

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: P195614

Luminaire Tested: **NAV-AF-02-D-UNV-SL2-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195614
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-02-D-UNV-SL2-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5000K, 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: 11941 lumens
Efficiency: N/A
Efficacy: 105.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B2 - U0 - G3

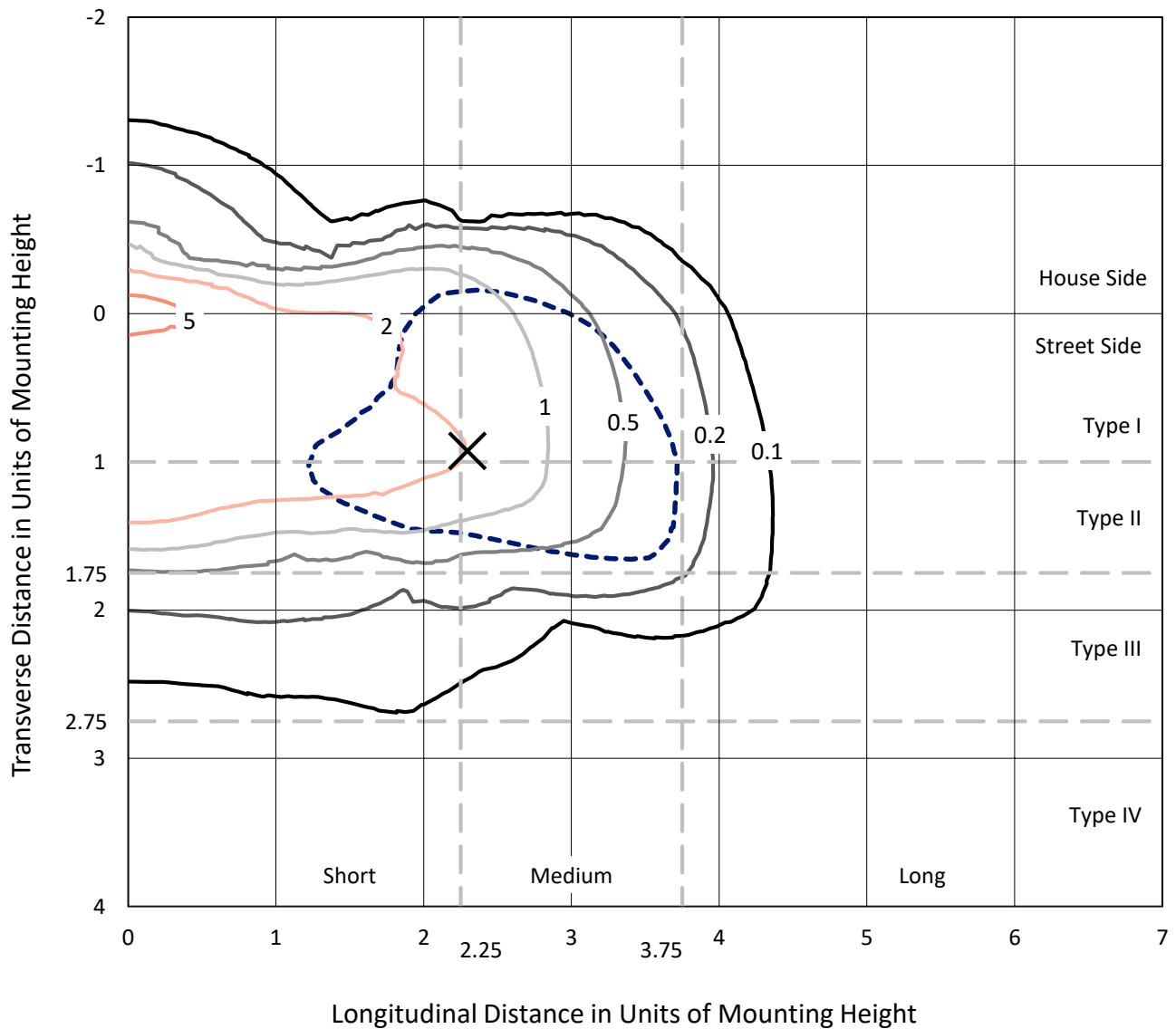
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

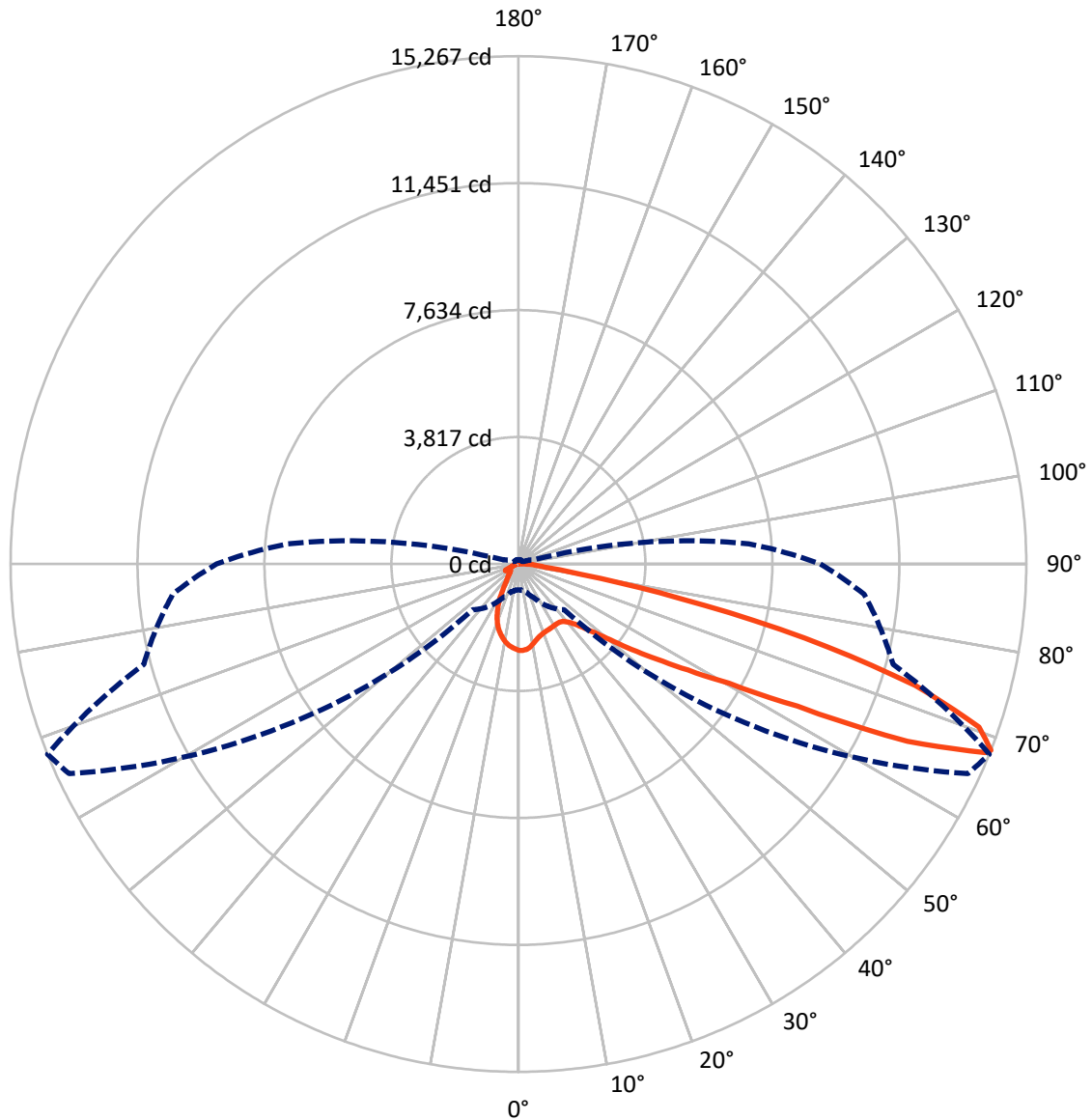
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.5 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	1953.6	0.0	1953.6
	% Fixture	16.4	0.0	16.4
Street Side	Lumens	9987.4	0.0	9987.4
	% Fixture	83.6	0.0	83.6
Total	Lumens	11941.0	0.0	11941.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	222.6	1.9
10°-20°	516.4	4.3
20°-30°	698.3	5.8
30°-40°	984.6	8.2
40°-50°	1619.1	13.6
50°-60°	2509.8	21.0
60°-70°	3254.1	27.3
70°-80°	1867.4	15.6
80°-90°	268.7	2.2
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°	11941.0	100.0
0°-180°	11941.0	100.0



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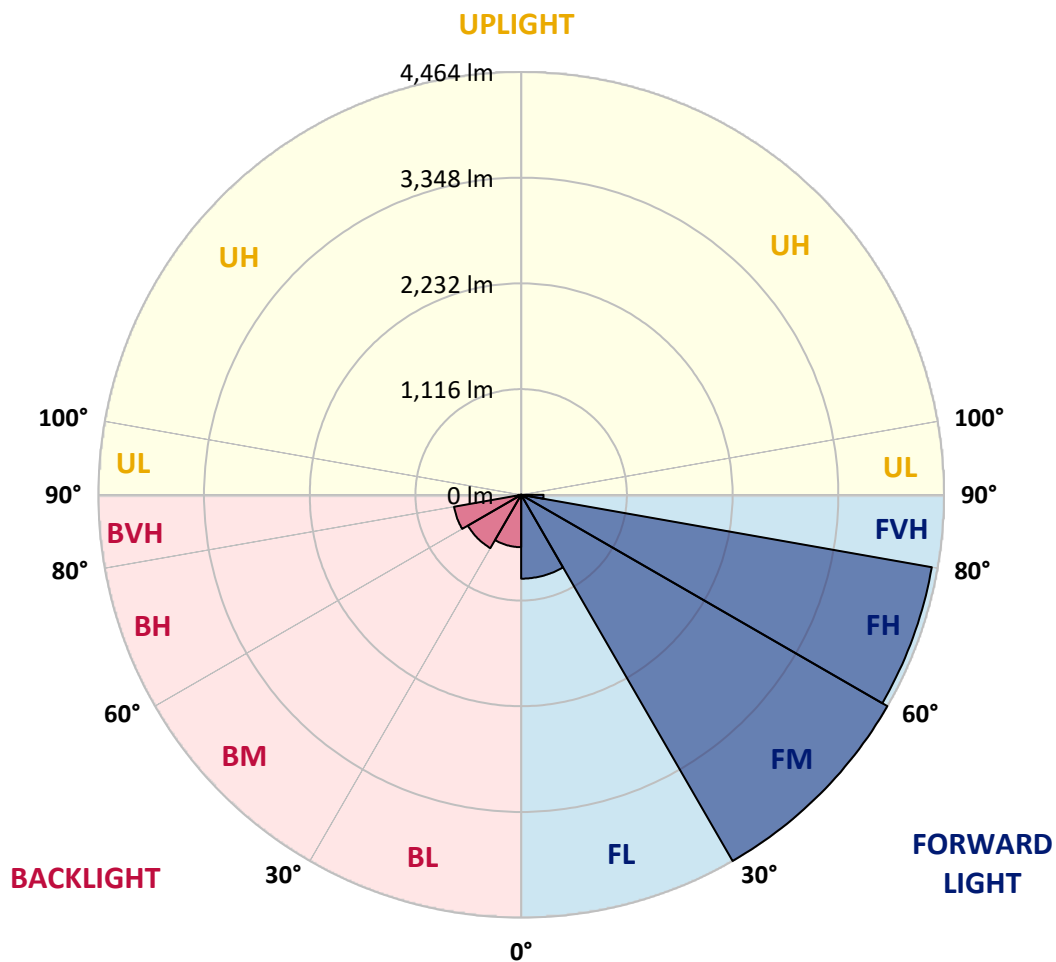
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	885.0	7.4			
FM	(30°-60°)	4463.7	37.4			
FH	(60°-80°)	4402.0	36.9			G2/5000
FVH	(80°-90°)	236.6	2.0			G3/500
BL	(0°-30°)	552.3	4.6	B2/1000		
BM	(30°-60°)	649.8	5.4	B1/1000		
BH	(60°-80°)	719.5	6.0	B2/1000		G2/1000
BVH	(80°-90°)	32.0	0.3			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 II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	2598.3	2598.3	2598.3	2598.3	2598.3	2598.3	2598.3	2598.3	2598.3	2598.3	2598.3
2.5°	2528.8	2549.1	2549.1	2563.9	2577.2	2588.1	2597.5	2597.5	2597.5	2591.2	2585.8
5°	2262.8	2290.1	2294.0	2331.5	2380.6	2440.7	2507.8	2567.1	2578.8	2600.6	2609.2
7.5°	2078.0	2086.6	2101.4	2127.1	2177.0	2251.1	2356.4	2489.1	2521.0	2589.7	2625.6
10°	1946.9	1954.0	1966.4	1992.2	2037.4	2104.5	2208.2	2380.6	2433.7	2555.4	2626.3
12.5°	1851.0	1856.5	1868.2	1891.6	1937.6	1997.6	2103.7	2283.1	2348.6	2521.0	2637.3
15°	1776.1	1785.5	1794.8	1817.5	1864.3	1922.0	2029.6	2212.1	2283.1	2493.7	2657.5
17.5°	1746.5	1751.2	1752.7	1764.4	1806.5	1865.0	1972.7	2162.2	2235.5	2471.9	2673.1
20°	1765.2	1766.0	1750.4	1742.6	1766.8	1820.6	1925.1	2124.8	2199.7	2452.4	2679.4
22.5°	1847.1	1847.1	1806.5	1772.2	1755.8	1789.4	1893.1	2099.0	2180.2	2437.6	2679.4
25°	2003.1	1996.1	1932.9	1865.0	1792.5	1778.5	1872.8	2082.7	2165.3	2429.8	2669.2
27.5°	2208.2	2202.0	2121.7	2021.0	1890.0	1801.9	1865.8	2069.4	2150.5	2418.1	2647.4
30°	2457.9	2452.4	2361.1	2229.3	2035.9	1876.0	1882.2	2060.0	2138.8	2398.6	2610.7
32.5°	2706.7	2703.6	2631.0	2496.1	2237.1	2001.5	1925.1	2058.5	2132.6	2375.2	2566.3
35°	2957.1	2957.1	2912.6	2798.7	2507.8	2190.3	2014.8	2087.3	2144.3	2362.7	2528.1
37.5°	3326.8	3312.0	3229.3	3111.5	2848.6	2435.2	2159.9	2148.2	2189.5	2383.7	2515.6
40°	3899.3	3856.4	3649.7	3451.6	3220.7	2748.8	2372.0	2266.0	2290.9	2455.5	2545.2
42.5°	4498.4	4430.5	4156.7	3840.1	3605.3	3135.7	2650.5	2457.1	2456.3	2594.4	2639.6
45°	5012.4	4977.3	4680.9	4279.2	4044.4	3570.9	3002.3	2741.0	2712.9	2809.6	2821.3
47.5°	5311.2	5287.8	5109.1	4744.1	4565.5	4085.0	3448.5	3134.9	3081.9	3139.6	3121.7
50°	5228.5	5251.1	5199.6	5013.2	5125.5	4807.3	4017.1	3674.7	3574.1	3631.8	3588.1
52.5°	4793.2	4854.1	4900.1	4936.0	5447.7	5773.7	4731.6	4348.6	4265.2	4255.0	4212.9
55°	4009.3	4106.0	4251.1	4514.8	5361.1	6549.8	5979.7	5163.7	5042.1	4978.1	4994.5
57.5°	2728.5	2875.2	3188.0	3689.5	4911.0	6880.6	7825.2	6216.8	6010.9	5783.1	5836.1
60°	1503.1	1625.6	1997.6	2503.1	3883.7	6831.4	9460.9	7928.1	7280.0	6676.2	6785.4
62.5°	972.7	999.2	1276.1	1709.8	2383.7	6031.1	10369.6	10788.5	9414.9	7854.0	8007.7
65°	781.6	800.3	936.0	1379.1	1660.7	3879.8	10410.2	13755.7	12850.1	9454.7	9459.3
67.5°	763.6	772.2	851.0	1159.9	1557.7	2112.3	8998.3	14925.7	15135.6	11343.9	10430.5
68°	774.6	784.7	864.3	1124.0	1556.9	1946.9	8316.6	14907.8	15267.4	11659.8	10430.5
70°	683.3	695.8	881.4	1163.0	1490.6	1673.9	5694.9	14116.1	14694.8	12386.0	9896.9
72.5°	357.3	347.1	436.0	918.1	1677.8	1744.1	3008.5	11793.2	12468.7	11471.0	8550.6
75°	278.5	253.5	244.1	362.7	1475.8	1808.9	1747.3	8382.1	8892.3	8269.0	5715.2
77.5°	262.1	231.7	213.7	214.5	649.8	1882.2	1413.4	4932.9	4932.9	3944.6	1823.7
80°	210.6	182.5	170.8	195.0	313.6	1734.8	1475.0	2248.0	1917.3	1019.5	502.3
82.5°	138.8	124.0	124.8	158.3	237.9	1158.3	1708.2	1110.0	833.8	451.6	295.6
85°	88.1	75.7	84.2	110.8	177.8	516.4	1691.1	771.4	552.3	253.5	147.4
87.5°	44.5	34.3	42.1	57.7	108.4	148.2	1392.3	688.8	409.5	105.3	80.3
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°	2598.3	2598.3	2598.3	2598.3	2598.3	2598.3	2598.3	2598.3	2598.3	2598.3	2598.3
2.5°	2585.8	2568.6	2560.0	2546.0	2528.8	2511.7	2500.0	2494.5	2491.4	2493.0	2492.2
5°	2604.5	2581.9	2545.2	2493.0	2439.1	2382.2	2338.5	2305.0	2283.9	2277.7	2276.1
7.5°	2618.5	2585.8	2517.1	2422.0	2329.9	2230.1	2145.1	2077.2	2031.2	2010.1	2009.3
10°	2616.2	2574.1	2465.7	2325.2	2190.3	2043.7	1910.3	1796.4	1713.7	1673.9	1672.4
12.5°	2618.5	2560.8	2402.5	2212.1	2018.7	1808.9	1610.7	1433.7	1310.4	1251.9	1249.6
15°	2627.9	2546.8	2337.7	2085.8	1818.2	1521.8	1238.7	1016.4	904.0	865.8	865.8
17.5°	2627.1	2523.4	2262.8	1939.1	1580.3	1183.3	845.5	708.3	697.3	732.4	737.9
20°	2611.5	2485.9	2166.1	1765.2	1301.1	819.0	573.3	553.8	641.2	737.9	748.8
22.5°	2587.3	2437.6	2054.6	1563.2	975.8	533.5	442.3	471.9	590.5	710.6	727.8
25°	2553.8	2379.1	1926.7	1328.4	649.0	383.8	369.0	405.6	489.1	569.4	581.9
27.5°	2504.7	2305.0	1787.0	1074.1	414.2	315.9	321.4	347.1	383.0	417.3	424.3
30°	2443.0	2218.4	1634.9	792.5	314.3	282.4	291.7	307.3	322.9	344.8	349.5
32.5°	2380.6	2130.2	1476.6	544.5	274.6	264.4	273.8	282.4	295.6	310.4	313.6
35°	2324.5	2048.3	1313.6	379.9	257.4	252.7	257.4	262.9	276.1	290.9	292.5
37.5°	2283.9	1981.3	1143.5	300.3	247.3	242.6	244.9	247.3	262.9	284.7	287.0
40°	2278.4	1936.8	971.1	269.9	239.5	233.2	231.7	233.2	253.5	278.5	280.8
42.5°	2331.5	1939.1	802.6	257.4	233.2	226.2	220.0	223.1	241.0	260.5	262.1
45°	2457.1	1993.7	656.8	251.9	227.8	222.3	212.9	214.5	223.1	233.2	234.8
47.5°	2678.6	2113.1	545.2	248.8	223.1	218.4	206.7	202.0	202.8	208.3	208.3
50°	3032.7	2312.8	477.4	245.7	219.2	210.6	197.3	188.0	185.6	188.8	189.5
52.5°	3560.8	2655.2	444.6	239.5	212.2	200.5	185.6	176.3	172.4	175.5	175.5
55°	4274.5	3202.0	429.0	230.9	203.6	188.0	174.7	166.9	163.8	166.1	166.1
57.5°	5088.1	3912.6	455.5	219.2	192.7	174.7	165.4	159.9	157.6	159.9	160.7
60°	6054.5	4842.4	638.1	204.4	181.0	163.0	157.6	154.4	152.9	155.2	155.2
62.5°	7339.2	6079.5	987.5	192.7	168.5	152.1	150.5	149.0	147.4	149.8	149.8
65°	8726.1	7205.1	1016.4	185.6	157.6	142.7	143.5	143.5	142.0	144.3	144.3
67.5°	9167.6	7107.6	567.9	177.1	144.3	133.4	136.5	136.5	135.7	138.1	137.3
68°	9074.0	6953.1	494.5	174.7	142.0	131.0	134.2	134.9	134.2	136.5	135.7
70°	8376.7	6104.5	325.3	161.5	131.8	123.2	127.9	128.7	127.9	131.0	130.3
72.5°	6914.9	4578.7	240.2	141.2	119.3	113.1	117.8	118.6	119.3	122.5	121.7
75°	4391.5	2528.8	189.5	120.1	106.9	101.4	106.1	108.4	110.0	114.7	112.3
77.5°	1202.8	767.5	153.7	102.2	92.0	89.7	92.8	95.9	97.5	103.0	99.1
80°	421.2	339.3	127.9	86.6	76.4	75.7	78.8	81.9	83.5	88.1	83.5
82.5°	255.8	221.5	102.2	67.9	60.1	59.3	63.2	66.3	67.9	67.9	64.7
85°	133.4	117.0	74.9	47.6	41.3	39.0	46.0	49.9	50.7	49.9	47.6
87.5°	74.9	66.3	39.8	22.6	18.7	19.5	24.2	29.6	32.0	31.2	29.6
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)