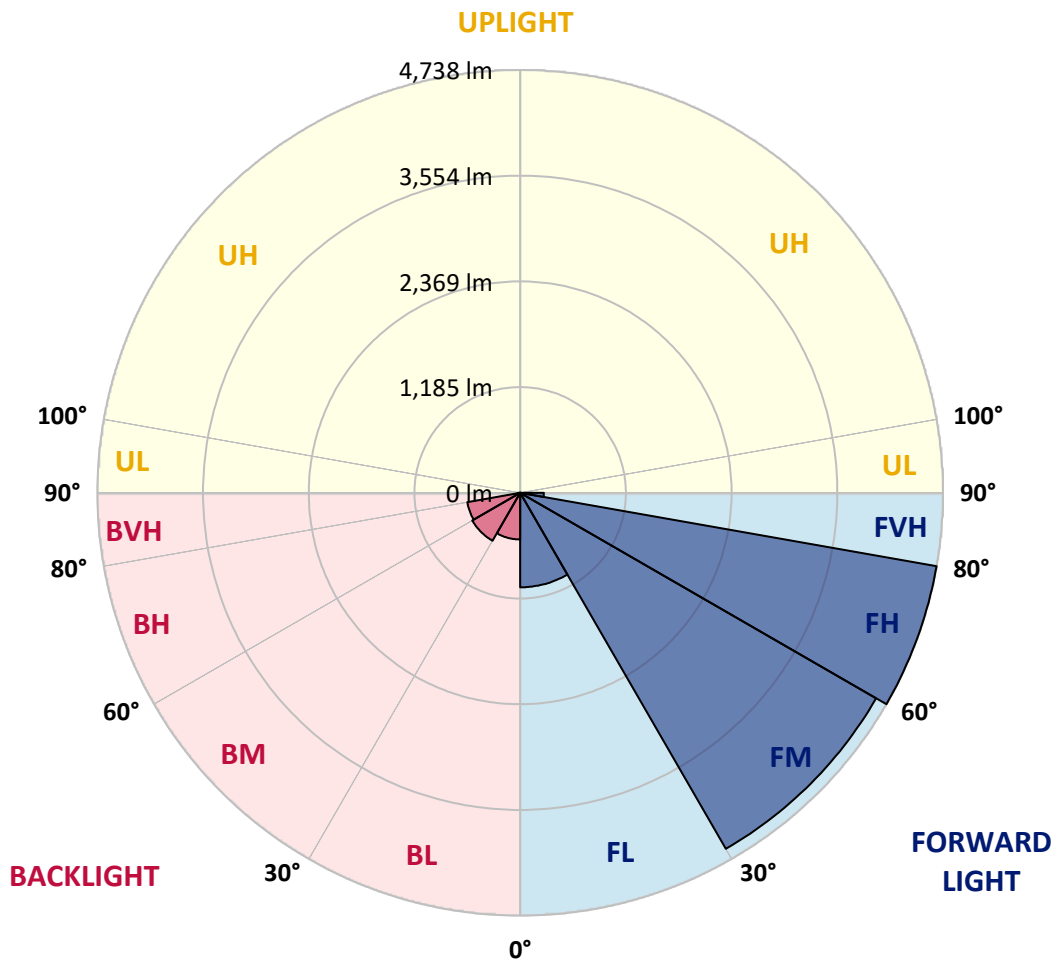
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1058.8	8.5			
FM	(30°-60°)	4606.2	37.0			
FH	(60°-80°)	4738.3	38.1			G2/5000
FVH	(80°-90°)	266.0	2.1			G3/500
BL	(0°-30°)	523.1	4.2	B2/1000		
BM	(30°-60°)	620.1	5.0	B1/1000		
BH	(60°-80°)	601.8	4.8	B2/1000		G2/1000
BVH	(80°-90°)	30.0	0.2			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G3

Type III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	65°	75°	85°
0°	3175.1	3175.1	3175.1	3175.1	3175.1	3175.1	3175.1	3175.1	3175.1	3175.1	3175.1
2.5°	3259.7	3268.5	3268.5	3261.4	3257.4	3234.3	3220.7	3211.0	3194.4	3163.2	3135.2
5°	3143.2	3160.0	3167.2	3170.4	3191.1	3183.9	3184.8	3178.4	3164.0	3130.5	3085.0
7.5°	2929.4	2932.6	2945.4	2966.9	3017.2	3052.3	3081.0	3086.5	3083.4	3058.6	2994.8
10°	2718.7	2724.3	2739.5	2776.2	2824.1	2874.3	2936.6	2962.2	2981.3	2973.3	2892.7
12.5°	2544.0	2544.8	2561.6	2603.8	2657.3	2720.3	2804.9	2844.8	2890.2	2908.7	2818.4
15°	2375.6	2386.7	2402.7	2453.8	2520.0	2599.8	2697.2	2752.2	2812.1	2864.8	2761.0
17.5°	2247.9	2256.7	2266.2	2308.6	2385.2	2485.0	2605.5	2664.5	2743.5	2824.1	2702.0
20°	2177.7	2180.9	2173.7	2194.4	2259.1	2366.8	2506.4	2577.5	2671.6	2785.0	2641.4
22.5°	2163.3	2163.3	2137.0	2133.1	2161.7	2252.7	2404.3	2491.3	2606.2	2757.9	2587.0
25°	2230.3	2225.5	2176.1	2130.6	2120.3	2166.5	2307.0	2413.9	2550.3	2757.1	2546.3
27.5°	2357.3	2350.8	2289.4	2212.8	2146.6	2126.6	2232.0	2341.3	2506.4	2784.2	2525.7
30°	2515.2	2512.9	2450.6	2354.8	2245.5	2142.6	2202.4	2303.8	2477.0	2834.4	2524.8
32.5°	2688.4	2677.3	2638.9	2543.2	2401.2	2231.2	2220.0	2305.4	2469.0	2907.8	2543.2
35°	2872.8	2864.8	2855.2	2758.6	2599.0	2387.6	2297.4	2360.5	2508.1	3010.0	2595.0
37.5°	3107.3	3098.6	3114.6	3009.2	2834.4	2592.7	2428.3	2470.5	2587.9	3158.5	2691.6
40°	3524.7	3499.2	3454.5	3292.5	3109.0	2844.0	2617.4	2623.8	2724.3	3357.1	2846.4
42.5°	4210.2	4128.0	3907.0	3609.3	3398.7	3136.1	2864.0	2833.7	2912.6	3619.6	3071.4
45°	4897.3	4804.7	4431.2	3954.8	3698.7	3449.7	3168.8	3096.2	3147.2	3925.3	3361.1
47.5°	5340.9	5295.4	4874.1	4300.4	4013.0	3791.3	3517.5	3397.8	3434.6	4271.6	3718.6
50°	5470.9	5431.9	5100.7	4570.9	4309.9	4203.8	3949.2	3790.4	3796.8	4676.2	4147.1
52.5°	5373.7	5357.7	5138.2	4738.4	4582.8	4638.7	4546.9	4325.9	4273.2	5119.9	4611.6
55°	5243.5	5249.2	5164.6	4906.8	4860.6	5044.1	5329.0	5151.0	4927.6	5581.9	5095.1
57.5°	4834.2	4838.1	5060.0	5227.6	5390.3	5612.2	5937.8	5862.7	5602.6	6080.6	5637.0
60°	3892.5	3923.7	4417.6	5161.4	5996.0	6731.8	6811.6	6682.3	6320.8	6655.2	6341.6
62.5°	2781.0	2808.9	3381.1	4480.6	5925.0	7999.0	8425.1	7911.2	7295.2	7514.6	7332.7
65°	1461.1	1456.3	1899.2	3096.2	4990.6	8292.7	10967.5	10092.9	8936.6	8696.4	8290.3
67.5°	816.3	842.7	1014.3	1561.6	3252.6	7298.3	12591.4	12849.1	11218.8	9634.0	8248.8
69°	754.9	763.6	878.6	1207.4	2120.3	6021.6	12451.8	13681.5	12181.2	9638.0	7717.3
70°	733.4	743.0	847.4	1112.4	1781.1	4933.9	11943.5	13584.1	12415.0	9424.1	7233.7
72.5°	657.6	670.3	771.6	999.8	1501.0	2543.2	9620.4	11626.7	11246.0	8236.8	5609.0
75°	561.0	582.6	735.7	992.7	1422.0	1616.7	6415.7	8662.1	8370.1	5890.8	3182.4
77.5°	232.2	234.6	321.6	727.0	1492.2	1547.3	3448.1	5486.9	4857.3	2583.1	958.4
80°	162.0	158.8	160.4	212.3	1204.1	1557.6	1769.1	2790.5	2169.0	681.5	448.5
82.5°	136.5	134.8	141.3	133.3	407.7	1767.6	1479.5	1454.7	1021.4	367.0	213.9
85°	90.1	87.8	115.7	121.3	194.0	1403.7	1591.2	1143.6	761.3	196.3	90.9
87.5°	43.9	44.7	66.2	82.1	102.9	444.5	1524.2	904.1	588.1	85.4	36.7
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°	3175.1	3175.1	3175.1	3175.1	3175.1	3175.1	3175.1	3175.1	3175.1	3175.1	3175.1
2.5°	3124.1	3100.2	3078.6	3051.5	3030.7	3013.2	2989.3	2988.4	2984.5	2990.1	2991.6
5°	3054.6	3014.7	2954.2	2886.3	2838.4	2775.4	2714.0	2693.2	2670.0	2667.7	2674.8
7.5°	2950.2	2887.9	2784.2	2680.4	2576.7	2470.5	2370.0	2318.9	2269.4	2254.3	2261.4
10°	2833.7	2754.6	2595.8	2426.6	2280.7	2122.6	1969.4	1870.5	1780.3	1742.0	1751.6
12.5°	2742.6	2642.1	2418.7	2199.2	1980.6	1754.0	1552.1	1356.5	1208.9	1142.7	1146.7
15°	2664.5	2536.0	2252.7	1960.7	1686.9	1376.5	1096.4	869.8	740.5	692.6	691.0
17.5°	2579.9	2424.3	2079.6	1738.8	1383.7	999.8	734.2	600.1	549.0	533.1	533.1
20°	2489.7	2309.4	1898.4	1497.0	1064.5	698.3	552.2	500.3	481.2	476.4	475.6
22.5°	2405.9	2196.9	1716.5	1239.3	770.1	529.9	470.0	450.1	446.8	450.8	450.8
25°	2339.7	2097.9	1532.2	967.9	560.2	443.7	418.2	415.7	427.7	442.1	444.5
27.5°	2290.2	2009.3	1350.2	707.1	440.5	386.3	377.5	387.8	415.7	444.5	450.1
30°	2255.9	1933.5	1132.3	508.3	367.0	338.4	342.4	360.7	402.9	446.8	458.8
32.5°	2240.8	1872.1	912.9	390.3	313.6	297.7	308.0	331.9	375.8	419.7	434.1
35°	2255.1	1827.4	710.2	324.0	274.5	262.5	274.5	299.2	328.0	349.5	358.3
37.5°	2307.0	1811.4	534.7	287.2	249.0	237.0	246.5	263.3	276.1	284.1	288.1
40°	2416.3	1828.2	418.9	268.1	234.6	221.1	223.4	231.4	240.2	246.5	247.3
42.5°	2590.2	1883.3	372.7	261.0	225.9	208.3	204.3	209.9	219.4	228.2	229.9
45°	2821.7	1975.0	367.9	263.3	221.9	197.9	190.0	195.5	208.3	222.6	225.0
47.5°	3120.9	2120.3	390.3	276.1	224.2	192.3	180.3	186.0	202.6	221.9	225.0
50°	3475.2	2321.4	431.7	295.2	235.4	192.3	176.4	181.2	198.7	220.2	223.4
52.5°	3892.5	2601.5	474.8	314.5	251.3	199.5	178.0	177.2	193.1	213.1	217.1
55°	4353.0	2949.4	516.3	331.1	260.1	209.1	182.0	172.4	185.2	201.1	204.3
57.5°	4894.8	3425.8	588.9	347.1	264.9	216.3	186.7	167.6	174.7	186.0	188.3
60°	5629.8	4125.6	730.2	374.3	273.7	219.4	187.5	162.8	162.0	170.0	170.7
62.5°	6588.1	4945.1	865.0	406.2	291.2	220.2	184.3	159.6	151.6	154.1	154.1
65°	7269.6	5246.7	825.9	433.3	307.2	219.4	181.2	157.2	143.6	139.6	139.6
67.5°	6881.8	4634.7	701.4	440.5	308.8	210.6	174.0	151.6	136.5	126.8	126.8
69°	6312.0	4062.5	643.9	427.7	296.0	200.3	166.0	146.1	131.7	120.5	120.5
70°	5847.6	3629.2	608.9	412.6	280.9	191.5	158.8	140.5	126.8	117.3	116.5
72.5°	4365.7	2421.8	520.3	355.9	230.6	162.0	138.8	125.3	114.2	107.7	107.7
75°	2303.8	1213.7	426.2	290.4	178.0	129.3	114.2	105.4	98.9	98.1	97.4
77.5°	754.9	549.0	306.5	218.6	130.8	100.6	90.9	85.4	84.6	87.8	87.8
80°	407.7	328.0	197.1	147.6	90.9	75.0	70.2	69.5	71.8	76.6	76.6
82.5°	197.9	162.0	117.3	90.9	62.2	55.0	55.0	55.9	59.0	64.7	64.7
85°	85.4	76.6	67.8	51.0	38.3	34.3	39.1	43.1	45.5	49.5	51.0
87.5°	40.7	35.9	31.1	19.9	16.8	17.6	20.8	25.6	30.3	33.6	34.3
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)