

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: P196163

Luminaire Tested: **NAV-AF-05-D-UNV-SL4-800-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196163  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-05-D-UNV-SL4-800-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(5) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL  
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 20245.2 lumens  
Efficiency: N/A  
Efficacy: 96.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B1 - U0 - G4

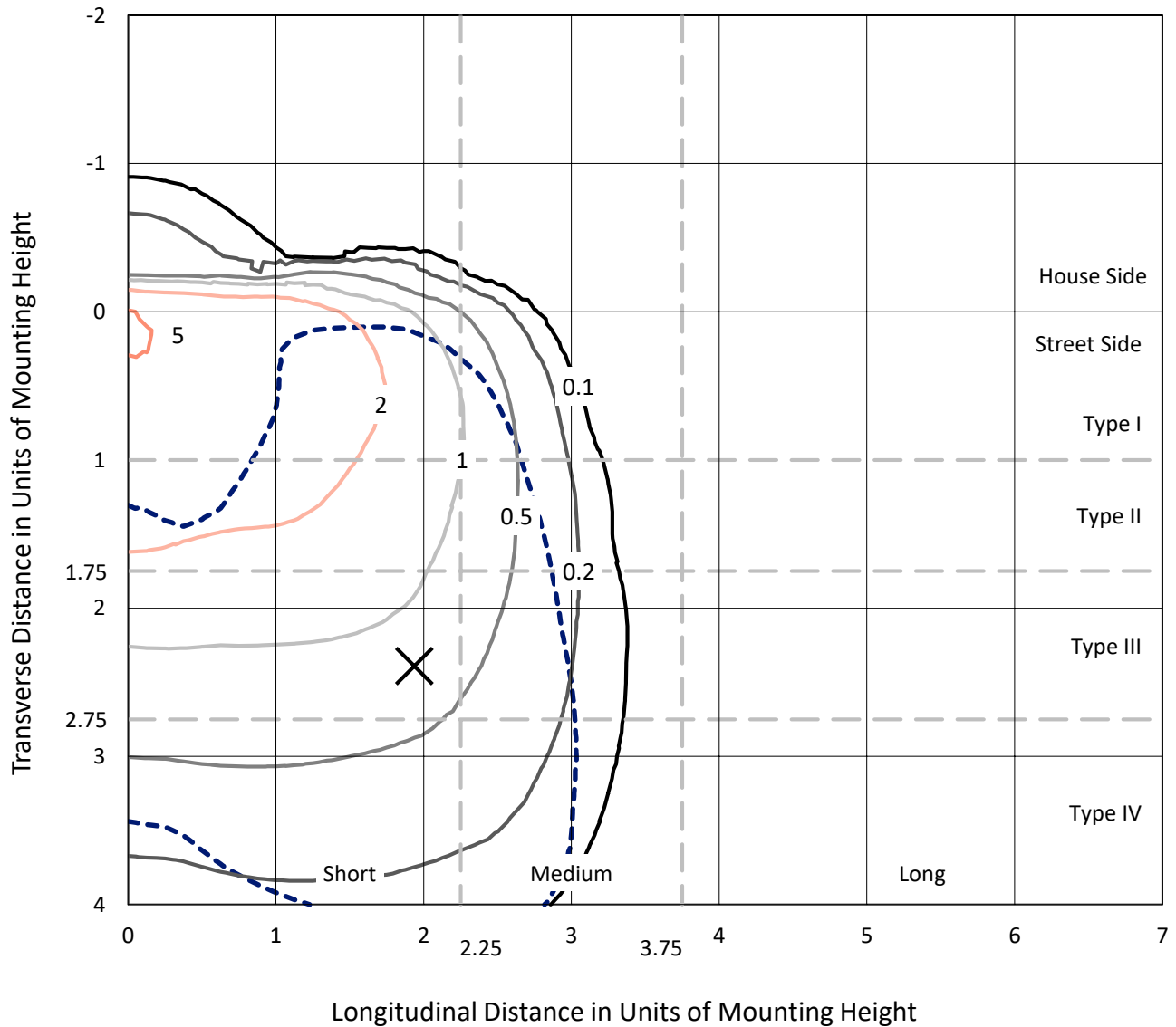
Input Watts (W): 210  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



REPORT NUMBER: P196163  
 CATALOG NUMBER: NAV-AF-05-D-UNV-SL4-800-HSS

### Iso-Footcandle Lines of Horizontal Illumination

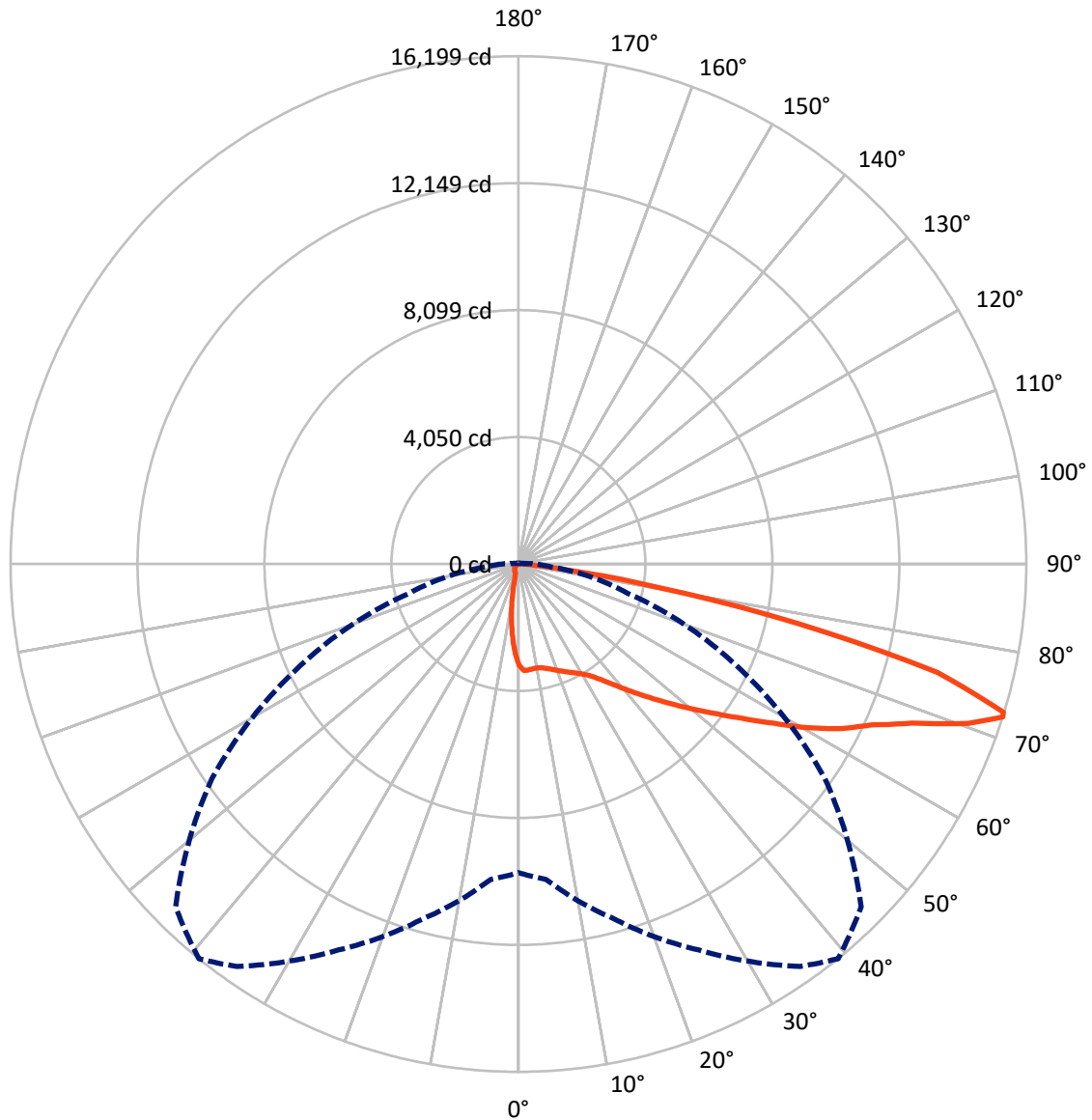
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.4 fc  
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P196163  
CATALOG NUMBER: NAV-AF-05-D-UNV-SL4-800-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral    - - - Horizontal Cone Through 72-Deg Vertical

REPORT NUMBER: P196163

CATALOG NUMBER: NAV-AF-05-D-UNV-SL4-800-HSS

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1326.8	0.0	1326.8
	% Fixture	6.6	0.0	6.6
<b>Street Side</b>	Lumens	18918.4	0.0	18918.4
	% Fixture	93.4	0.0	93.4
<b>Total</b>	Lumens	20245.2	0.0	20245.2
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	263.6	1.3
10°-20°	638.1	3.2
20°-30°	1059.8	5.2
30°-40°	1689.0	8.3
40°-50°	2787.9	13.8
50°-60°	4210.3	20.8
60°-70°	5484.6	27.1
70°-80°	3706.0	18.3
80°-90°	405.9	2.0
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°	20245.2	100.0
0°-180°	20245.2	100.0



REPORT NUMBER: P196163

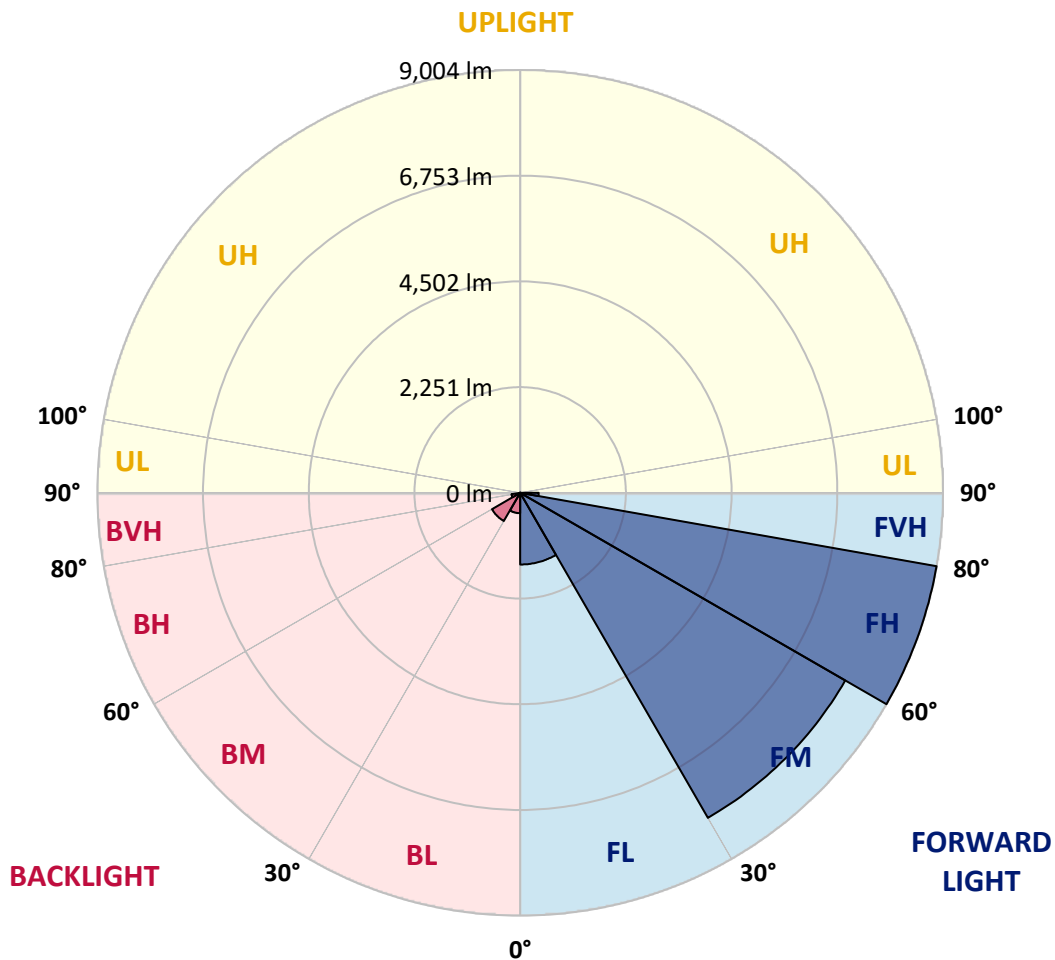
CATALOG NUMBER: NAV-AF-05-D-UNV-SL4-800-HSS

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1527.0	7.5			
FM	(30°-60°)	7993.1	39.5			
FH	(60°-80°)	9004.1	44.5			G4/12000
FVH	(80°-90°)	394.2	1.9			G3/500
BL	(0°-30°)	434.5	2.1	B1/500		
BM	(30°-60°)	694.2	3.4	B1/1000		
BH	(60°-80°)	186.5	0.9	B1/500		G1/500
BVH	(80°-90°)	11.7	0.1			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G4**

Type IV Short





REPORT NUMBER: P196163  
 CATALOG NUMBER: NAV-AF-05-D-UNV-SL4-800-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	3240.4	3240.4	3240.4	3240.4	3240.4	3240.4	3240.4	3240.4	3240.4	3240.4	3240.4
2.5°	3450.4	3456.9	3448.9	3434.6	3413.9	3401.1	3383.6	3345.5	3297.7	3256.3	3208.6
5°	3477.5	3480.7	3471.2	3444.1	3412.3	3394.8	3372.5	3331.1	3281.7	3224.4	3138.5
7.5°	3485.5	3483.9	3472.7	3439.4	3390.0	3367.7	3329.5	3278.6	3227.6	3175.1	3078.1
10°	3482.3	3482.3	3474.4	3442.5	3386.8	3366.1	3323.2	3269.0	3205.3	3152.8	3049.4
12.5°	3471.2	3477.5	3472.7	3455.2	3413.9	3397.9	3359.8	3305.7	3245.1	3191.0	3081.2
15°	3485.5	3495.0	3504.5	3498.2	3474.4	3460.0	3425.0	3369.3	3320.0	3262.7	3144.9
17.5°	3542.8	3563.4	3585.7	3587.3	3561.9	3536.4	3496.7	3439.4	3391.6	3339.0	3211.8
20°	3651.0	3666.9	3708.3	3716.3	3665.3	3628.7	3573.0	3506.2	3458.4	3413.9	3273.9
22.5°	3811.7	3829.2	3862.7	3851.5	3765.6	3722.6	3652.5	3576.2	3526.8	3501.4	3345.5
25°	4055.3	4060.0	4068.0	4018.7	3877.0	3829.2	3743.3	3657.4	3617.6	3614.4	3447.2
27.5°	4341.7	4348.1	4313.1	4203.3	4001.2	3939.1	3842.0	3763.9	3744.9	3768.8	3576.2
30°	4669.6	4671.2	4574.1	4395.8	4144.4	4075.9	3975.7	3889.8	3907.3	3966.1	3741.7
32.5°	5005.4	4989.4	4855.7	4623.4	4340.2	4257.4	4171.4	4085.5	4136.4	4255.8	3983.7
35°	5312.6	5306.1	5148.6	4878.0	4594.8	4521.5	4459.5	4368.8	4451.6	4645.7	4313.1
37.5°	5619.7	5615.0	5435.1	5153.4	4908.3	4855.7	4809.6	4739.6	4874.9	5159.8	4754.0
40°	5958.7	5950.8	5729.5	5459.0	5272.8	5244.2	5217.0	5186.9	5417.6	5813.9	5303.0
42.5°	6377.3	6342.3	6041.4	5791.6	5673.8	5681.8	5683.4	5713.6	6074.9	6592.2	5950.8
45°	6858.0	6780.0	6355.0	6148.1	6114.7	6162.5	6210.2	6336.0	6840.5	7488.2	6667.0
47.5°	7324.2	7198.5	6716.3	6531.6	6600.1	6698.8	6813.4	7058.5	7699.9	8425.6	7316.3
50°	7725.3	7596.4	7074.4	6921.6	7139.7	7286.1	7489.8	7860.7	8607.0	9218.2	7725.3
52.5°	8040.5	7938.6	7453.2	7351.3	7738.1	7938.6	8258.5	8745.5	9463.3	9740.2	8011.9
55°	8272.8	8221.9	7816.1	7830.4	8403.3	8693.0	9090.9	9641.5	10185.8	10146.0	8226.7
57.5°	8535.4	8495.6	8196.4	8395.4	9203.9	9577.9	10037.8	10480.3	10711.1	10472.4	8436.8
60°	8804.4	8817.1	8657.9	9079.7	10193.8	10607.6	11008.7	11118.6	11161.5	10803.4	8657.9
62.5°	9008.1	9062.2	9076.5	9818.2	11209.2	11562.5	11736.0	11658.1	11648.4	11247.4	8640.5
65°	9242.1	9383.7	9619.3	10628.4	12132.3	12364.7	12488.8	12601.8	12363.1	11379.5	7790.6
67.5°	9646.3	9869.1	10399.1	11621.4	13198.6	13542.4	13894.1	13774.7	12469.8	10037.8	5934.9
70°	10190.6	10462.8	11398.6	12918.5	14645.4	15221.5	15515.9	13680.8	10586.9	6935.9	3130.5
72°	9846.8	10093.6	11707.4	13580.6	15670.3	16198.7	15461.8	11933.3	7674.4	3595.3	1048.8
72.5°	9512.6	9767.3	11608.8	13572.7	15772.2	16176.4	15110.1	11244.3	6791.1	2798.0	722.5
75°	6600.1	6921.6	9951.9	12200.7	14242.7	13798.7	11561.0	6808.7	2460.5	480.7	238.8
77.5°	3412.3	3660.5	6036.7	8621.4	9926.4	9090.9	6832.5	2953.9	681.2	254.6	157.5
80°	2115.2	2237.7	2823.3	4247.8	5156.6	4510.4	3014.3	1193.7	436.1	151.2	125.7
82.5°	1095.0	1188.9	1777.8	1714.1	1905.0	1583.6	1112.5	999.5	268.9	93.9	128.9
85°	359.7	382.0	1091.8	1139.6	814.9	547.5	493.4	953.3	77.9	60.5	109.9
87.5°	47.8	55.8	383.6	652.5	401.1	248.3	296.0	335.8	27.0	33.5	30.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P196163

CATALOG NUMBER: NAV-AF-05-D-UNV-SL4-800-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3240.4	3240.4	3240.4	3240.4	3240.4	3240.4	3240.4	3240.4	3240.4	3240.4	3240.4
2.5°	3176.7	3156.0	3090.7	3025.5	2950.7	2882.3	2828.2	2793.2	2809.0	2756.5	2764.5
5°	3086.0	3033.5	2890.2	2735.9	2568.7	2412.7	2288.6	2196.4	2178.8	2099.2	2102.5
7.5°	2998.5	2912.5	2680.1	2425.5	2148.6	1924.2	1720.5	1542.2	1478.6	1413.3	1375.1
10°	2950.7	2833.0	2503.5	2132.6	1742.7	1413.3	1126.8	902.4	808.5	740.1	706.7
12.5°	2965.0	2809.0	2371.4	1866.9	1354.4	935.8	636.6	472.7	415.4	383.6	372.5
15°	3012.8	2813.8	2252.0	1607.5	985.2	566.6	374.0	319.9	315.2	313.5	311.9
17.5°	3057.4	2818.6	2126.3	1336.9	658.9	361.3	300.8	296.0	296.0	296.0	296.0
20°	3103.5	2820.2	1987.8	1053.6	432.9	296.0	283.3	280.1	283.3	283.3	283.3
22.5°	3157.6	2831.3	1854.1	778.3	319.9	278.5	270.6	268.9	270.6	270.6	268.9
25°	3224.4	2855.3	1709.4	557.0	289.7	267.4	259.4	257.8	259.4	257.8	257.8
27.5°	3313.5	2887.1	1540.6	399.5	276.9	256.2	248.3	248.3	248.3	246.7	246.7
30°	3428.2	2925.2	1314.6	315.2	264.2	245.1	238.8	238.8	237.1	235.6	235.6
32.5°	3592.1	2987.3	1068.0	284.9	249.9	230.8	224.4	226.0	224.4	222.8	221.3
35°	3824.5	3084.4	824.4	268.9	235.6	216.5	210.1	210.1	210.1	206.9	206.9
37.5°	4153.9	3232.4	617.6	253.1	221.3	202.1	194.2	194.2	192.6	189.3	191.0
40°	4561.3	3418.6	447.2	238.8	206.9	186.2	179.8	176.7	173.5	170.3	170.3
42.5°	5051.5	3600.1	335.8	224.4	192.6	173.5	165.5	162.3	156.0	152.8	151.2
45°	5600.7	3792.7	278.5	206.9	176.7	159.2	152.8	146.4	138.5	133.7	132.1
47.5°	6063.7	3910.4	248.3	189.3	160.7	144.8	138.5	128.9	119.4	116.2	116.2
50°	6342.3	3861.1	222.8	171.9	144.8	130.5	122.5	109.9	103.4	100.2	98.7
52.5°	6498.3	3714.6	202.1	157.5	130.5	114.6	103.4	92.3	89.1	85.9	85.9
55°	6604.9	3503.0	179.8	143.2	117.7	100.2	87.6	79.6	76.4	74.8	73.2
57.5°	6706.8	3245.1	159.2	130.5	105.1	89.1	74.8	71.6	65.3	63.6	63.6
60°	6736.9	2890.2	140.0	116.2	93.9	77.9	65.3	60.5	54.1	52.5	52.5
62.5°	6351.8	2299.8	124.2	98.7	82.8	66.8	57.3	50.9	44.6	44.6	44.6
65°	5307.8	1561.3	106.6	85.9	73.2	57.3	49.3	41.4	38.2	38.2	38.2
67.5°	3697.1	870.5	90.7	73.2	62.1	47.8	41.4	35.0	33.5	35.0	35.0
70°	1666.4	345.3	76.4	60.5	50.9	39.8	35.0	30.3	33.5	33.5	33.5
72°	499.7	184.6	63.6	49.3	41.4	35.0	30.3	28.6	31.8	33.5	33.5
72.5°	370.8	165.5	60.5	47.8	41.4	33.5	28.6	28.6	31.8	33.5	33.5
75°	191.0	113.0	46.1	35.0	30.3	27.0	23.8	27.0	31.8	31.8	31.8
77.5°	149.6	92.3	38.2	27.0	25.5	23.8	22.3	25.5	28.6	28.6	28.6
80°	140.0	60.5	30.3	25.5	22.3	20.7	20.7	22.3	25.5	27.0	27.0
82.5°	141.7	49.3	27.0	23.8	20.7	19.1	19.1	20.7	23.8	25.5	25.5
85°	90.7	33.5	23.8	20.7	19.1	17.5	17.5	19.1	22.3	23.8	23.8
87.5°	30.3	25.5	20.7	19.1	16.0	16.0	16.0	16.0	19.1	20.7	22.3
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)