

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: P196096

Luminaire Tested: **NAV-AF-04-D-UNV-SL2**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196096  
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-04-D-UNV-SL2  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 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: 24467 lumens  
Efficiency: N/A  
Efficacy: 108.7 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Medium - Semi-Cutoff  
BUG Rating: B3 - 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

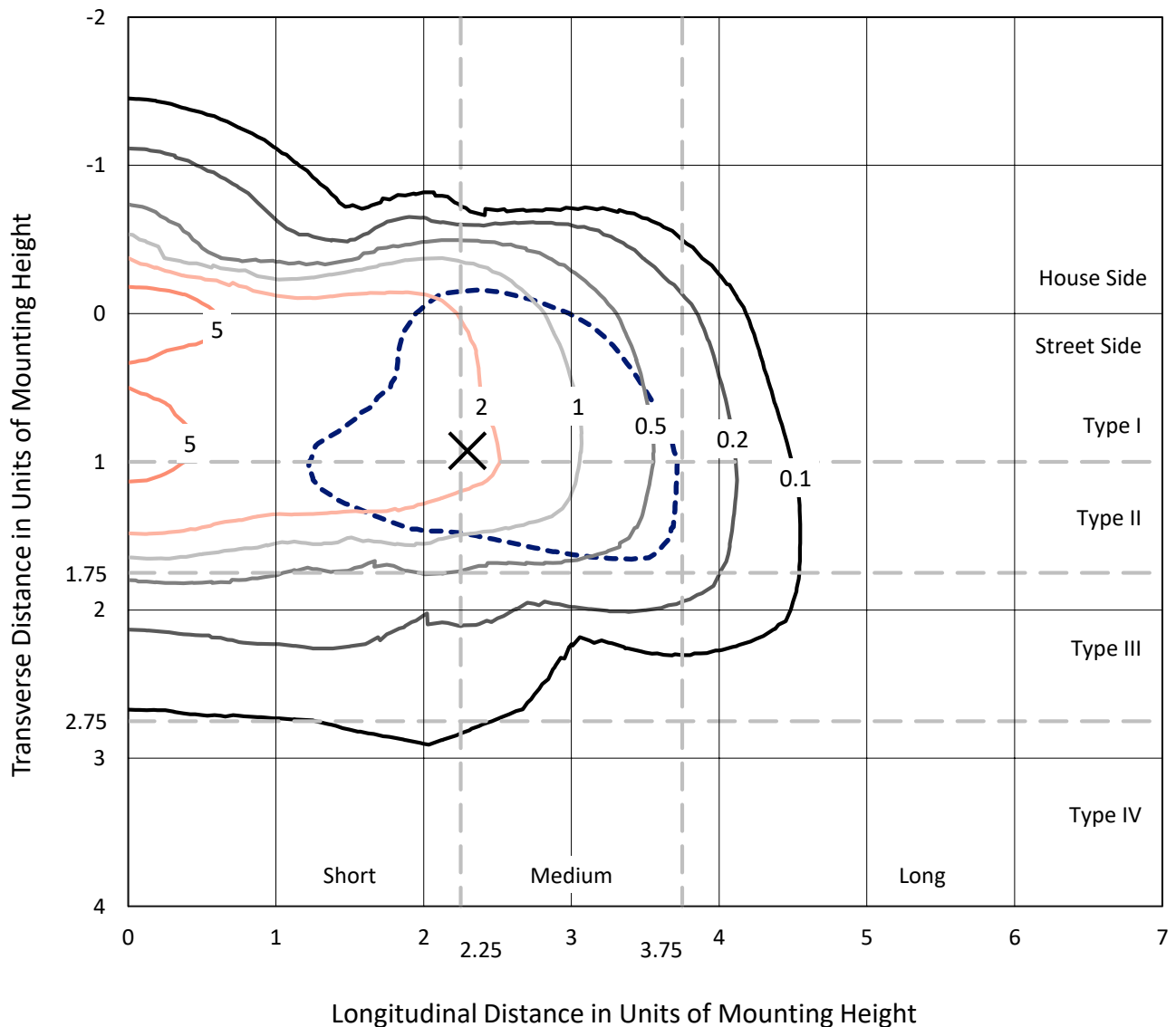


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### Iso-Footcandle Lines of Horizontal Illumination

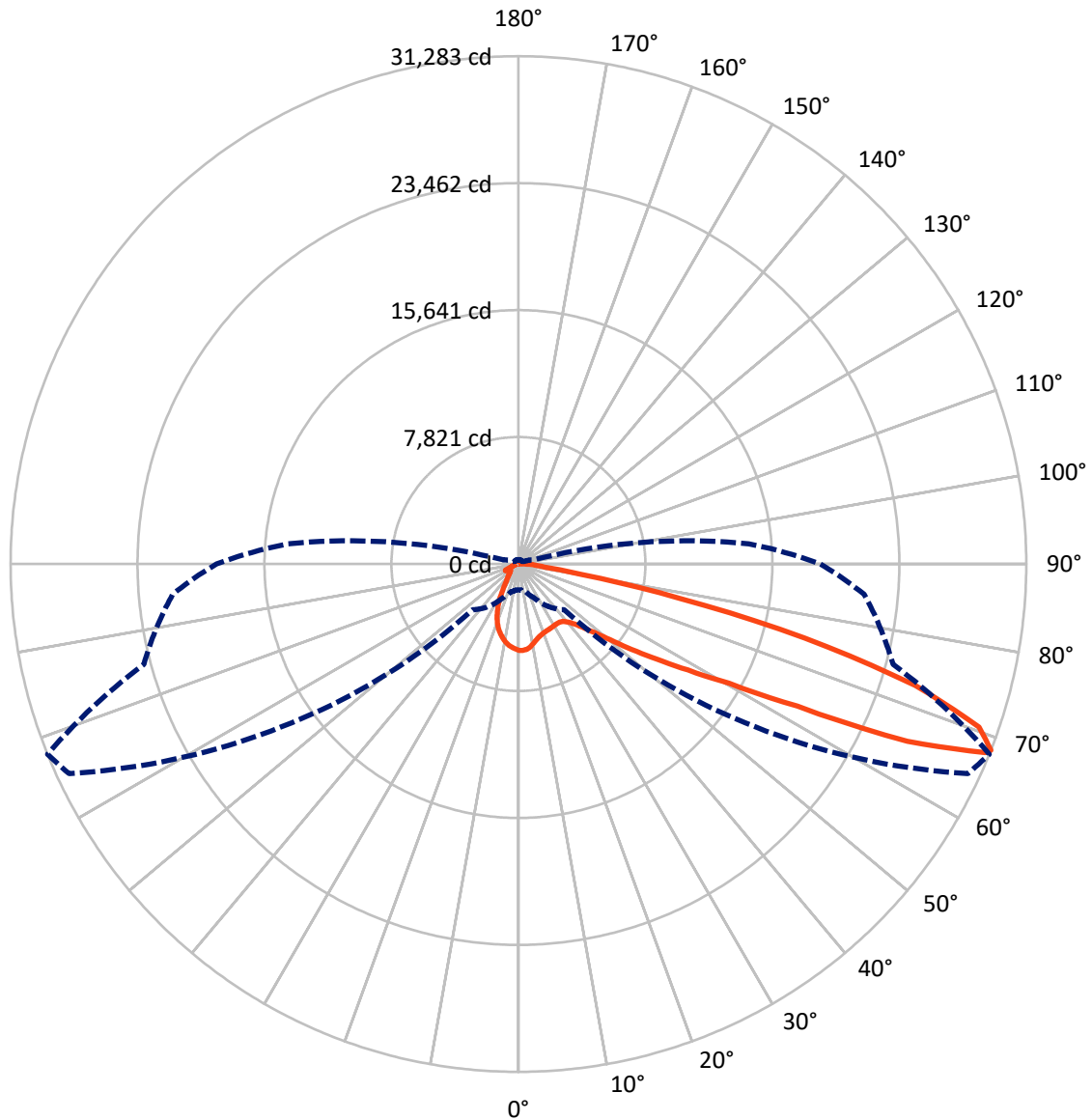
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.5 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
<b>House Side</b>	Lumens	4002.9	0.0	4002.9
	% Fixture	16.4	0.0	16.4
<b>Street Side</b>	Lumens	20464.1	0.0	20464.1
	% Fixture	83.6	0.0	83.6
<b>Total</b>	Lumens	24467.0	0.0	24467.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	456.1	1.9
10°-20°	1058.0	4.3
20°-30°	1430.9	5.8
30°-40°	2017.5	8.2
40°-50°	3317.6	13.6
50°-60°	5142.5	21.0
60°-70°	6667.6	27.3
70°-80°	3826.2	15.6
80°-90°	550.5	2.3
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°	24467.0	100.0
0°-180°	24467.0	100.0

**Coefficient of Utilization**



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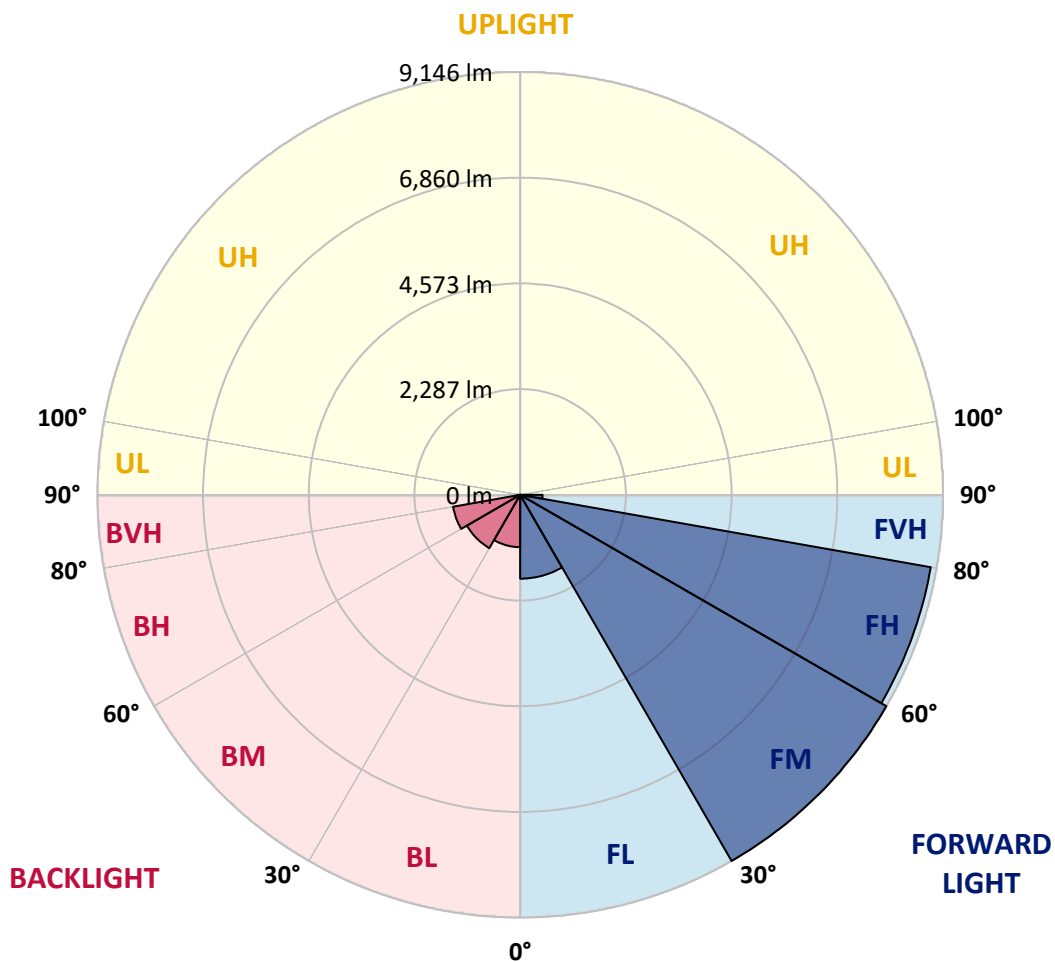
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1813.4	7.4			
FM	(30°-60°)	9146.2	37.4			
FH	(60°-80°)	9019.6	36.9			G4/12000
FVH	(80°-90°)	484.9	2.0			G3/500
BL	(0°-30°)	1131.6	4.6	B3/2500		
BM	(30°-60°)	1331.4	5.4	B2/2500		
BH	(60°-80°)	1474.2	6.0	B3/2500		G3/2500
BVH	(80°-90°)	65.6	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-G4**

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	5323.7	5323.7	5323.7	5323.7	5323.7	5323.7	5323.7	5323.7	5323.7	5323.7	5323.7
2.5°	5181.6	5223.1	5223.1	5253.5	5280.7	5303.0	5322.2	5322.2	5322.2	5309.4	5298.2
5°	4636.5	4692.5	4700.5	4777.2	4877.8	5000.9	5138.4	5259.8	5283.8	5328.6	5346.1
7.5°	4257.7	4275.3	4305.7	4358.5	4460.7	4612.6	4828.3	5100.0	5165.6	5306.3	5379.7
10°	3989.2	4003.6	4029.2	4082.0	4174.7	4312.0	4524.6	4877.8	4986.6	5235.9	5381.3
12.5°	3792.7	3803.8	3827.8	3875.8	3970.1	4093.1	4310.5	4678.1	4812.4	5165.6	5403.7
15°	3639.2	3658.4	3677.6	3724.0	3819.8	3938.1	4158.7	4532.7	4678.1	5109.6	5445.3
17.5°	3578.5	3588.1	3591.3	3615.2	3701.5	3821.4	4042.0	4430.4	4580.6	5064.8	5477.2
20°	3616.8	3618.5	3586.5	3570.5	3620.0	3730.3	3944.5	4353.7	4507.1	5024.9	5490.0
22.5°	3784.7	3784.7	3701.5	3631.3	3597.7	3666.4	3878.9	4300.9	4467.1	4994.6	5490.0
25°	4104.3	4090.0	3960.5	3821.4	3672.8	3644.1	3837.4	4267.3	4436.7	4978.6	5469.2
27.5°	4524.6	4511.8	4347.2	4141.1	3872.6	3691.9	3823.1	4240.1	4406.4	4954.6	5424.5
30°	5036.1	5024.9	4837.9	4567.8	4171.5	3843.8	3856.6	4221.0	4382.4	4914.7	5349.3
32.5°	5545.9	5539.6	5391.0	5114.4	4583.8	4101.1	3944.5	4217.8	4369.6	4866.7	5258.3
35°	6058.9	6058.9	5967.9	5734.6	5138.4	4487.9	4128.3	4277.0	4393.6	4841.1	5179.9
37.5°	6816.5	6786.2	6616.8	6375.4	5836.9	4989.7	4425.6	4401.6	4486.3	4884.3	5154.3
40°	7989.7	7901.8	7478.3	7072.3	6599.2	5632.3	4860.2	4643.0	4694.1	5031.3	5215.1
42.5°	9217.1	9078.1	8517.1	7868.2	7387.1	6424.9	5430.8	5034.5	5032.9	5315.8	5408.5
45°	10270.4	10198.5	9591.1	8768.0	8286.9	7316.9	6151.7	5616.3	5558.7	5757.0	5780.9
47.5°	10882.6	10834.6	10468.6	9720.6	9354.6	8370.1	7065.9	6423.4	6314.7	6432.9	6396.2
50°	10713.1	10759.5	10653.9	10272.0	10502.1	9850.1	8231.0	7529.4	7323.2	7441.5	7351.9
52.5°	9821.2	9945.9	10040.3	10113.7	11162.2	11830.3	9695.0	8910.3	8739.3	8718.5	8632.2
55°	8215.0	8413.3	8710.5	9250.7	10984.9	13420.5	12252.2	10580.5	10331.1	10200.0	10233.6
57.5°	5590.7	5891.2	6532.1	7559.7	10062.6	14098.2	16033.7	12738.1	12316.1	11849.5	11958.2
60°	3079.8	3330.7	4093.1	5128.8	7957.7	13997.5	19385.2	16244.7	14916.5	13679.5	13903.2
62.5°	1993.0	2047.3	2614.8	3503.4	4884.3	12357.8	21247.2	22105.5	19290.9	16092.9	16407.7
65°	1601.4	1639.8	1917.9	2825.7	3402.6	7949.8	21330.3	28185.3	26329.6	19372.4	19382.1
67.5°	1564.7	1582.3	1743.7	2376.6	3191.7	4328.1	18437.5	30582.6	31012.5	23243.4	21371.9
68°	1587.1	1607.9	1770.8	2303.1	3190.1	3989.2	17040.6	30545.8	31282.7	23890.7	21371.9
70°	1400.1	1425.7	1806.0	2383.0	3054.2	3429.9	11668.9	28923.6	30109.5	25378.7	20278.7
72.5°	732.0	711.3	893.4	1881.1	3437.8	3573.7	6164.5	24164.0	25548.1	23503.9	17520.1
75°	570.6	519.5	500.2	743.2	3023.9	3706.4	3580.1	17174.8	18220.1	16943.1	11710.4
77.5°	537.0	474.6	437.9	439.6	1331.4	3856.6	2896.1	10107.4	10107.4	8082.3	3736.7
80°	431.5	374.0	350.1	399.6	642.5	3554.5	3022.3	4606.1	3928.5	2089.0	1029.3
82.5°	284.5	254.1	255.7	324.5	487.4	2373.5	3500.1	2274.3	1708.5	925.4	605.7
85°	180.7	155.1	172.6	227.0	364.4	1058.0	3465.0	1580.7	1131.6	519.5	302.1
87.5°	91.1	70.3	86.3	118.3	222.2	303.7	2852.9	1411.3	839.1	215.7	164.6
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°	5323.7	5323.7	5323.7	5323.7	5323.7	5323.7	5323.7	5323.7	5323.7	5323.7	5323.7
2.5°	5298.2	5263.1	5245.5	5216.7	5181.6	5146.4	5122.4	5111.2	5104.8	5108.0	5106.5
5°	5336.5	5290.2	5215.1	5108.0	4997.7	4881.1	4791.6	4722.9	4679.7	4666.9	4663.7
7.5°	5365.4	5298.2	5157.6	4962.5	4774.0	4569.4	4395.2	4256.2	4161.9	4118.7	4117.1
10°	5360.6	5274.2	5052.0	4764.4	4487.9	4187.4	3914.1	3680.8	3511.4	3429.9	3426.7
12.5°	5365.4	5247.0	4922.6	4532.7	4136.3	3706.4	3300.3	2937.6	2685.0	2565.2	2560.4
15°	5384.5	5218.3	4790.0	4273.7	3725.5	3118.2	2538.0	2082.5	1852.4	1774.1	1774.1
17.5°	5383.0	5170.4	4636.5	3973.2	3238.0	2424.6	1732.5	1451.3	1428.9	1500.8	1511.9
20°	5351.0	5093.7	4438.4	3616.8	2665.9	1678.2	1174.8	1134.8	1313.8	1511.9	1534.3
22.5°	5301.4	4994.6	4209.9	3202.9	1999.5	1093.2	906.2	967.0	1209.8	1456.0	1491.2
25°	5232.7	4874.7	3947.7	2721.9	1329.7	786.3	756.0	831.0	1002.1	1166.7	1192.2
27.5°	5132.0	4722.9	3661.7	2200.8	848.6	647.3	658.5	711.3	784.7	855.1	869.4
30°	5005.7	4545.5	3350.0	1623.8	644.0	578.6	597.7	629.7	661.6	706.4	716.1
32.5°	4877.8	4364.8	3025.5	1115.6	562.6	541.9	561.0	578.6	605.7	636.1	642.5
35°	4762.8	4197.1	2691.5	778.4	527.4	517.8	527.4	538.6	565.8	596.2	599.3
37.5°	4679.7	4059.6	2343.1	615.3	506.7	497.1	501.9	506.7	538.6	583.4	588.2
40°	4668.5	3968.4	1989.8	553.0	490.7	477.9	474.6	477.9	519.5	570.6	575.4
42.5°	4777.2	3973.2	1644.6	527.4	477.9	463.5	450.7	457.1	493.9	533.8	537.0
45°	5034.5	4085.2	1345.7	516.3	466.7	455.5	436.3	439.6	457.1	477.9	481.1
47.5°	5488.4	4329.6	1117.2	509.8	457.1	447.5	423.5	414.0	415.5	426.8	426.8
50°	6214.0	4738.8	978.1	503.5	449.1	431.5	404.4	385.1	380.4	386.8	388.4
52.5°	7296.0	5440.5	911.0	490.7	434.8	410.7	380.4	361.2	353.2	359.6	359.6
55°	8758.4	6560.8	879.0	473.1	417.2	385.1	358.0	342.1	335.6	340.4	340.4
57.5°	10425.4	8016.9	933.3	449.1	394.8	358.0	338.8	327.7	322.8	327.7	329.3
60°	12405.6	9922.0	1307.3	418.7	370.8	334.0	322.8	316.5	313.2	318.0	318.0
62.5°	15038.0	12456.8	2023.4	394.8	345.2	311.7	308.4	305.2	302.1	306.9	306.9
65°	17879.6	14763.1	2082.5	380.4	322.8	292.5	294.1	294.1	290.9	295.6	295.6
67.5°	18784.2	14563.3	1163.5	362.8	295.6	273.3	279.7	279.7	278.1	282.8	281.3
68°	18592.5	14246.8	1013.3	358.0	290.9	268.5	274.9	276.5	274.9	279.7	278.1
70°	17163.7	12507.9	666.5	330.8	270.1	252.6	262.1	263.7	262.1	268.5	266.9
72.5°	14168.5	9381.8	492.2	289.3	244.5	231.7	241.3	243.0	244.5	250.9	249.3
75°	8998.2	5181.6	388.4	246.1	218.9	207.8	217.4	222.2	225.4	235.0	230.2
77.5°	2464.5	1572.7	314.9	209.4	188.6	183.8	190.2	196.6	199.8	210.9	203.0
80°	863.1	695.2	262.1	177.4	156.6	155.1	161.4	167.9	171.0	180.7	171.0
82.5°	524.3	453.9	209.4	139.0	123.1	121.4	129.5	135.8	139.0	139.0	132.7
85°	273.3	239.8	153.4	97.5	84.7	79.9	94.3	102.3	103.9	102.3	97.5
87.5°	153.4	135.8	81.5	46.3	38.4	40.0	49.5	60.8	65.6	63.9	60.8
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)