

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: P195662

Luminaire Tested: **NAV-AF-02-D-UNV-SL3-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195662
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-SL3-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5000K, 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: 12165 lumens
Efficiency: N/A
Efficacy: 107.7 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

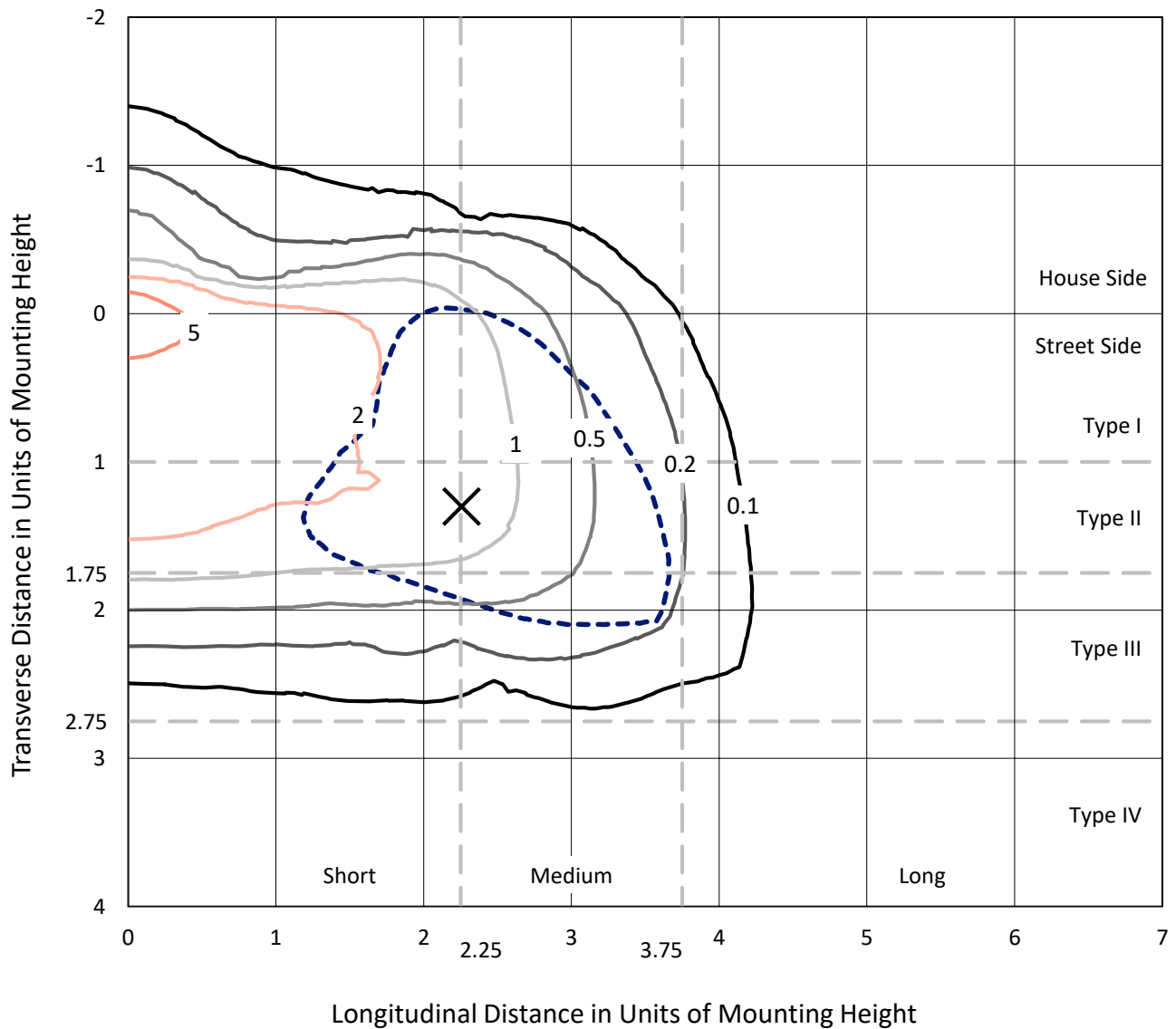
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

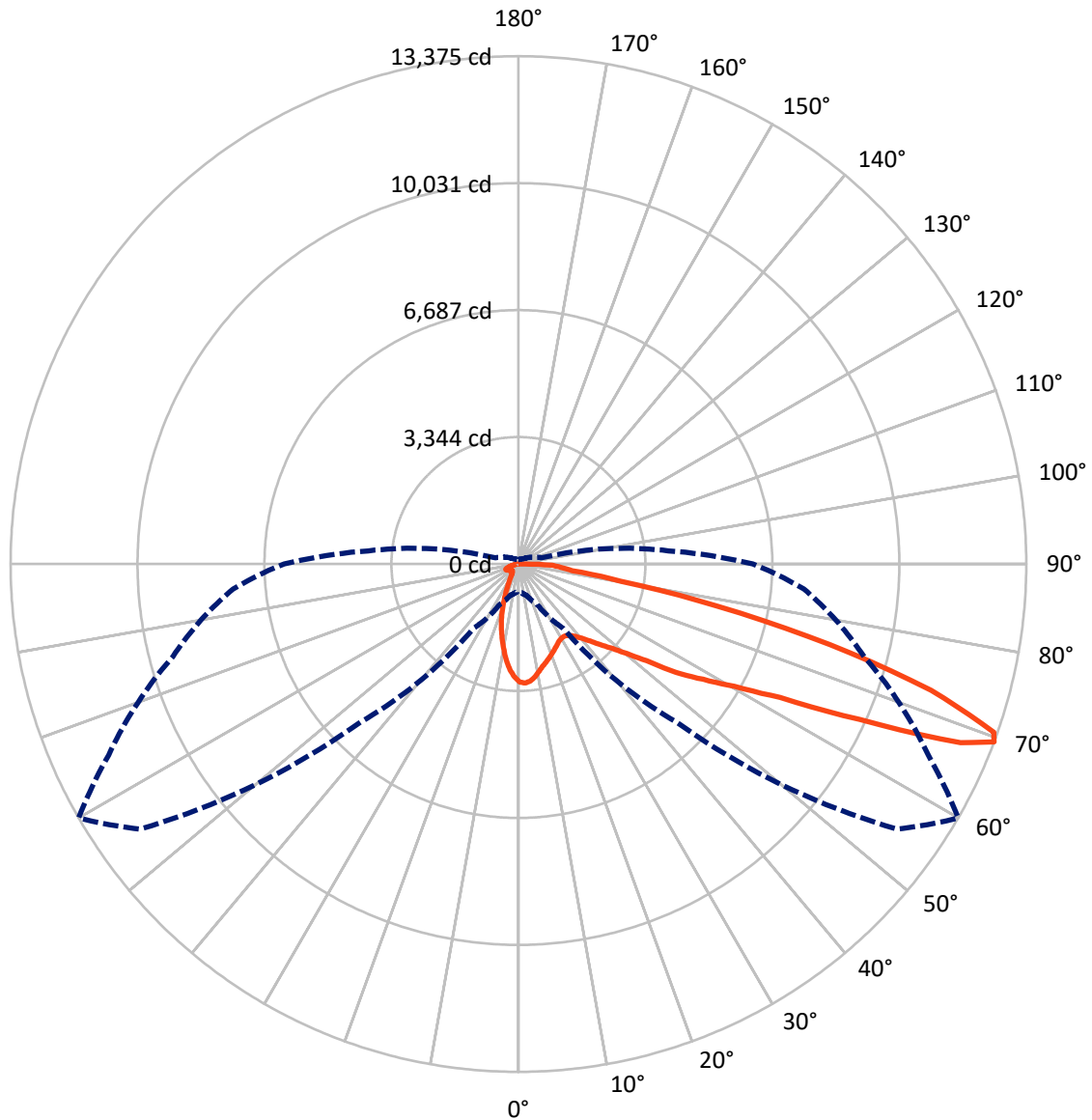
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.8 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	1735.1	0.0	1735.1
	% Fixture	14.3	0.0	14.3
Street Side	Lumens	10429.9	0.0	10429.9
	% Fixture	85.7	0.0	85.7
Total	Lumens	12165.0	0.0	12165.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	263.3	2.2
10°-20°	563.8	4.6
20°-30°	719.2	5.9
30°-40°	989.7	8.1
40°-50°	1603.2	13.2
50°-60°	2516.1	20.7
60°-70°	3354.4	27.6
70°-80°	1865.8	15.3
80°-90°	289.4	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°	12165.0	100.0
0°-180°	12165.0	100.0

Coefficient of Utilization



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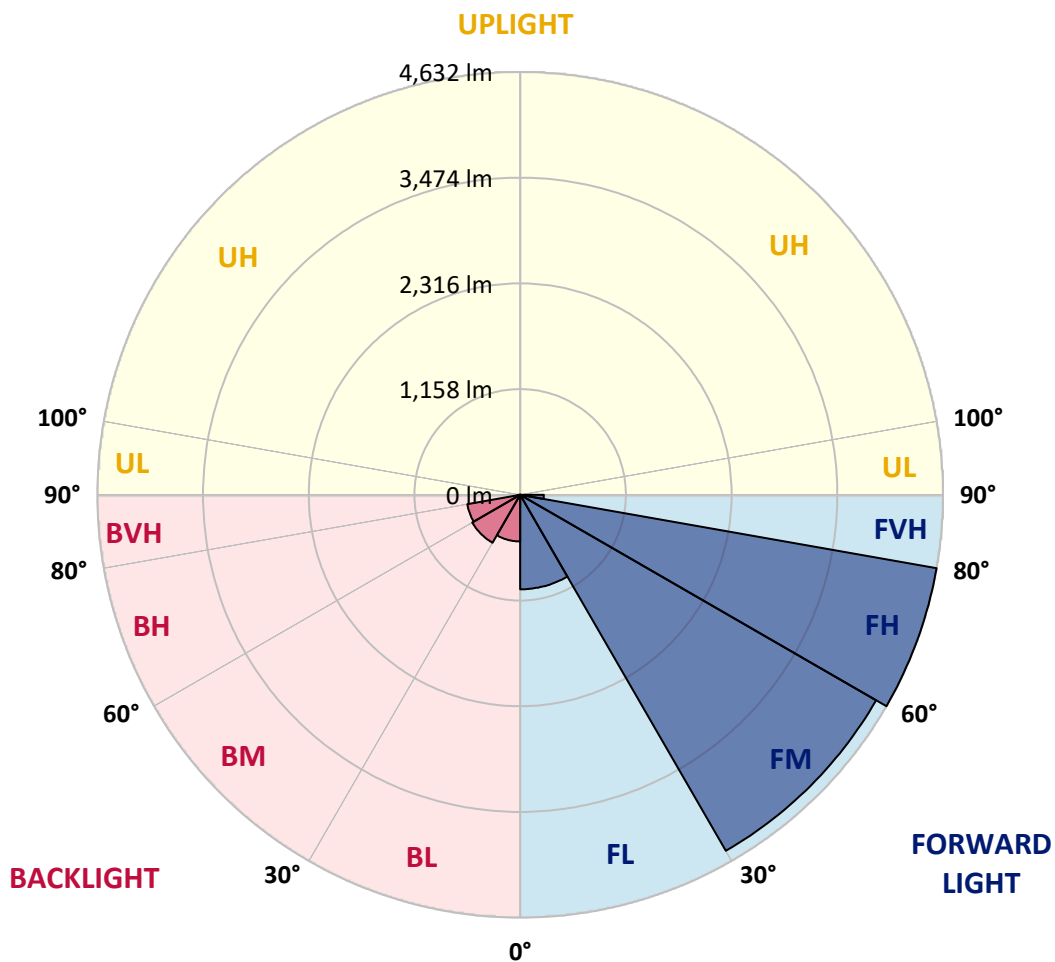
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1035.0	8.5			
FM	(30°-60°)	4502.9	37.0			
FH	(60°-80°)	4632.0	38.1			G2/5000
FVH	(80°-90°)	260.1	2.1			G3/500
BL	(0°-30°)	511.3	4.2	B2/1000		
BM	(30°-60°)	606.2	5.0	B1/1000		
BH	(60°-80°)	588.3	4.8	B2/1000		G2/1000
BVH	(80°-90°)	29.3	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°	3103.9	3103.9	3103.9	3103.9	3103.9	3103.9	3103.9	3103.9	3103.9	3103.9	3103.9
2.5°	3186.6	3195.2	3195.2	3188.2	3184.3	3161.7	3148.4	3139.0	3122.7	3092.2	3064.9
5°	3072.7	3089.1	3096.1	3099.3	3119.5	3112.5	3113.3	3107.1	3093.0	3060.3	3015.8
7.5°	2863.7	2866.8	2879.3	2900.3	2949.5	2983.8	3011.9	3017.3	3014.2	2990.0	2927.6
10°	2657.7	2663.2	2678.0	2713.9	2760.7	2809.8	2870.7	2895.7	2914.4	2906.6	2827.8
12.5°	2486.9	2487.7	2504.1	2545.4	2597.7	2659.3	2742.0	2781.0	2825.4	2843.4	2755.2
15°	2322.3	2333.2	2348.8	2398.7	2463.5	2541.5	2636.7	2690.5	2749.0	2800.5	2699.1
17.5°	2197.5	2206.1	2215.4	2256.8	2331.7	2429.2	2547.0	2604.7	2681.9	2760.7	2641.4
20°	2128.8	2132.0	2124.9	2145.2	2208.4	2313.7	2450.2	2519.7	2611.7	2722.5	2582.1
22.5°	2114.8	2114.8	2089.1	2085.2	2113.2	2202.2	2350.4	2435.4	2547.7	2696.0	2529.0
25°	2180.3	2175.6	2127.3	2082.8	2072.7	2117.9	2255.2	2359.7	2493.1	2695.2	2489.2
27.5°	2304.4	2298.1	2238.0	2163.2	2098.4	2078.9	2181.9	2288.8	2450.2	2721.7	2469.0
30°	2458.8	2456.5	2395.6	2302.0	2195.1	2094.5	2153.0	2252.1	2421.4	2770.8	2468.2
32.5°	2628.1	2617.2	2579.7	2486.1	2347.3	2181.1	2170.2	2253.7	2413.6	2842.6	2486.1
35°	2808.3	2800.5	2791.1	2696.7	2540.7	2334.0	2245.9	2307.5	2451.8	2942.5	2536.8
37.5°	3037.6	3029.1	3044.7	2941.7	2770.8	2534.5	2373.8	2415.1	2529.8	3087.6	2631.2
40°	3445.6	3420.7	3377.0	3218.6	3039.2	2780.2	2558.7	2564.9	2663.2	3281.8	2782.5
42.5°	4115.7	4035.4	3819.3	3528.3	3322.4	3065.7	2799.7	2770.1	2847.3	3538.4	3002.5
45°	4787.4	4696.9	4331.8	3866.1	3615.7	3372.3	3097.7	3026.7	3076.6	3837.2	3285.7
47.5°	5221.1	5176.6	4764.7	4203.9	3923.0	3706.2	3438.6	3321.6	3357.5	4175.8	3635.2
50°	5348.2	5310.0	4986.3	4468.3	4213.2	4109.5	3860.6	3705.4	3711.6	4571.3	4054.1
52.5°	5253.1	5237.5	5022.9	4632.1	4480.0	4534.6	4444.9	4228.8	4177.3	5005.0	4508.1
55°	5125.9	5131.4	5048.7	4796.7	4751.5	4930.9	5209.4	5035.4	4817.0	5456.7	4980.8
57.5°	4725.7	4729.6	4946.5	5110.3	5269.4	5486.3	5804.6	5731.2	5476.9	5944.2	5510.5
60°	3805.2	3835.7	4318.5	5045.6	5861.5	6580.8	6658.8	6532.4	6179.0	6505.9	6199.3
62.5°	2718.6	2745.9	3305.2	4380.1	5792.1	7819.5	8236.1	7733.7	7131.5	7346.0	7168.2
65°	1428.3	1423.6	1856.6	3026.7	4878.6	8106.6	10721.4	9866.5	8736.1	8501.3	8104.3
67.5°	798.0	823.8	991.5	1526.6	3179.6	7134.6	12308.9	12560.8	10967.1	9417.9	8063.7
69°	738.0	746.5	858.9	1180.3	2072.7	5886.5	12172.4	13374.5	11907.9	9421.8	7544.2
70°	716.9	726.3	828.4	1087.4	1741.1	4823.2	11675.5	13279.3	12136.5	9212.7	7071.4
72.5°	642.8	655.3	754.3	977.4	1467.3	2486.1	9404.6	11365.8	10993.7	8052.0	5483.2
75°	548.4	569.5	719.2	970.4	1390.1	1580.4	6271.8	8467.8	8182.3	5758.6	3111.0
77.5°	227.0	229.3	314.4	710.7	1458.7	1512.6	3370.7	5363.8	4748.3	2525.1	936.9
80°	158.4	155.2	156.8	207.5	1177.1	1522.7	1729.4	2727.9	2120.3	666.2	438.4
82.5°	133.4	131.8	138.1	130.3	398.6	1727.9	1446.3	1422.1	998.5	358.8	209.1
85°	88.1	85.8	113.1	118.6	189.6	1372.2	1555.5	1117.9	744.2	191.9	88.9
87.5°	42.9	43.7	64.7	80.3	100.6	434.5	1490.0	883.8	574.9	83.5	35.9
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°	3103.9	3103.9	3103.9	3103.9	3103.9	3103.9	3103.9	3103.9	3103.9	3103.9	3103.9
2.5°	3054.0	3030.6	3009.5	2983.0	2962.7	2945.6	2922.2	2921.4	2917.5	2923.0	2924.5
5°	2986.1	2947.1	2887.9	2821.5	2774.7	2713.1	2653.1	2632.8	2610.1	2607.8	2614.8
7.5°	2884.0	2823.1	2721.7	2620.3	2518.9	2415.1	2316.8	2266.9	2218.5	2203.7	2210.7
10°	2770.1	2692.8	2537.6	2372.2	2229.5	2075.0	1925.2	1828.5	1740.4	1702.9	1712.3
12.5°	2681.1	2582.8	2364.4	2149.9	1936.2	1714.6	1517.3	1326.1	1181.8	1117.1	1121.0
15°	2604.7	2479.1	2202.2	1916.7	1649.1	1345.6	1071.8	850.3	723.9	677.1	675.5
17.5°	2522.0	2369.9	2032.9	1699.8	1352.7	977.4	717.7	586.6	536.7	521.1	521.1
20°	2433.8	2257.6	1855.8	1463.4	1040.6	682.6	539.8	489.1	470.4	465.7	464.9
22.5°	2351.9	2147.6	1678.0	1211.5	752.8	518.0	459.5	440.0	436.8	440.7	440.7
25°	2287.2	2050.8	1497.8	946.2	547.6	433.7	408.8	406.4	418.1	432.2	434.5
27.5°	2238.8	1964.2	1319.9	691.2	430.6	377.6	369.0	379.1	406.4	434.5	440.0
30°	2205.3	1890.1	1106.9	496.9	358.8	330.8	334.7	352.6	393.9	436.8	448.5
32.5°	2190.5	1830.1	892.4	381.5	306.6	291.0	301.1	324.5	367.4	410.3	424.4
35°	2204.5	1786.4	694.3	316.7	268.3	256.6	268.3	292.5	320.6	341.7	350.3
37.5°	2255.2	1770.8	522.7	280.8	243.4	231.7	241.0	257.4	269.9	277.7	281.6
40°	2362.1	1787.2	409.5	262.1	229.3	216.1	218.4	226.2	234.8	241.0	241.8
42.5°	2532.1	1841.0	364.3	255.1	220.8	203.6	199.7	205.2	214.5	223.1	224.7
45°	2758.4	1930.7	359.6	257.4	216.9	193.5	185.7	191.1	203.6	217.6	220.0
47.5°	3050.9	2072.7	381.5	269.9	219.2	188.0	176.3	181.8	198.1	216.9	220.0
50°	3397.2	2269.3	422.0	288.6	230.1	188.0	172.4	177.1	194.2	215.3	218.4
52.5°	3805.2	2543.1	464.1	307.4	245.7	195.0	174.0	173.2	188.8	208.3	212.2
55°	4255.3	2883.2	504.7	323.7	254.3	204.4	177.9	168.5	181.0	196.6	199.7
57.5°	4785.0	3348.9	575.7	339.3	259.0	211.4	182.5	163.8	170.8	181.8	184.1
60°	5503.5	4033.0	713.8	365.9	267.6	214.5	183.3	159.1	158.4	166.2	166.9
62.5°	6440.3	4834.2	845.6	397.1	284.7	215.3	180.2	156.0	148.2	150.6	150.6
65°	7106.5	5129.0	807.4	423.6	300.3	214.5	177.1	153.7	140.4	136.5	136.5
67.5°	6727.4	4530.7	685.7	430.6	301.9	205.9	170.1	148.2	133.4	124.0	124.0
69°	6170.4	3971.4	629.5	418.1	289.4	195.8	162.3	142.8	128.7	117.8	117.8
70°	5716.4	3547.8	595.2	403.3	274.6	187.2	155.2	137.3	124.0	114.7	113.9
72.5°	4267.8	2367.5	508.6	347.9	225.4	158.4	135.7	122.5	111.6	105.3	105.3
75°	2252.1	1186.5	416.6	283.9	174.0	126.4	111.6	103.0	96.7	95.9	95.2
77.5°	738.0	536.7	299.6	213.7	127.9	98.3	88.9	83.5	82.7	85.8	85.8
80°	398.6	320.6	192.7	144.3	88.9	73.3	68.6	67.9	70.2	74.9	74.9
82.5°	193.5	158.4	114.7	88.9	60.8	53.8	53.8	54.6	57.7	63.2	63.2
85°	83.5	74.9	66.3	49.9	37.4	33.5	38.2	42.1	44.5	48.4	49.9
87.5°	39.8	35.1	30.4	19.5	16.4	17.2	20.3	25.0	29.6	32.8	33.5
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)