

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: P196095

Luminaire Tested: **NAV-AF-03-D-UNV-SL2**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196095  
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-03-D-UNV-SL2  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 70 CRI, 4000K, 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: 18165.6 lumens  
Efficiency: N/A  
Efficacy: 109.4 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')  
IES Classification: Type II - Medium - Semi-Cutoff  
BUG Rating: B3 - U0 - G3

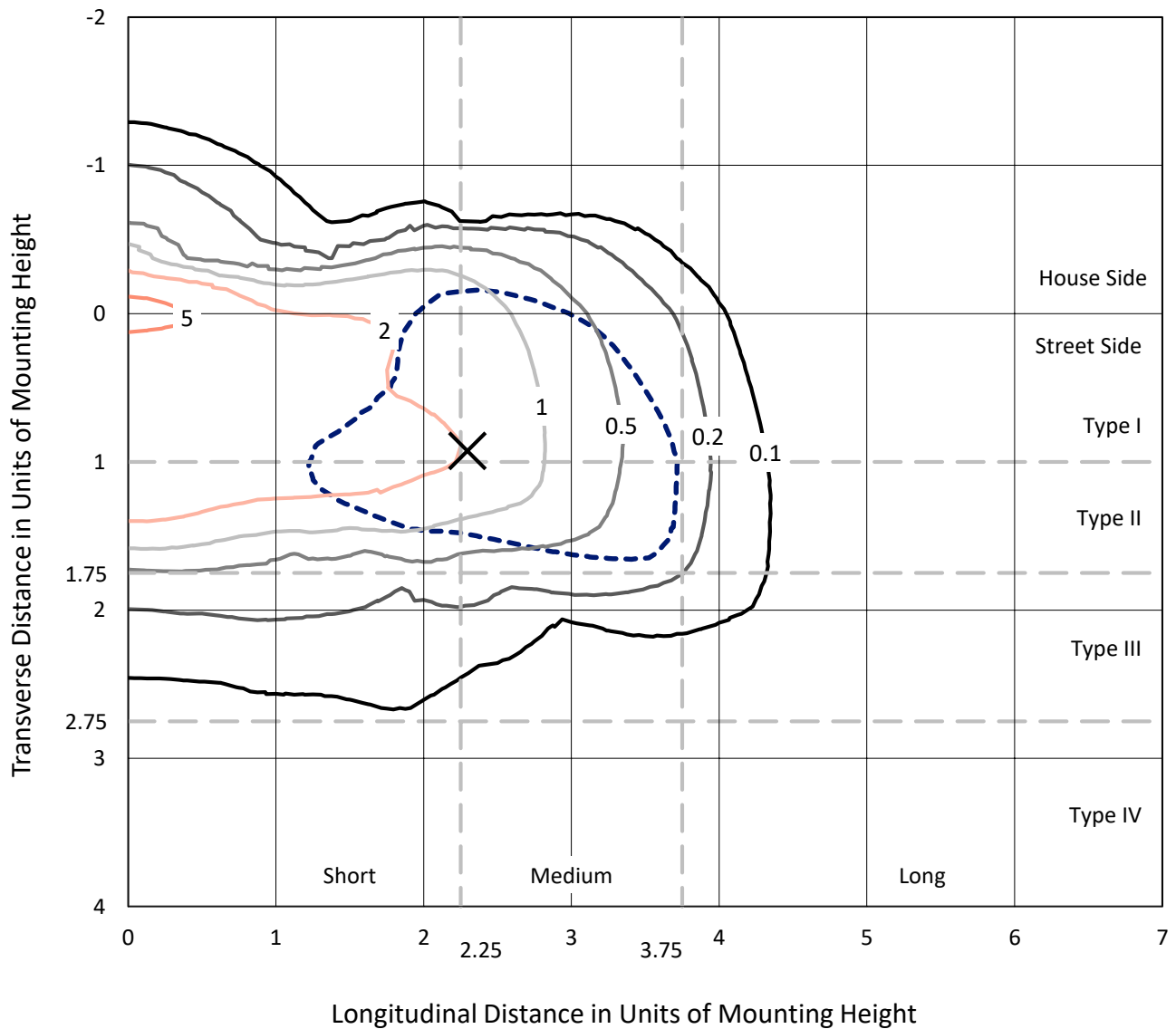
Input Watts (W): 166  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

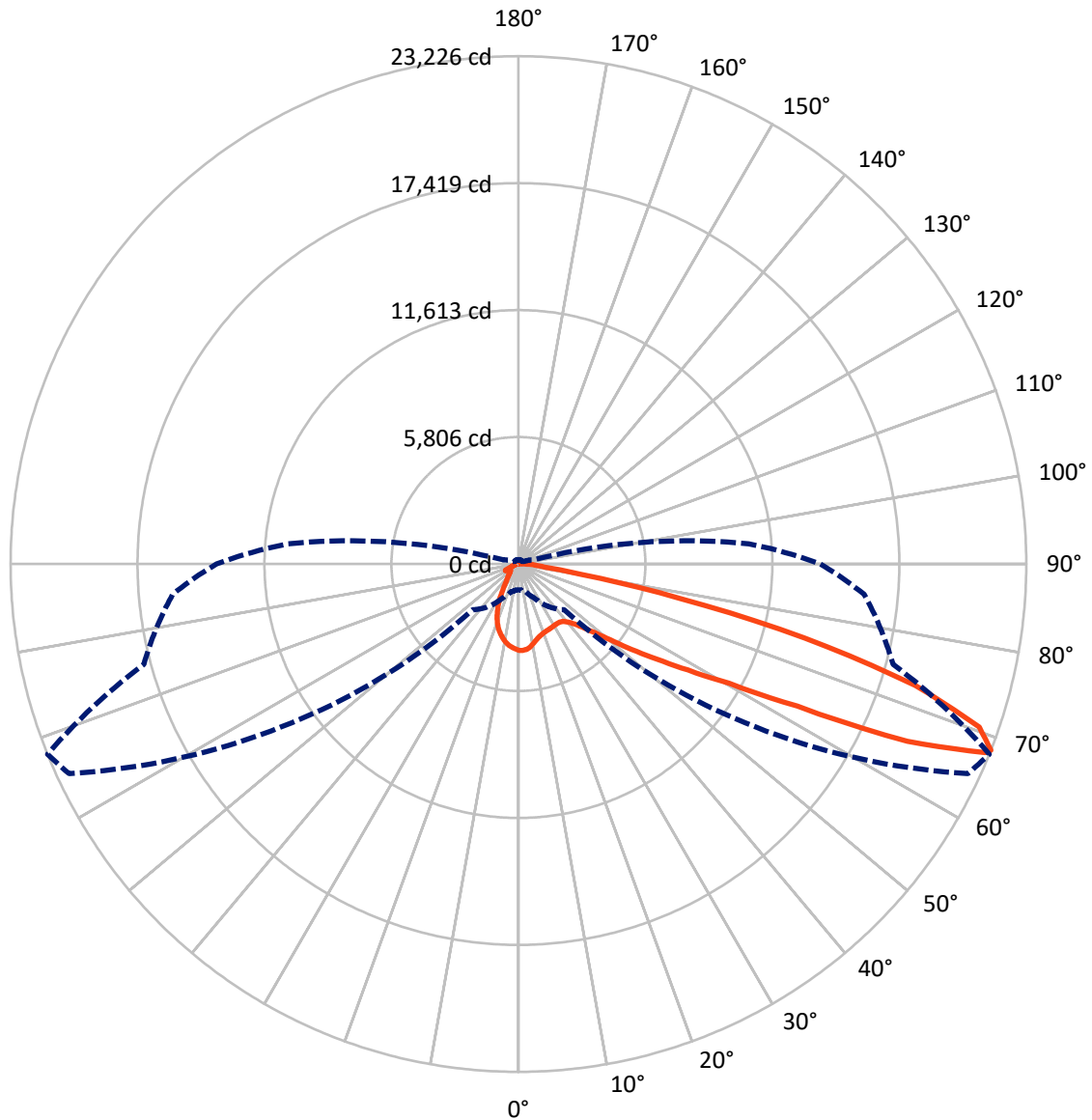
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.3 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
<b>House Side</b>	Lumens	2971.9	0.0	2971.9
	% Fixture	16.4	0.0	16.4
<b>Street Side</b>	Lumens	15193.6	0.0	15193.6
	% Fixture	83.6	0.0	83.6
<b>Total</b>	Lumens	18165.6	0.0	18165.6
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	338.7	1.9
10°-20°	785.5	4.3
20°-30°	1062.4	5.8
30°-40°	1497.9	8.2
40°-50°	2463.1	13.6
50°-60°	3818.1	21.0
60°-70°	4950.4	27.3
70°-80°	2840.8	15.6
80°-90°	408.7	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°	18165.6	100.0
0°-180°	18165.6	100.0



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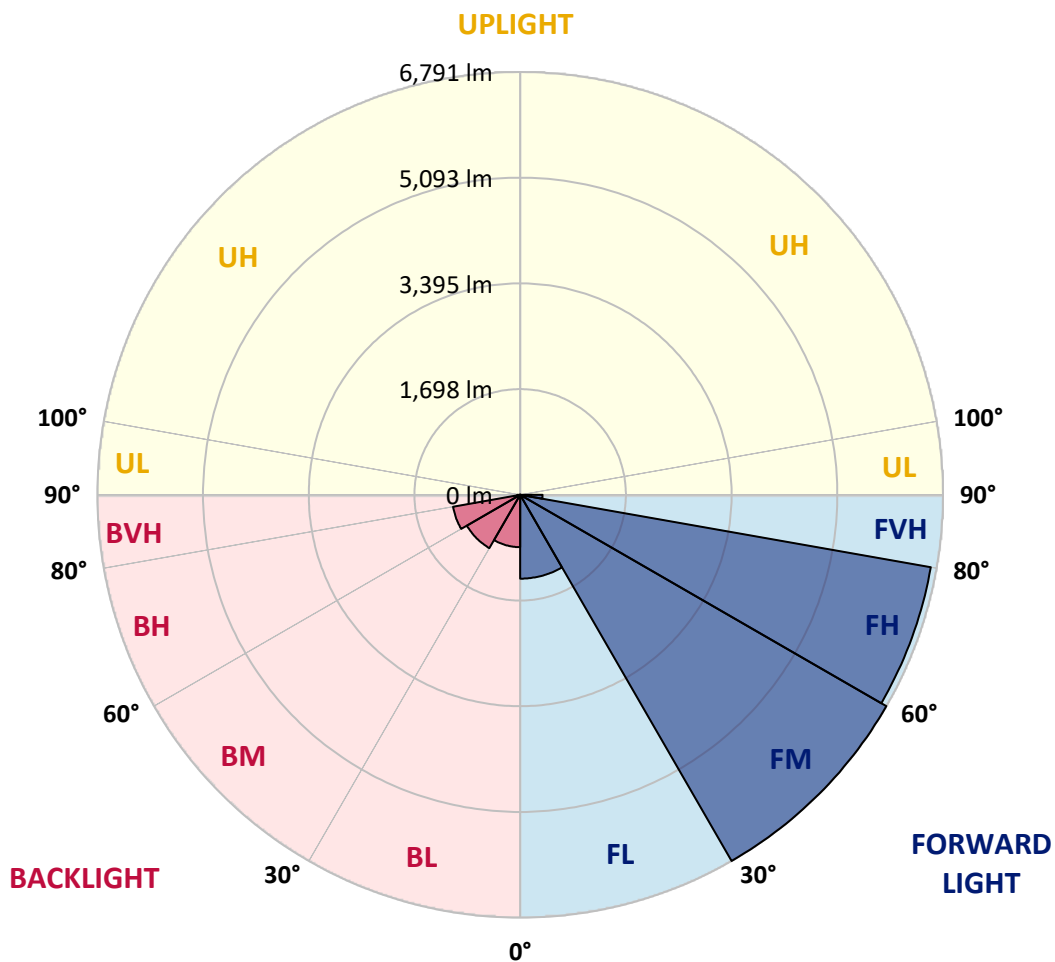
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1346.4	7.4			
FM	(30°-60°)	6790.6	37.4			
FH	(60°-80°)	6696.7	36.9			G3/7500
FVH	(80°-90°)	360.0	2.0			G3/500
BL	(0°-30°)	840.2	4.6	B2/1000		
BM	(30°-60°)	988.5	5.4	B1/1000		
BH	(60°-80°)	1094.5	6.0	B3/2500		G3/2500
BVH	(80°-90°)	48.7	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G3**

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	3952.7	3952.7	3952.7	3952.7	3952.7	3952.7	3952.7	3952.7	3952.7	3952.7	3952.7
2.5°	3847.0	3877.9	3877.9	3900.4	3920.7	3937.2	3951.5	3951.5	3951.5	3941.9	3933.7
5°	3442.4	3484.0	3489.9	3546.9	3621.6	3713.0	3815.0	3905.2	3923.0	3956.3	3969.3
7.5°	3161.2	3174.2	3196.8	3235.9	3311.9	3424.6	3584.8	3786.6	3835.1	3939.6	3994.2
10°	2961.9	2972.5	2991.5	3030.7	3099.4	3201.5	3359.4	3621.6	3702.3	3887.4	3995.3
12.5°	2815.9	2824.2	2842.0	2877.6	2947.6	3039.0	3200.3	3473.2	3573.0	3835.1	4012.0
15°	2701.9	2716.2	2730.5	2764.8	2836.0	2923.9	3087.6	3365.3	3473.2	3793.6	4042.8
17.5°	2656.9	2664.0	2666.3	2684.1	2748.3	2837.3	3001.0	3289.3	3400.9	3760.5	4066.5
20°	2685.3	2686.6	2662.8	2651.0	2687.7	2769.6	2928.6	3232.4	3346.3	3730.8	4076.0
22.5°	2809.9	2809.9	2748.3	2696.0	2671.1	2722.2	2879.9	3193.2	3316.6	3708.2	4076.0
25°	3047.3	3036.6	2940.5	2837.3	2726.9	2705.5	2849.1	3168.3	3294.1	3696.3	4060.6
27.5°	3359.4	3349.9	3227.6	3074.6	2875.2	2741.1	2838.4	3148.1	3271.5	3678.5	4027.5
30°	3739.1	3730.8	3591.9	3391.4	3097.1	2853.8	2863.3	3133.9	3253.7	3648.9	3971.6
32.5°	4117.6	4112.9	4002.5	3797.2	3403.3	3044.9	2928.6	3131.6	3244.3	3613.3	3904.0
35°	4498.5	4498.5	4430.9	4257.6	3815.0	3332.1	3065.1	3175.4	3262.1	3594.3	3845.9
37.5°	5060.9	5038.4	4912.6	4733.5	4333.5	3704.6	3285.8	3268.0	3330.8	3626.4	3826.9
40°	5932.0	5866.7	5552.3	5250.8	4899.6	4181.7	3608.6	3447.1	3485.1	3735.5	3872.0
42.5°	6843.3	6740.0	6323.6	5841.8	5484.7	4770.2	4032.2	3737.9	3736.7	3946.7	4015.6
45°	7625.3	7571.9	7121.0	6509.9	6152.6	5432.4	4567.4	4169.9	4127.1	4274.2	4292.0
47.5°	8079.8	8044.2	7772.4	7217.1	6945.3	6214.4	5246.1	4769.1	4688.4	4776.2	4748.8
50°	7954.0	7988.4	7910.1	7626.5	7797.3	7313.2	6111.1	5590.2	5437.2	5525.0	5458.5
52.5°	7291.8	7384.4	7454.4	7509.0	8287.4	8783.5	7198.1	6615.4	6488.5	6473.0	6409.0
55°	6099.2	6246.4	6467.1	6868.2	8155.7	9964.2	9096.7	7855.4	7670.4	7573.1	7598.0
57.5°	4150.8	4373.9	4849.7	5612.7	7471.0	10467.2	11904.3	9457.5	9144.2	8797.7	8878.4
60°	2286.6	2473.0	3039.0	3807.9	5908.3	10392.5	14392.6	12060.9	11074.8	10156.4	10322.5
62.5°	1479.7	1520.1	1941.4	2601.1	3626.4	9175.1	15775.0	16412.3	14322.6	11948.2	12181.9
65°	1189.0	1217.5	1423.9	2098.0	2526.4	5902.3	15836.7	20926.2	19548.6	14383.1	14390.3
67.5°	1161.7	1174.8	1294.6	1764.5	2369.7	3213.4	13688.9	22706.1	23025.4	17257.2	15867.6
68°	1178.3	1193.8	1314.8	1710.0	2368.5	2961.9	12651.9	22678.8	23225.9	17737.8	15867.6
70°	1039.5	1058.4	1340.9	1769.3	2267.7	2546.5	8663.6	21474.4	22355.0	18842.4	15056.0
72.5°	543.5	528.0	663.3	1396.6	2552.5	2653.3	4576.8	17940.6	18968.3	17450.6	13007.8
75°	423.6	385.7	371.4	551.8	2245.1	2751.8	2658.0	12751.5	13527.6	12579.4	8694.5
77.5°	398.7	352.4	325.1	326.3	988.5	2863.3	2150.1	7504.3	7504.3	6000.8	2774.3
80°	320.4	277.6	259.8	296.7	477.0	2639.1	2243.9	3419.8	2916.7	1550.9	764.1
82.5°	211.2	188.6	189.9	240.9	361.9	1762.1	2598.7	1688.6	1268.5	687.0	449.7
85°	134.1	115.1	128.2	168.5	270.6	785.5	2572.6	1173.5	840.1	385.7	224.2
87.5°	67.6	52.2	64.0	87.8	164.9	225.5	2118.1	1047.8	623.0	160.2	122.2
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°	3952.7	3952.7	3952.7	3952.7	3952.7	3952.7	3952.7	3952.7	3952.7	3952.7	3952.7
2.5°	3933.7	3907.6	3894.5	3873.2	3847.0	3820.9	3803.1	3794.8	3790.1	3792.5	3791.3
5°	3962.2	3927.7	3872.0	3792.5	3710.5	3624.0	3557.5	3506.5	3474.5	3464.9	3462.6
7.5°	3983.5	3933.7	3829.2	3684.5	3544.4	3392.6	3263.2	3160.0	3090.0	3057.9	3056.8
10°	3980.0	3915.9	3751.0	3537.4	3332.1	3109.0	2906.1	2732.8	2607.0	2546.5	2544.2
12.5°	3983.5	3895.7	3654.8	3365.3	3071.0	2751.8	2450.4	2181.0	1993.5	1904.5	1900.9
15°	3997.8	3874.3	3556.3	3173.1	2766.1	2315.1	1884.4	1546.2	1375.3	1317.2	1317.2
17.5°	3996.6	3838.7	3442.4	2950.0	2404.1	1800.1	1286.3	1077.5	1060.8	1114.2	1122.6
20°	3972.8	3781.7	3295.2	2685.3	1979.3	1246.0	872.2	842.5	975.4	1122.6	1139.2
22.5°	3936.0	3708.2	3125.6	2378.1	1484.5	811.6	672.8	717.9	898.3	1081.1	1107.1
25°	3885.1	3619.2	2931.0	2020.8	987.2	583.8	561.3	617.0	744.0	866.2	885.3
27.5°	3810.3	3506.5	2718.6	1634.0	630.1	480.6	488.9	528.0	582.7	634.8	645.5
30°	3716.5	3374.8	2487.2	1205.6	478.2	429.5	443.8	467.5	491.2	524.5	531.6
32.5°	3621.6	3240.7	2246.3	828.3	417.7	402.2	416.5	429.5	449.7	472.3	477.0
35°	3536.1	3116.1	1998.3	577.9	391.6	384.4	391.6	399.9	420.0	442.6	445.0
37.5°	3474.5	3014.0	1739.6	456.8	376.1	369.1	372.6	376.1	399.9	433.1	436.7
40°	3466.2	2946.4	1477.3	410.6	364.3	354.8	352.4	354.8	385.7	423.6	427.2
42.5°	3546.9	2950.0	1221.0	391.6	354.8	344.1	334.6	339.4	366.6	396.3	398.7
45°	3737.9	3033.0	999.1	383.3	346.5	338.2	324.0	326.3	339.4	354.8	357.2
47.5°	4074.9	3214.6	829.4	378.5	339.4	332.3	314.5	307.3	308.5	316.8	316.8
50°	4613.6	3518.3	726.2	373.8	333.5	320.4	300.2	286.0	282.4	287.1	288.4
52.5°	5416.9	4039.3	676.4	364.3	322.7	304.9	282.4	268.2	262.3	267.0	267.0
55°	6502.7	4871.1	652.6	351.3	309.7	286.0	265.8	253.9	249.2	252.8	252.8
57.5°	7740.4	5952.1	692.9	333.5	293.1	265.8	251.5	243.3	239.7	243.3	244.5
60°	9210.6	7366.6	970.7	310.9	275.3	248.0	239.7	235.0	232.6	236.1	236.1
62.5°	11165.0	9248.6	1502.3	293.1	256.4	231.4	229.0	226.7	224.2	227.8	227.8
65°	13274.8	10960.9	1546.2	282.4	239.7	217.2	218.3	218.3	215.9	219.5	219.5
67.5°	13946.5	10812.6	863.9	269.3	219.5	203.0	207.7	207.7	206.4	210.0	208.9
68°	13804.1	10577.6	752.3	265.8	215.9	199.4	204.1	205.3	204.1	207.7	206.4
70°	12743.2	9286.6	494.8	245.6	200.5	187.5	194.6	195.8	194.6	199.4	198.1
72.5°	10519.5	6965.5	365.5	214.8	181.6	172.1	179.2	180.3	181.6	186.3	185.2
75°	6680.7	3847.0	288.4	182.7	162.5	154.3	161.4	164.9	167.4	174.4	170.8
77.5°	1829.8	1167.6	233.7	155.5	140.0	136.5	141.2	146.0	148.3	156.6	150.7
80°	640.8	516.2	194.6	131.8	116.3	115.1	119.9	124.6	126.9	134.1	126.9
82.5°	389.2	337.0	155.5	103.2	91.3	90.2	96.2	100.9	103.2	103.2	98.5
85°	203.0	178.0	114.0	72.4	62.9	59.3	70.0	75.9	77.1	75.9	72.4
87.5°	114.0	100.9	60.6	34.4	28.4	29.7	36.8	45.1	48.7	47.5	45.1
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)