

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: P195712

Luminaire Tested: **NAV-AF-04-D-UNV-SL4-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195712
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-SL4-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 5000K, 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: 23274 lumens
Efficiency: N/A
Efficacy: 103.4 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G4

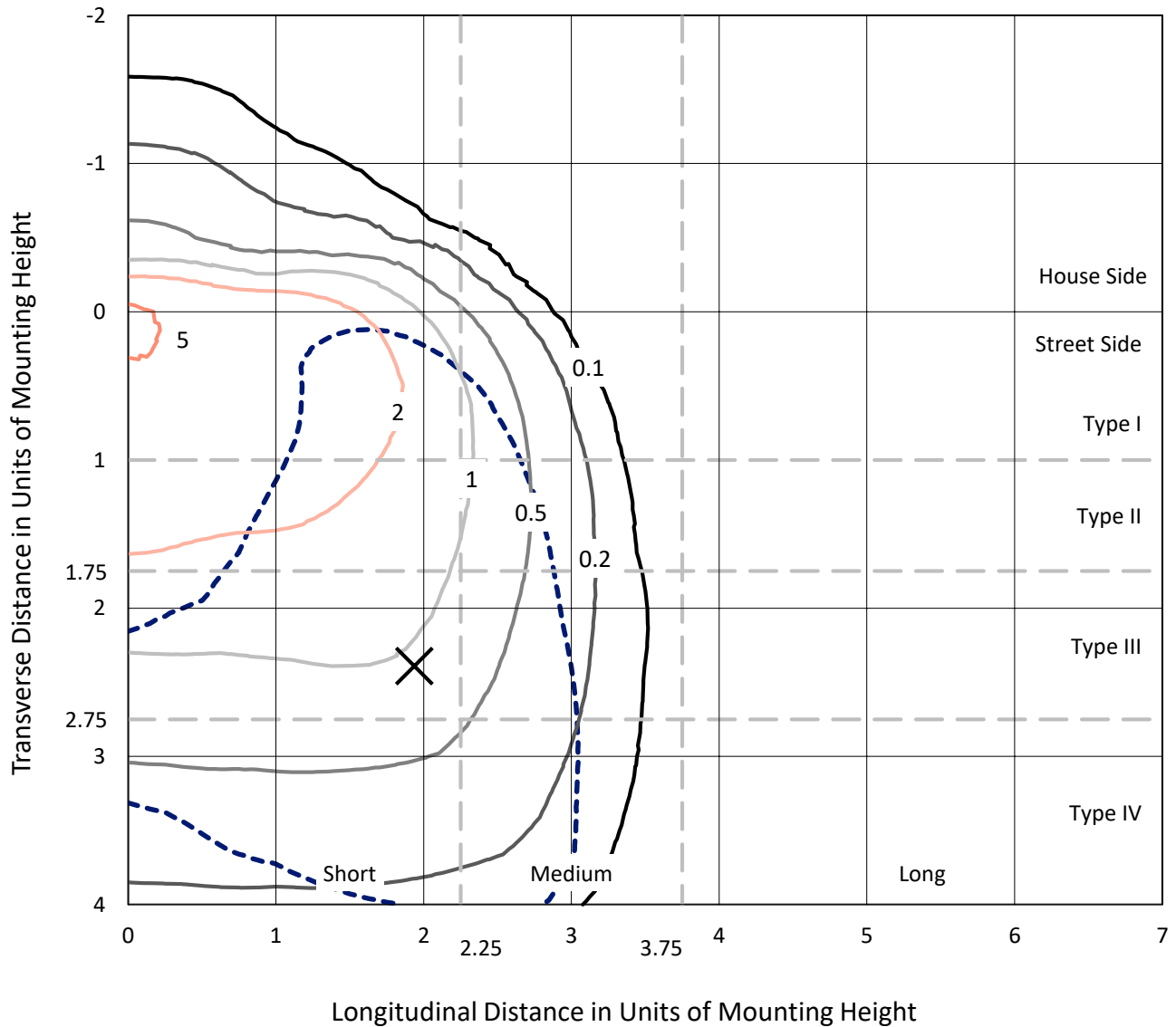
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

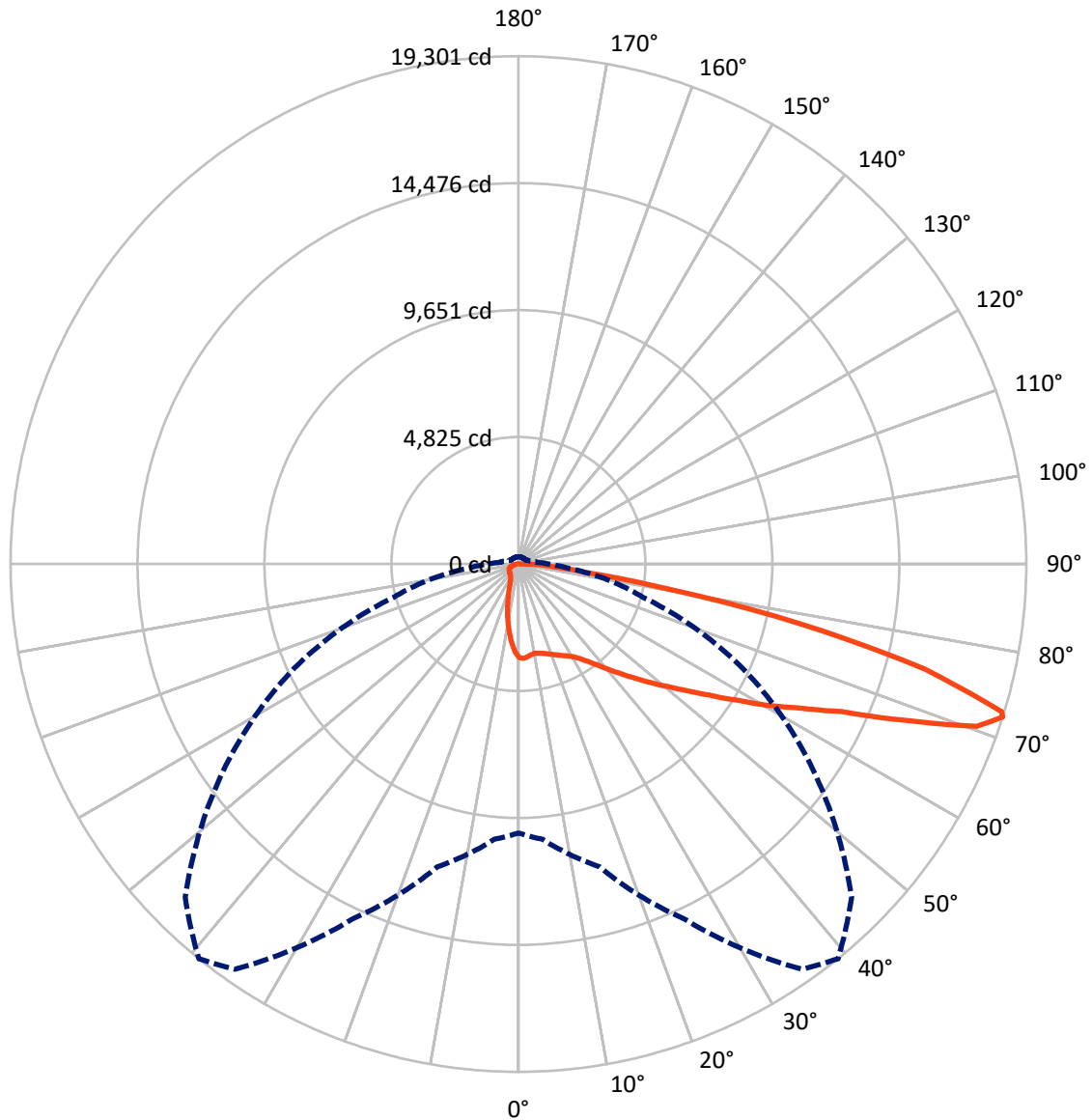
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.7 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	2668.7	0.0	2668.7
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	20605.3	0.0	20605.3
	% Fixture	88.5	0.0	88.5
Total	Lumens	23274.0	0.0	23274.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	305.4	1.3
10°-20°	767.5	3.3
20°-30°	1196.1	5.1
30°-40°	1841.6	7.9
40°-50°	3002.3	12.9
50°-60°	4665.2	20.0
60°-70°	6244.2	26.8
70°-80°	4490.5	19.3
80°-90°	761.2	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°	23274.0	100.0
0°-180°	23274.0	100.0



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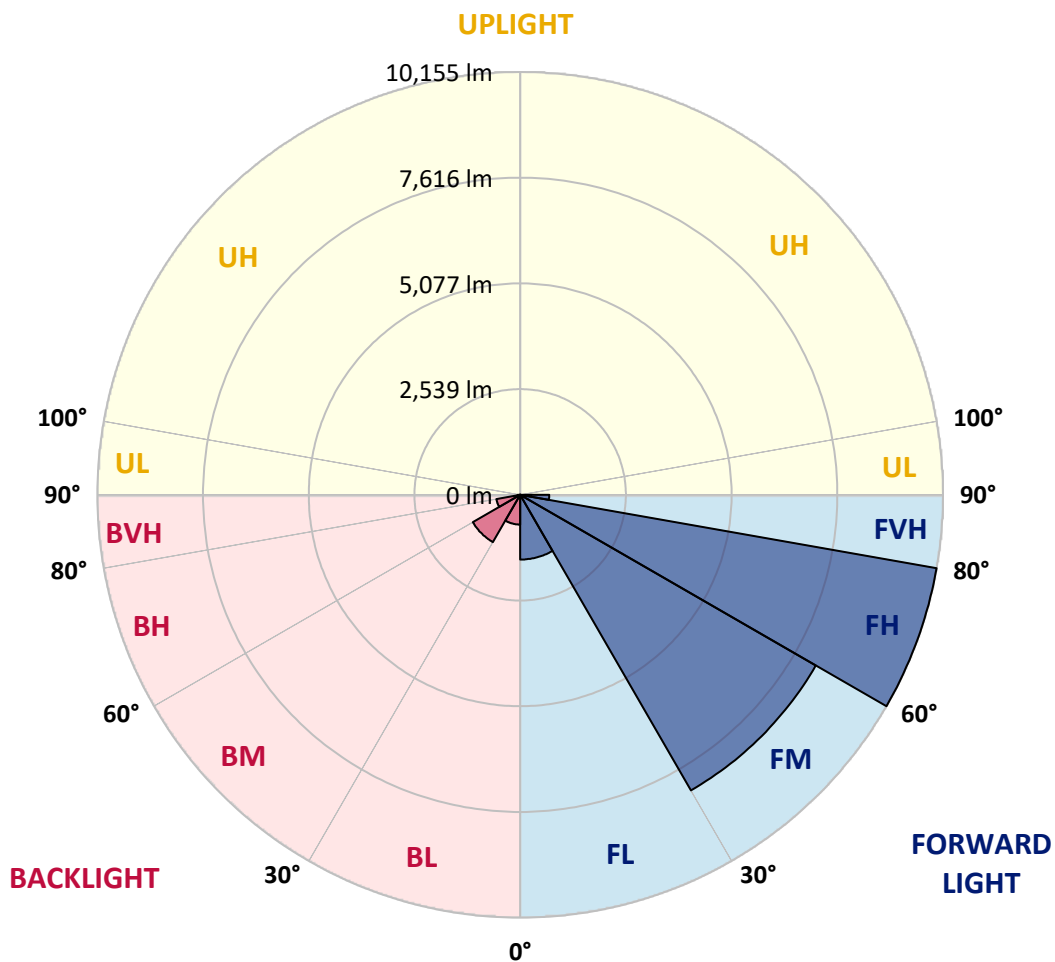
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1554.7	6.7			
FM	(30°-60°)	8197.6	35.2			
FH	(60°-80°)	10154.8	43.6			G4/12000
FVH	(80°-90°)	698.3	3.0			G4/750
BL	(0°-30°)	714.4	3.1	B2/1000		
BM	(30°-60°)	1311.5	5.6	B2/2500		
BH	(60°-80°)	579.8	2.5	B2/1000		G2/1000
BVH	(80°-90°)	62.9	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°	3554.4	3554.4	3554.4	3554.4	3554.4	3554.4	3554.4	3554.4	3554.4	3554.4	3554.4
2.5°	3630.9	3632.5	3627.8	3613.7	3601.2	3595.0	3584.0	3565.3	3540.3	3523.1	3509.0
5°	3596.5	3601.2	3598.1	3574.7	3552.8	3540.3	3523.1	3496.6	3463.7	3449.7	3416.9
7.5°	3570.0	3573.1	3563.7	3537.2	3495.0	3479.4	3448.1	3413.7	3384.1	3363.8	3324.7
10°	3551.2	3554.4	3546.5	3520.0	3473.1	3454.4	3416.9	3379.4	3340.3	3315.3	3271.6
12.5°	3524.7	3530.9	3530.9	3518.4	3487.2	3474.7	3437.2	3396.6	3360.6	3334.1	3279.4
15°	3520.0	3527.8	3541.9	3540.3	3530.9	3521.5	3491.9	3451.2	3420.0	3388.7	3321.6
17.5°	3559.0	3576.2	3604.4	3613.7	3607.5	3587.2	3552.8	3515.3	3480.9	3451.2	3368.4
20°	3657.5	3666.8	3709.0	3727.8	3696.5	3666.8	3621.5	3573.1	3541.9	3518.4	3412.2
22.5°	3805.9	3818.4	3852.8	3854.3	3788.7	3752.8	3695.0	3635.6	3605.9	3596.5	3471.6
25°	4043.4	4040.3	4049.6	4010.6	3891.8	3849.6	3779.3	3710.6	3690.3	3709.0	3559.0
27.5°	4327.7	4319.9	4290.2	4188.7	4009.0	3954.3	3870.0	3809.0	3809.0	3852.8	3677.8
30°	4655.8	4648.0	4551.1	4380.8	4148.1	4085.6	3996.5	3932.4	3965.3	4049.6	3838.7
32.5°	5002.7	4974.5	4838.6	4610.5	4346.5	4277.7	4191.8	4126.2	4188.7	4332.4	4069.9
35°	5329.2	5313.6	5146.4	4876.1	4602.7	4544.9	4485.5	4404.3	4504.3	4727.7	4396.5
37.5°	5666.7	5654.2	5449.5	5162.0	4915.2	4876.1	4826.1	4769.9	4930.8	5224.5	4838.6
40°	6043.2	6018.2	5760.4	5472.9	5279.2	5260.4	5233.9	5218.3	5477.6	5915.1	5397.9
42.5°	6469.7	6421.3	6088.5	5815.1	5676.0	5691.7	5677.6	5740.1	6136.9	6711.9	6063.5
45°	6957.2	6860.3	6415.0	6179.1	6115.1	6177.6	6207.2	6366.6	6916.5	7632.1	6807.2
47.5°	7413.4	7288.4	6772.8	6574.4	6610.3	6718.1	6802.5	7083.7	7771.2	8541.4	7566.5
50°	7833.6	7693.0	7155.6	6983.7	7158.7	7311.8	7486.8	7883.6	8680.4	9477.2	8263.3
52.5°	8144.6	8043.0	7538.4	7430.6	7788.3	7991.4	8271.1	8772.6	9599.1	10369.4	8885.1
55°	8385.2	8330.5	7911.8	7943.0	8500.8	8791.4	9130.4	9706.9	10570.9	11169.3	9385.1
57.5°	8663.3	8622.6	8338.3	8561.7	9385.1	9750.7	10150.6	10791.2	11495.8	11873.9	9777.2
60°	8957.0	8957.0	8813.2	9306.9	10491.2	10909.9	11308.3	11806.7	12417.6	12508.2	9936.6
62.5°	9178.8	9236.6	9288.2	10100.6	11541.1	12061.4	12498.8	12976.9	13372.2	12820.7	9561.6
65°	9500.7	9624.1	9914.7	11017.7	12841.0	13522.2	14112.8	14514.3	14145.6	12572.3	8338.3
67.5°	10053.8	10236.6	10855.2	12383.2	14831.4	15851.7	16425.0	15731.4	13994.0	11008.4	6386.9
70°	10552.1	10809.9	11867.6	14115.9	17418.7	18478.0	18213.9	15448.6	12187.9	8069.6	3929.3
72°	10220.9	10502.2	11914.5	14870.5	18801.4	19301.3	17909.3	13690.9	9417.9	4924.5	1937.3
72.5°	10003.8	10295.9	11763.0	14851.7	18838.9	19196.7	17485.9	12992.5	8549.2	4309.0	1567.0
75°	8357.0	8607.0	10114.7	13162.8	16601.6	15945.4	13645.6	8408.6	3929.3	1392.1	806.2
77.5°	5457.3	5647.9	6974.4	9119.5	11628.6	10997.4	8305.5	3937.1	1473.3	845.2	606.2
80°	2741.9	2877.9	3732.5	4794.9	6276.0	5774.5	3834.0	1904.5	985.8	610.9	476.5
82.5°	1907.6	2032.6	2570.1	2448.2	2623.2	2538.8	1803.0	1588.9	737.4	385.9	250.0
85°	1599.9	1729.5	2126.4	1745.2	1428.0	1301.4	1292.1	1501.4	487.5	190.6	210.9
87.5°	1395.2	1592.0	1754.5	1274.9	979.6	864.0	951.5	1376.4	154.7	104.7	64.1
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°	3554.4	3554.4	3554.4	3554.4	3554.4	3554.4	3554.4	3554.4	3554.4	3554.4	3554.4
2.5°	3485.6	3480.9	3457.5	3421.6	3395.0	3377.8	3345.0	3343.4	3346.6	3318.4	3329.4
5°	3387.2	3368.4	3307.5	3224.7	3157.5	3093.5	3023.2	2999.7	2979.4	2937.2	2941.9
7.5°	3284.1	3251.3	3145.0	3009.1	2879.4	2760.7	2643.5	2585.7	2542.0	2487.3	2487.3
10°	3223.1	3171.6	3009.1	2810.7	2604.4	2431.0	2256.0	2151.4	2074.8	2004.5	1999.8
12.5°	3220.0	3141.9	2915.4	2641.9	2359.2	2115.4	1876.4	1715.5	1601.4	1518.6	1510.8
15°	3245.0	3135.6	2837.2	2484.1	2127.9	1810.8	1515.5	1310.8	1165.5	1073.3	1064.0
17.5°	3266.9	3127.8	2752.9	2318.5	1902.9	1517.0	1189.0	976.5	839.0	764.0	756.2
20°	3287.2	3110.6	2645.1	2143.6	1654.5	1242.1	929.6	757.7	667.1	624.9	620.3
22.5°	3316.9	3095.0	2532.6	1946.7	1410.8	1010.8	767.1	643.7	595.3	574.9	571.8
25°	3365.3	3096.6	2423.2	1745.2	1187.4	842.1	664.0	587.4	560.9	546.8	546.8
27.5°	3435.6	3115.3	2315.4	1540.5	998.3	726.5	603.1	557.8	540.6	529.6	526.5
30°	3538.7	3149.7	2201.4	1346.8	848.4	646.8	567.1	539.0	525.0	515.6	514.0
32.5°	3688.7	3210.6	2081.1	1170.2	734.3	590.6	540.6	523.4	512.5	504.6	503.1
35°	3912.1	3318.4	1963.9	1020.2	653.1	549.9	518.7	504.6	498.4	495.3	493.7
37.5°	4240.2	3491.9	1853.0	903.0	599.9	523.4	496.8	489.0	485.9	485.9	485.9
40°	4652.7	3720.0	1753.0	820.2	570.3	503.1	481.2	475.0	475.0	476.5	476.5
42.5°	5154.2	4005.9	1667.0	764.0	553.1	489.0	470.3	467.1	465.6	465.6	467.1
45°	5737.0	4343.3	1613.9	720.2	540.6	481.2	462.5	460.9	454.6	451.5	451.5
47.5°	6322.9	4704.3	1610.8	695.2	525.0	471.8	454.6	454.6	442.1	435.9	437.5
50°	6869.7	5027.7	1645.2	689.0	515.6	457.8	446.8	448.4	431.2	423.4	421.8
52.5°	7310.3	5274.5	1687.3	696.8	515.6	445.3	432.8	440.6	421.8	412.5	410.9
55°	7650.9	5446.4	1703.0	714.0	521.8	434.3	420.3	432.8	418.7	406.2	406.2
57.5°	7894.6	5501.1	1635.8	721.8	531.2	432.8	407.8	431.2	423.4	407.8	407.8
60°	7805.5	5183.9	1385.8	692.1	529.6	429.6	398.4	434.3	439.0	421.8	421.8
62.5°	7110.3	4337.1	1112.4	624.9	503.1	418.7	387.5	431.2	450.0	443.7	440.6
65°	5788.5	3181.0	862.4	545.3	457.8	395.3	364.0	403.1	425.0	431.2	432.8
67.5°	4079.3	2013.9	670.3	464.0	401.5	360.9	337.5	356.2	364.0	367.2	373.4
70°	2231.0	1090.5	532.8	390.6	343.7	326.5	309.3	310.9	307.8	304.7	307.8
72°	1120.2	712.4	450.0	339.0	304.7	293.7	285.9	281.2	281.2	276.5	278.1
72.5°	964.0	662.4	434.3	326.5	295.3	285.9	279.7	275.0	273.4	270.3	271.8
75°	642.1	525.0	362.5	273.4	251.5	245.3	248.4	243.7	245.3	242.2	243.7
77.5°	518.7	451.5	307.8	231.2	215.6	206.2	212.5	214.0	217.2	214.0	212.5
80°	434.3	384.3	257.8	190.6	179.7	171.9	175.0	185.9	187.5	178.1	176.5
82.5°	281.2	309.3	203.1	148.4	137.5	134.4	142.2	153.1	156.2	143.7	140.6
85°	235.9	248.4	146.9	101.6	90.6	87.5	103.1	114.1	121.9	109.4	106.2
87.5°	65.6	121.9	71.9	48.4	40.6	40.6	50.0	59.4	70.3	71.9	71.9
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)