

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: P197146

Luminaire Tested: **NAV-AF-04-D-UNV-SL4-8030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197146
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-04-D-UNV-SL4-8030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 80 CRI, 3000K, 800mA 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: 15344 lumens
Efficiency: N/A
Efficacy: 89.7 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

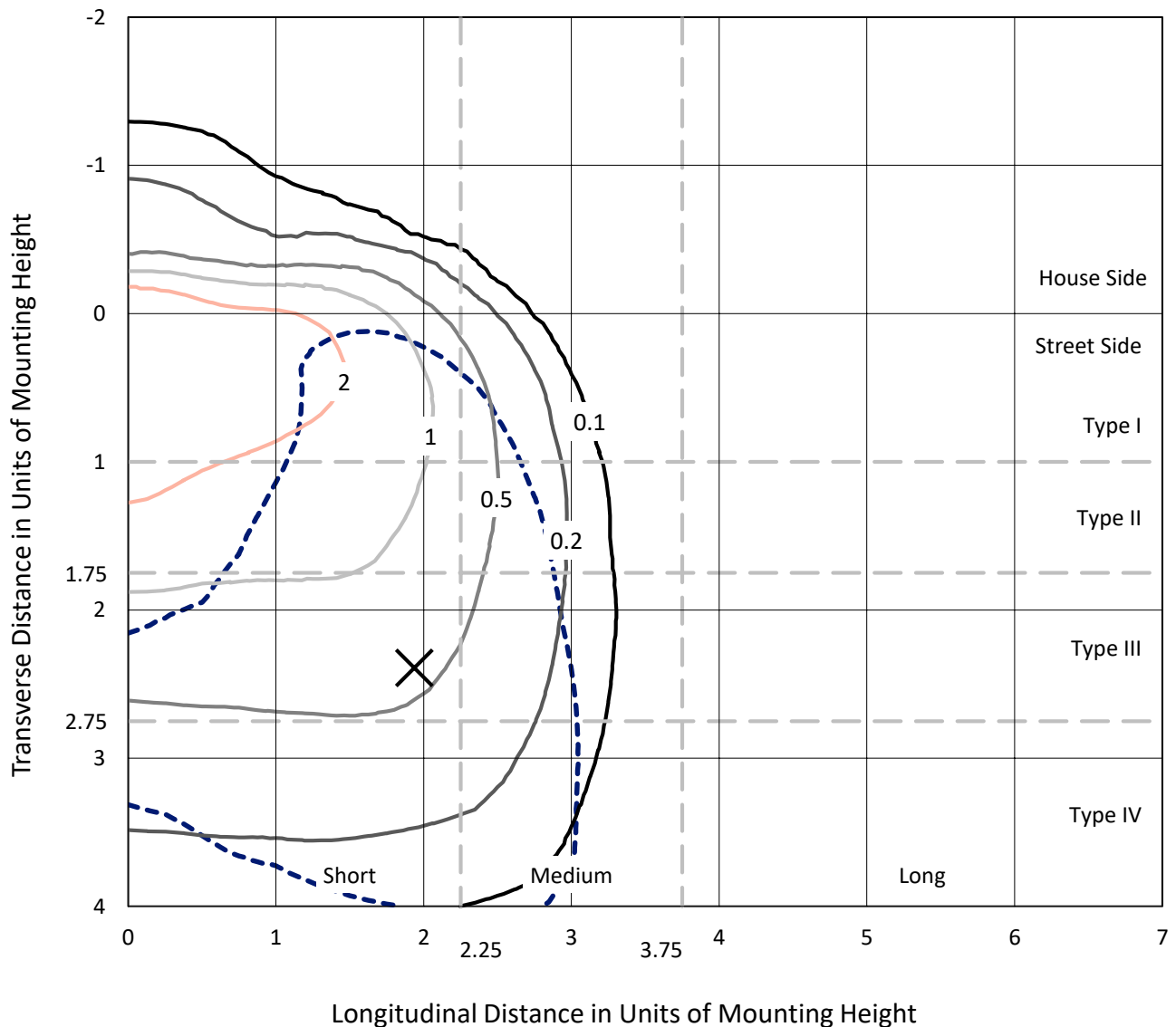
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

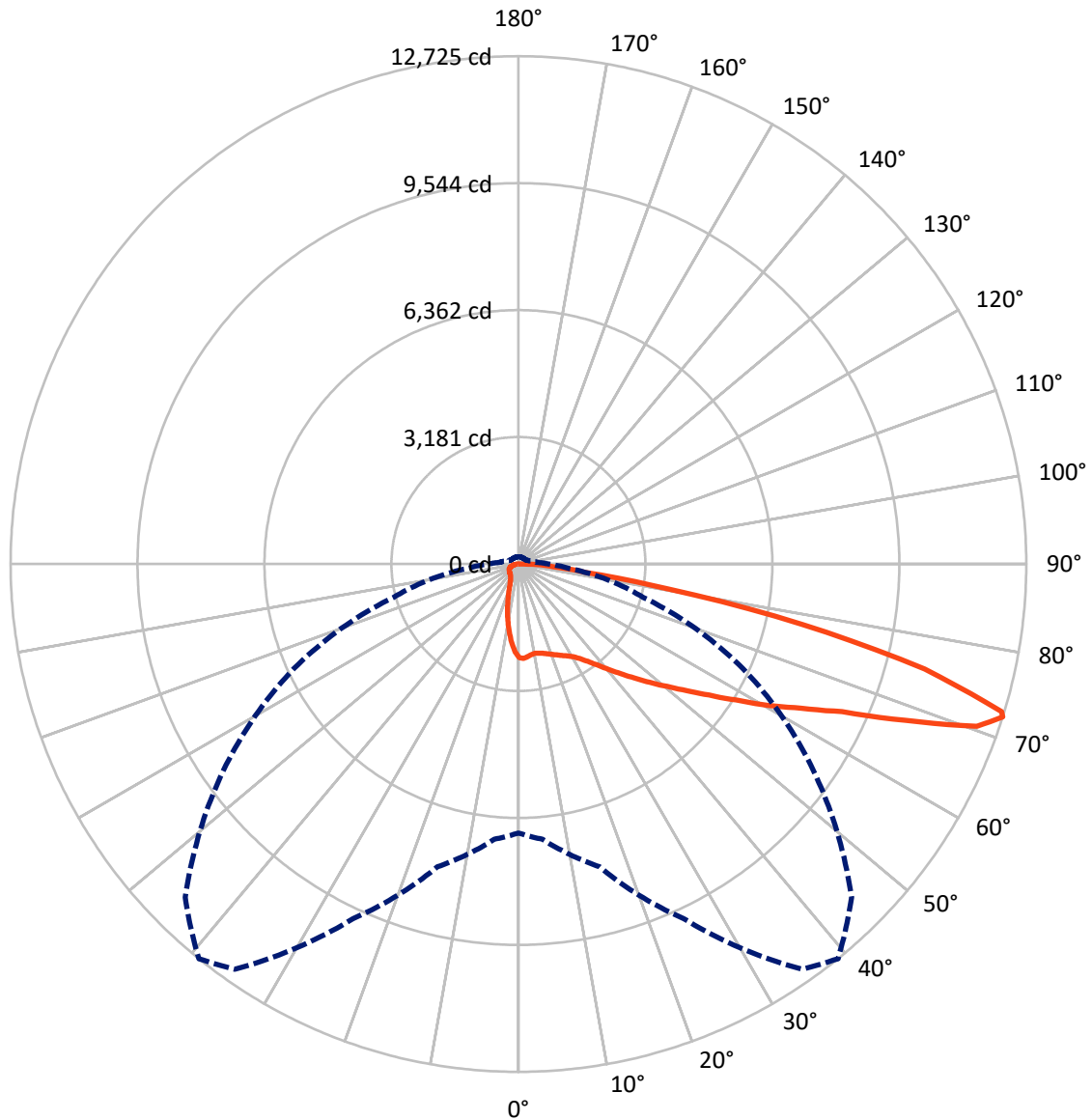
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.7 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	1759.4	0.0	1759.4
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	13584.6	0.0	13584.6
	% Fixture	88.5	0.0	88.5
Total	Lumens	15344.0	0.0	15344.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	201.4	1.3
10°-20°	506.0	3.3
20°-30°	788.6	5.1
30°-40°	1214.1	7.9
40°-50°	1979.3	12.9
50°-60°	3075.6	20.0
60°-70°	4116.6	26.8
70°-80°	2960.5	19.3
80°-90°	501.9	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°	15344.0	100.0
0°-180°	15344.0	100.0

Coefficient of Utilization



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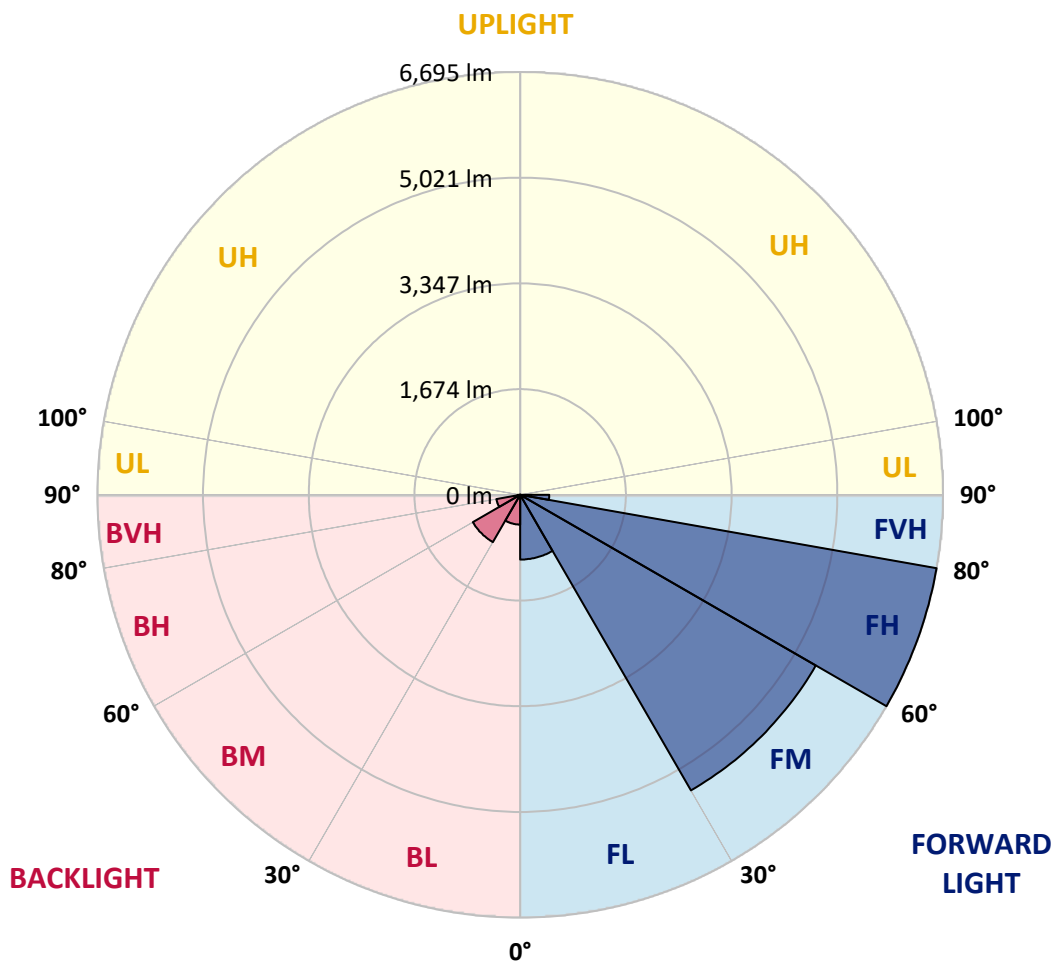
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1024.9	6.7			
FM	(30°-60°)	5404.5	35.2			
FH	(60°-80°)	6694.8	43.6			G3/7500
FVH	(80°-90°)	460.4	3.0			G3/500
BL	(0°-30°)	471.0	3.1	B1/500		
BM	(30°-60°)	864.6	5.6	B1/1000		
BH	(60°-80°)	382.3	2.5	B1/500		G1/500
BVH	(80°-90°)	41.5	0.3			G1/100
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°	2343.3	2343.3	2343.3	2343.3	2343.3	2343.3	2343.3	2343.3	2343.3	2343.3	2343.3
2.5°	2393.8	2394.8	2391.7	2382.4	2374.2	2370.1	2362.9	2350.5	2334.0	2322.7	2313.4
5°	2371.1	2374.2	2372.1	2356.7	2342.3	2334.0	2322.7	2305.2	2283.6	2274.3	2252.7
7.5°	2353.6	2355.7	2349.5	2332.0	2304.2	2293.9	2273.3	2250.6	2231.0	2217.6	2191.9
10°	2341.2	2343.3	2338.2	2320.6	2289.7	2277.4	2252.7	2227.9	2202.2	2185.7	2156.9
12.5°	2323.7	2327.9	2327.9	2319.6	2299.0	2290.8	2266.1	2239.3	2215.6	2198.1	2162.0
15°	2320.6	2325.8	2335.1	2334.0	2327.9	2321.7	2302.1	2275.3	2254.7	2234.1	2189.8
17.5°	2346.4	2357.7	2376.3	2382.4	2378.3	2364.9	2342.3	2317.6	2294.9	2275.3	2220.7
20°	2411.3	2417.5	2445.3	2457.6	2437.0	2417.5	2387.6	2355.7	2335.1	2319.6	2249.6
22.5°	2509.1	2517.4	2540.0	2541.1	2497.8	2474.1	2436.0	2396.9	2377.3	2371.1	2288.7
25°	2665.7	2663.6	2669.8	2644.1	2565.8	2538.0	2491.6	2446.3	2432.9	2445.3	2346.4
27.5°	2853.2	2848.0	2828.4	2761.5	2643.0	2607.0	2551.4	2511.2	2511.2	2540.0	2424.7
30°	3069.5	3064.3	3000.5	2888.2	2734.7	2693.5	2634.8	2592.6	2614.2	2669.8	2530.8
32.5°	3298.1	3279.6	3190.0	3039.6	2865.5	2820.2	2763.6	2720.3	2761.5	2856.3	2683.2
35°	3513.4	3503.1	3392.9	3214.7	3034.5	2996.3	2957.2	2903.6	2969.6	3116.9	2898.5
37.5°	3735.9	3727.7	3592.7	3403.2	3240.5	3214.7	3181.7	3144.7	3250.8	3444.4	3190.0
40°	3984.1	3967.7	3797.7	3608.2	3480.5	3468.1	3450.6	3440.3	3611.3	3899.7	3558.7
42.5°	4265.3	4233.4	4014.0	3833.7	3742.1	3752.4	3743.1	3784.3	4045.9	4425.0	3997.5
45°	4586.7	4522.8	4229.3	4073.7	4031.5	4072.7	4092.3	4197.3	4559.9	5031.7	4487.8
47.5°	4887.5	4805.1	4465.2	4334.3	4358.0	4429.1	4484.7	4670.1	5123.3	5631.1	4988.4
50°	5164.5	5071.8	4717.5	4604.2	4719.6	4820.5	4935.9	5197.5	5722.8	6248.1	5447.8
52.5°	5369.5	5302.6	4969.9	4898.8	5134.7	5268.6	5452.9	5783.6	6328.5	6836.3	5857.7
55°	5528.1	5492.1	5216.0	5236.6	5604.4	5795.9	6019.5	6399.5	6969.1	7363.6	6187.4
57.5°	5711.5	5684.7	5497.2	5644.5	6187.4	6428.4	6692.1	7114.4	7578.9	7828.2	6445.9
60°	5905.1	5905.1	5810.4	6135.9	6916.6	7192.7	7455.3	7783.9	8186.6	8246.4	6551.0
62.5°	6051.4	6089.5	6123.5	6659.1	7608.8	7951.8	8240.2	8555.4	8816.0	8452.4	6303.7
65°	6263.6	6344.9	6536.5	7263.7	8465.8	8914.9	9304.2	9568.9	9325.8	8288.6	5497.2
67.5°	6628.2	6748.7	7156.6	8164.0	9778.0	10450.6	10828.6	10371.3	9225.9	7257.5	4210.7
70°	6956.8	7126.7	7824.1	9306.3	11483.7	12182.1	12008.0	10184.9	8035.2	5320.1	2590.5
72°	6738.4	6923.8	7855.0	9803.8	12395.3	12724.9	11807.2	9026.1	6209.0	3246.6	1277.2
72.5°	6595.2	6787.9	7755.0	9791.4	12420.0	12655.9	11528.0	8565.7	5636.3	2840.8	1033.1
75°	5509.6	5674.4	6668.4	8678.0	10945.0	10512.4	8996.2	5543.6	2590.5	917.8	531.5
77.5°	3597.9	3723.5	4598.0	6012.2	7666.5	7250.3	5475.6	2595.7	971.3	557.2	399.6
80°	1807.7	1897.3	2460.7	3161.1	4137.6	3807.0	2527.7	1255.6	649.9	402.7	314.2
82.5°	1257.7	1340.1	1694.4	1614.0	1729.4	1673.8	1188.6	1047.5	486.2	254.4	164.8
85°	1054.7	1140.2	1401.9	1150.5	941.4	858.0	851.8	989.9	321.4	125.7	139.1
87.5°	919.8	1049.6	1156.7	840.5	645.8	569.6	627.3	907.5	102.0	69.0	42.2
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°	2343.3	2343.3	2343.3	2343.3	2343.3	2343.3	2343.3	2343.3	2343.3	2343.3	2343.3
2.5°	2298.0	2294.9	2279.4	2255.8	2238.2	2226.9	2205.3	2204.3	2206.3	2187.8	2195.0
5°	2233.1	2220.7	2180.6	2126.0	2081.7	2039.4	1993.1	1977.6	1964.3	1936.4	1939.5
7.5°	2165.1	2143.5	2073.4	1983.8	1898.3	1820.1	1742.8	1704.7	1675.8	1639.8	1639.8
10°	2124.9	2090.9	1983.8	1853.0	1717.0	1602.7	1487.4	1418.3	1367.9	1321.5	1318.4
12.5°	2122.9	2071.4	1922.0	1741.8	1555.3	1394.7	1237.1	1131.0	1055.8	1001.2	996.0
15°	2139.4	2067.3	1870.5	1637.7	1402.9	1193.8	999.1	864.2	768.4	707.6	701.4
17.5°	2153.8	2062.1	1814.9	1528.6	1254.6	1000.2	783.8	643.8	553.1	503.7	498.5
20°	2167.2	2050.8	1743.8	1413.2	1090.8	818.9	612.9	499.6	439.8	412.0	408.9
22.5°	2186.7	2040.5	1669.7	1283.4	930.1	666.4	505.7	424.4	392.4	379.0	377.0
25°	2218.7	2041.5	1597.6	1150.5	782.8	555.2	437.8	387.3	369.8	360.5	360.5
27.5°	2265.0	2053.9	1526.5	1015.6	658.2	479.0	397.6	367.7	356.4	349.2	347.1
30°	2333.0	2076.5	1451.3	887.9	559.3	426.4	373.9	355.4	346.1	339.9	338.9
32.5°	2431.9	2116.7	1372.0	771.5	484.1	389.3	356.4	345.1	337.8	332.7	331.7
35°	2579.2	2187.8	1294.7	672.6	430.5	362.6	342.0	332.7	328.6	326.5	325.5
37.5°	2795.5	2302.1	1221.6	595.4	395.5	345.1	327.5	322.4	320.3	320.3	320.3
40°	3067.4	2452.5	1155.7	540.8	376.0	331.7	317.2	313.1	313.1	314.2	314.2
42.5°	3398.0	2641.0	1099.0	503.7	364.6	322.4	310.0	308.0	306.9	306.9	308.0
45°	3782.2	2863.5	1064.0	474.8	356.4	317.2	304.9	303.9	299.7	297.7	297.7
47.5°	4168.5	3101.4	1062.0	458.4	346.1	311.1	299.7	299.7	291.5	287.4	288.4
50°	4529.0	3314.6	1084.6	454.2	339.9	301.8	294.6	295.6	284.3	279.1	278.1
52.5°	4819.5	3477.4	1112.4	459.4	339.9	293.6	285.3	290.5	278.1	271.9	270.9
55°	5044.0	3590.7	1122.7	470.7	344.0	286.3	277.1	285.3	276.0	267.8	267.8
57.5°	5204.7	3626.7	1078.4	475.9	350.2	285.3	268.8	284.3	279.1	268.8	268.8
60°	5146.0	3417.6	913.6	456.3	349.2	283.3	262.7	286.3	289.4	278.1	278.1
62.5°	4687.6	2859.3	733.4	412.0	331.7	276.0	255.4	284.3	296.6	292.5	290.5
65°	3816.2	2097.1	568.6	359.5	301.8	260.6	240.0	265.7	280.2	284.3	285.3
67.5°	2689.4	1327.7	441.9	305.9	264.7	237.9	222.5	234.8	240.0	242.1	246.2
70°	1470.9	719.0	351.2	257.5	226.6	215.3	203.9	205.0	202.9	200.9	202.9
72°	738.5	469.7	296.6	223.5	200.9	193.6	188.5	185.4	185.4	182.3	183.3
72.5°	635.5	436.7	286.3	215.3	194.7	188.5	184.4	181.3	180.3	178.2	179.2
75°	423.3	346.1	239.0	180.3	165.8	161.7	163.8	160.7	161.7	159.7	160.7
77.5°	342.0	297.7	202.9	152.4	142.1	136.0	140.1	141.1	143.2	141.1	140.1
80°	286.3	253.4	170.0	125.7	118.5	113.3	115.4	122.6	123.6	117.4	116.4
82.5°	185.4	203.9	133.9	97.9	90.6	88.6	93.7	100.9	103.0	94.8	92.7
85°	155.5	163.8	96.8	67.0	59.7	57.7	68.0	75.2	80.3	72.1	70.0
87.5°	43.3	80.3	47.4	31.9	26.8	26.8	33.0	39.1	46.4	47.4	47.4
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)