

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: P196671

Luminaire Tested: **NAV-AF-03-D-UNV-SL4-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196671
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-03-D-UNV-SL4-7030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16713.4 lumens
Efficiency: N/A
Efficacy: 100.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G4

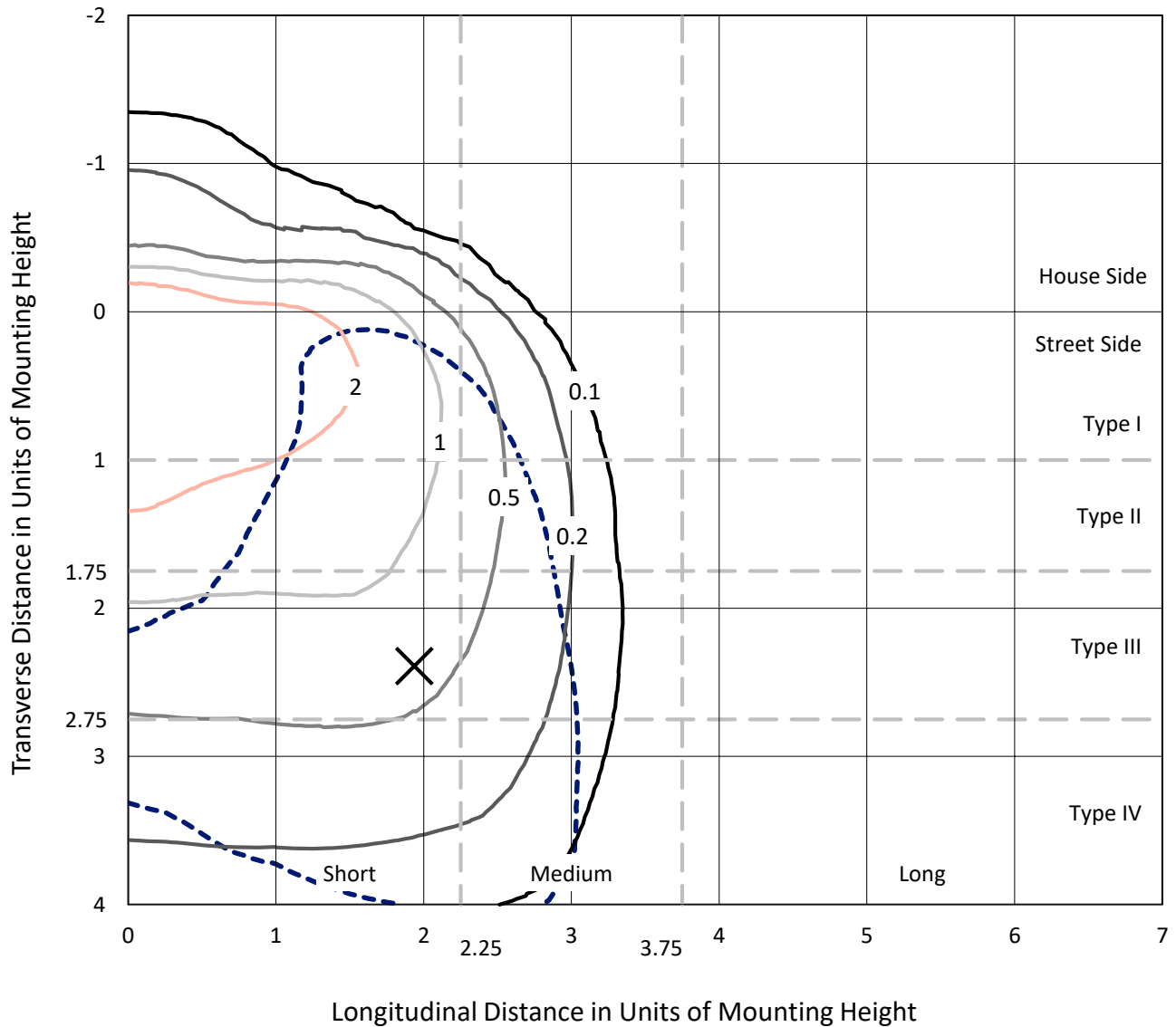
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

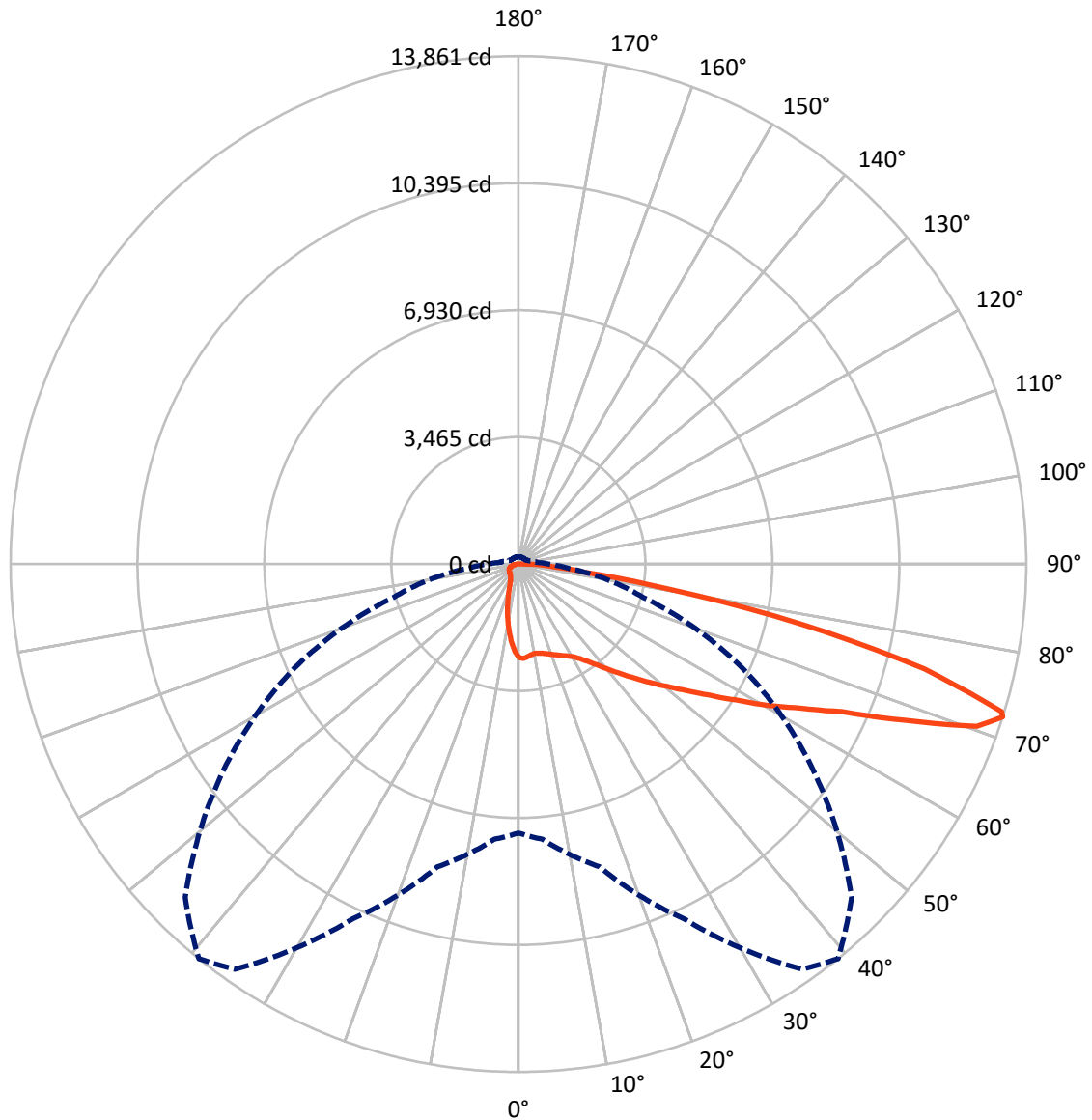
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.1 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	1916.4	0.0	1916.4
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	14797.0	0.0	14797.0
	% Fixture	88.5	0.0	88.5
Total	Lumens	16713.4	0.0	16713.4
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.3	1.3
10°-20°	551.2	3.3
20°-30°	858.9	5.1
30°-40°	1322.5	7.9
40°-50°	2156.0	12.9
50°-60°	3350.1	20.0
60°-70°	4484.0	26.8
70°-80°	3224.7	19.3
80°-90°	546.7	3.3
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°	16713.4	100.0
0°-180°	16713.4	100.0

Coefficient of Utilization



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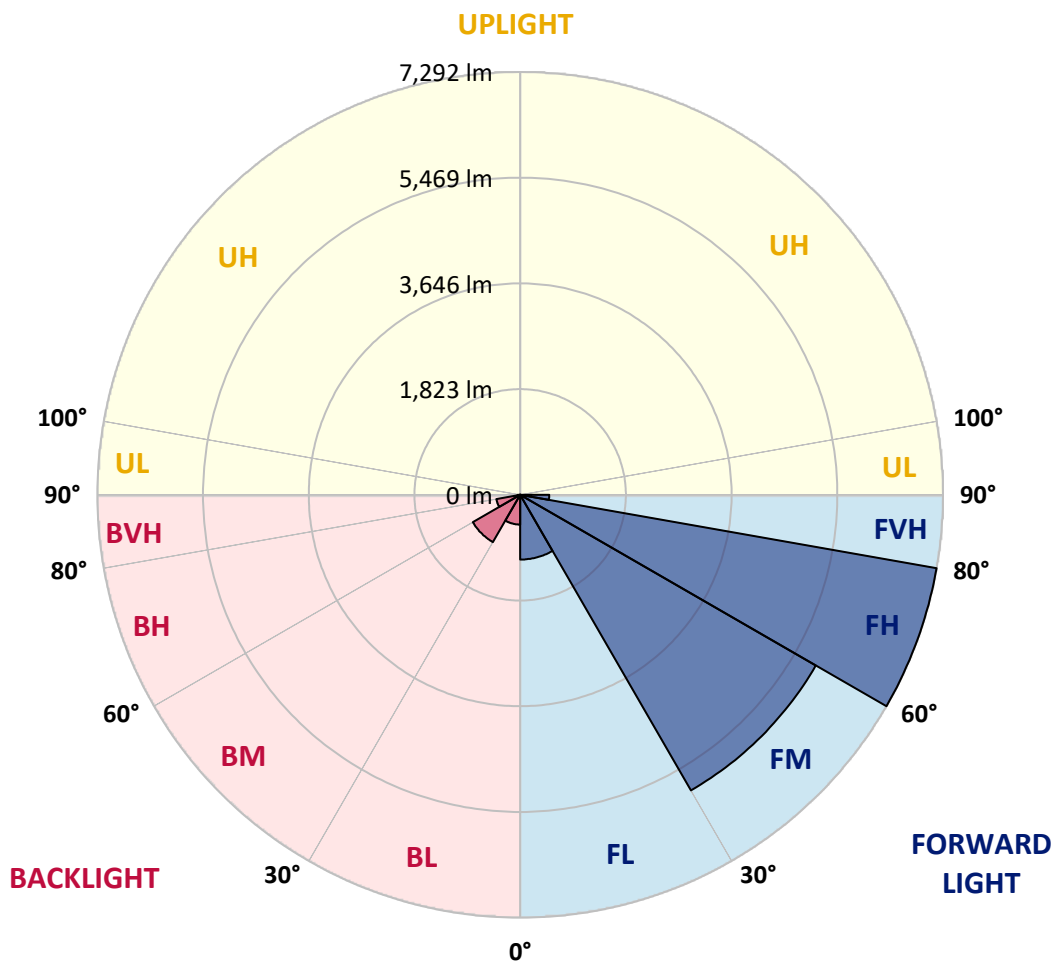
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1116.4	6.7			
FM	(30°-60°)	5886.8	35.2			
FH	(60°-80°)	7292.3	43.6			G3/7500
FVH	(80°-90°)	501.5	3.0			G4/750
BL	(0°-30°)	513.0	3.1	B2/1000		
BM	(30°-60°)	941.8	5.6	B1/1000		
BH	(60°-80°)	416.4	2.5	B1/500		G1/500
BVH	(80°-90°)	45.2	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-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	2552.4	2552.4	2552.4	2552.4	2552.4	2552.4	2552.4	2552.4	2552.4	2552.4	2552.4
2.5°	2607.4	2608.6	2605.2	2595.0	2586.0	2581.6	2573.7	2560.3	2542.4	2530.0	2519.8
5°	2582.8	2586.0	2583.9	2567.0	2551.3	2542.4	2530.0	2510.9	2487.4	2477.2	2453.8
7.5°	2563.7	2565.9	2559.2	2540.1	2509.8	2498.5	2476.2	2451.4	2430.2	2415.5	2387.6
10°	2550.2	2552.4	2546.9	2527.7	2494.1	2480.6	2453.8	2426.7	2398.7	2380.8	2349.4
12.5°	2531.1	2535.6	2535.6	2526.6	2504.2	2495.3	2468.2	2439.1	2413.3	2394.2	2355.0
15°	2527.7	2533.4	2543.4	2542.4	2535.6	2529.0	2507.6	2478.4	2455.9	2433.5	2385.2
17.5°	2555.8	2568.1	2588.4	2595.0	2590.5	2576.0	2551.3	2524.4	2499.8	2478.4	2418.9
20°	2626.5	2633.2	2663.5	2677.0	2654.6	2633.2	2600.7	2565.9	2543.4	2526.6	2450.3
22.5°	2733.1	2742.1	2766.8	2767.9	2720.8	2694.9	2653.4	2610.8	2589.5	2582.8	2493.0
25°	2903.6	2901.4	2908.1	2880.1	2794.8	2764.5	2714.0	2664.7	2650.1	2663.5	2555.8
27.5°	3107.8	3102.2	3080.9	3007.9	2878.9	2839.6	2779.1	2735.3	2735.3	2766.8	2641.1
30°	3343.5	3337.8	3268.3	3145.9	2978.7	2933.9	2869.9	2824.0	2847.6	2908.1	2756.6
32.5°	3592.5	3572.3	3474.7	3310.9	3121.2	3072.0	3010.2	2963.1	3007.9	3111.1	2922.6
35°	3827.0	3815.8	3695.7	3501.6	3305.3	3263.8	3221.1	3162.7	3234.6	3395.0	3157.1
37.5°	4069.4	4060.3	3913.3	3706.9	3529.6	3501.6	3465.7	3425.3	3540.9	3751.8	3474.7
40°	4339.7	4321.8	4136.7	3930.2	3791.1	3777.6	3758.5	3747.3	3933.6	4247.7	3876.3
42.5°	4646.0	4611.2	4372.2	4175.9	4076.0	4087.3	4077.1	4122.1	4407.0	4819.9	4354.3
45°	4996.0	4926.5	4606.7	4437.3	4391.3	4436.2	4457.4	4572.0	4966.8	5480.8	4888.4
47.5°	5323.6	5233.8	4863.6	4721.2	4747.0	4824.4	4885.0	5086.9	5580.5	6133.7	5433.6
50°	5625.4	5524.4	5138.6	5015.1	5140.7	5250.7	5376.4	5661.4	6233.6	6805.8	5934.0
52.5°	5848.7	5775.8	5413.4	5336.0	5592.9	5738.8	5939.6	6299.8	6893.2	7446.3	6380.5
55°	6021.5	5982.3	5681.6	5704.0	6104.6	6313.2	6556.6	6970.6	7591.2	8020.8	6739.5
57.5°	6221.2	6192.0	5987.9	6148.2	6739.5	7002.1	7289.3	7749.3	8255.3	8526.8	7021.1
60°	6432.1	6432.1	6329.0	6683.5	7533.9	7834.6	8120.7	8478.5	8917.3	8982.3	7135.6
62.5°	6591.5	6632.9	6669.9	7253.4	8287.9	8661.4	8975.6	9318.9	9602.8	9206.7	6866.3
65°	6822.5	6911.2	7119.9	7912.0	9221.3	9710.4	10134.6	10422.9	10158.2	9028.3	5987.9
67.5°	7219.8	7351.0	7795.3	8892.6	10650.7	11383.2	11795.1	11296.9	10049.3	7905.2	4586.4
70°	7577.6	7762.8	8522.3	10136.8	12508.6	13269.3	13079.7	11093.8	8752.3	5794.9	2821.7
72°	7339.8	7541.7	8556.0	10678.7	13501.5	13860.5	12860.9	9831.7	6763.1	3536.4	1391.2
72.5°	7183.8	7393.7	8447.2	10665.3	13528.5	13785.4	12556.8	9330.0	6139.3	3094.3	1125.3
75°	6001.3	6180.8	7263.4	9452.4	11921.9	11450.6	9799.1	6038.3	2821.7	999.6	579.0
77.5°	3919.0	4055.8	5008.3	6548.8	8350.6	7897.4	5964.3	2827.3	1057.9	606.9	435.3
80°	1969.1	2066.6	2680.3	3443.3	4506.8	4146.7	2753.3	1367.7	708.0	438.6	342.2
82.5°	1369.9	1459.7	1845.6	1758.1	1883.7	1823.2	1294.7	1141.0	529.6	277.1	179.5
85°	1148.9	1242.0	1527.0	1253.2	1025.5	934.6	927.8	1078.2	350.0	136.9	151.5
87.5°	1001.9	1143.3	1260.0	915.5	703.4	620.5	683.3	988.5	111.1	75.2	46.0
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°	2552.4	2552.4	2552.4	2552.4	2552.4	2552.4	2552.4	2552.4	2552.4	2552.4	2552.4
2.5°	2503.0	2499.8	2482.9	2457.0	2438.0	2425.7	2402.1	2401.0	2403.2	2383.1	2390.9
5°	2432.4	2418.9	2375.2	2315.8	2267.4	2221.5	2171.0	2154.1	2139.6	2109.2	2112.6
7.5°	2358.4	2334.8	2258.5	2160.8	2067.7	1982.5	1898.4	1856.9	1825.4	1786.2	1786.2
10°	2314.5	2277.5	2160.8	2018.3	1870.3	1745.8	1620.1	1544.9	1490.0	1439.5	1436.1
12.5°	2312.4	2256.2	2093.5	1897.2	1694.2	1519.1	1347.5	1231.9	1150.0	1090.5	1085.0
15°	2330.3	2251.8	2037.4	1783.8	1528.1	1300.3	1088.3	941.3	836.9	770.9	764.0
17.5°	2346.1	2246.2	1976.8	1665.0	1366.5	1089.5	853.8	701.2	602.4	548.6	543.0
20°	2360.5	2233.8	1899.5	1539.4	1188.2	892.0	667.6	544.1	479.1	448.7	445.4
22.5°	2381.9	2222.6	1818.7	1398.0	1013.2	725.9	550.8	462.2	427.4	412.9	410.6
25°	2416.7	2223.8	1740.2	1253.2	852.7	604.8	476.8	421.8	402.7	392.7	392.7
27.5°	2467.2	2237.2	1662.7	1106.2	717.0	521.7	433.1	400.6	388.2	380.3	378.1
30°	2541.3	2261.8	1580.9	967.2	609.2	464.5	407.3	387.1	377.0	370.3	369.1
32.5°	2648.9	2305.6	1494.4	840.3	527.2	424.2	388.2	375.9	367.9	362.4	361.3
35°	2809.4	2383.1	1410.3	732.6	468.9	395.0	372.5	362.4	358.0	355.6	354.5
37.5°	3044.9	2507.6	1330.7	648.5	430.8	375.9	356.7	351.2	349.0	349.0	349.0
40°	3341.1	2671.4	1258.7	589.0	409.5	361.3	345.6	341.1	341.1	342.2	342.2
42.5°	3701.2	2876.7	1197.2	548.6	397.1	351.2	337.7	335.4	334.4	334.4	335.4
45°	4119.8	3119.1	1159.0	517.3	388.2	345.6	332.1	330.9	326.4	324.3	324.3
47.5°	4540.5	3378.2	1156.7	499.4	377.0	338.8	326.4	326.4	317.5	313.0	314.1
50°	4933.2	3610.5	1181.4	494.7	370.3	328.8	320.9	322.0	309.6	304.1	302.9
52.5°	5249.6	3787.7	1211.6	500.4	370.3	319.8	310.8	316.5	302.9	296.2	295.1
55°	5494.2	3911.2	1222.9	512.8	374.8	311.9	301.8	310.8	300.7	291.7	291.7
57.5°	5669.3	3950.4	1174.6	518.3	381.5	310.8	292.9	309.6	304.1	292.9	292.9
60°	5605.2	3722.7	995.2	497.0	380.3	308.5	286.2	311.9	315.3	302.9	302.9
62.5°	5106.0	3114.6	798.8	448.7	361.3	300.7	278.3	309.6	323.1	318.6	316.5
65°	4156.8	2284.3	619.3	391.5	328.8	283.8	261.4	289.4	305.2	309.6	310.8
67.5°	2929.5	1446.1	481.3	333.2	288.3	259.2	242.3	255.7	261.4	263.7	268.1
70°	1602.2	783.2	382.6	280.5	246.8	234.5	222.2	223.2	221.0	218.7	221.0
72°	804.4	511.7	323.1	243.4	218.7	211.0	205.3	201.9	201.9	198.7	199.7
72.5°	692.2	475.8	311.9	234.5	212.1	205.3	200.8	197.4	196.3	194.1	195.2
75°	461.1	377.0	260.2	196.3	180.6	176.1	178.4	175.1	176.1	173.9	175.1
77.5°	372.5	324.3	221.0	166.1	154.8	148.0	152.6	153.7	155.9	153.7	152.6
80°	311.9	276.0	185.0	136.9	129.0	123.5	125.6	133.6	134.6	128.0	126.7
82.5°	201.9	222.2	145.9	106.6	98.8	96.4	102.0	110.0	112.2	103.2	100.9
85°	169.5	178.4	105.4	72.8	65.1	62.9	74.1	82.0	87.5	78.5	76.3
87.5°	47.1	87.5	51.6	34.8	29.2	29.2	35.9	42.6	50.5	51.6	51.6
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)