

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: P196103

Luminaire Tested: **NAV-AF-05-D-UNV-SL2-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196103
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-05-D-UNV-SL2-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 1200mA 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: 33080.2 lumens
Efficiency: N/A
Efficacy: 103.4 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B3 - U0 - G5

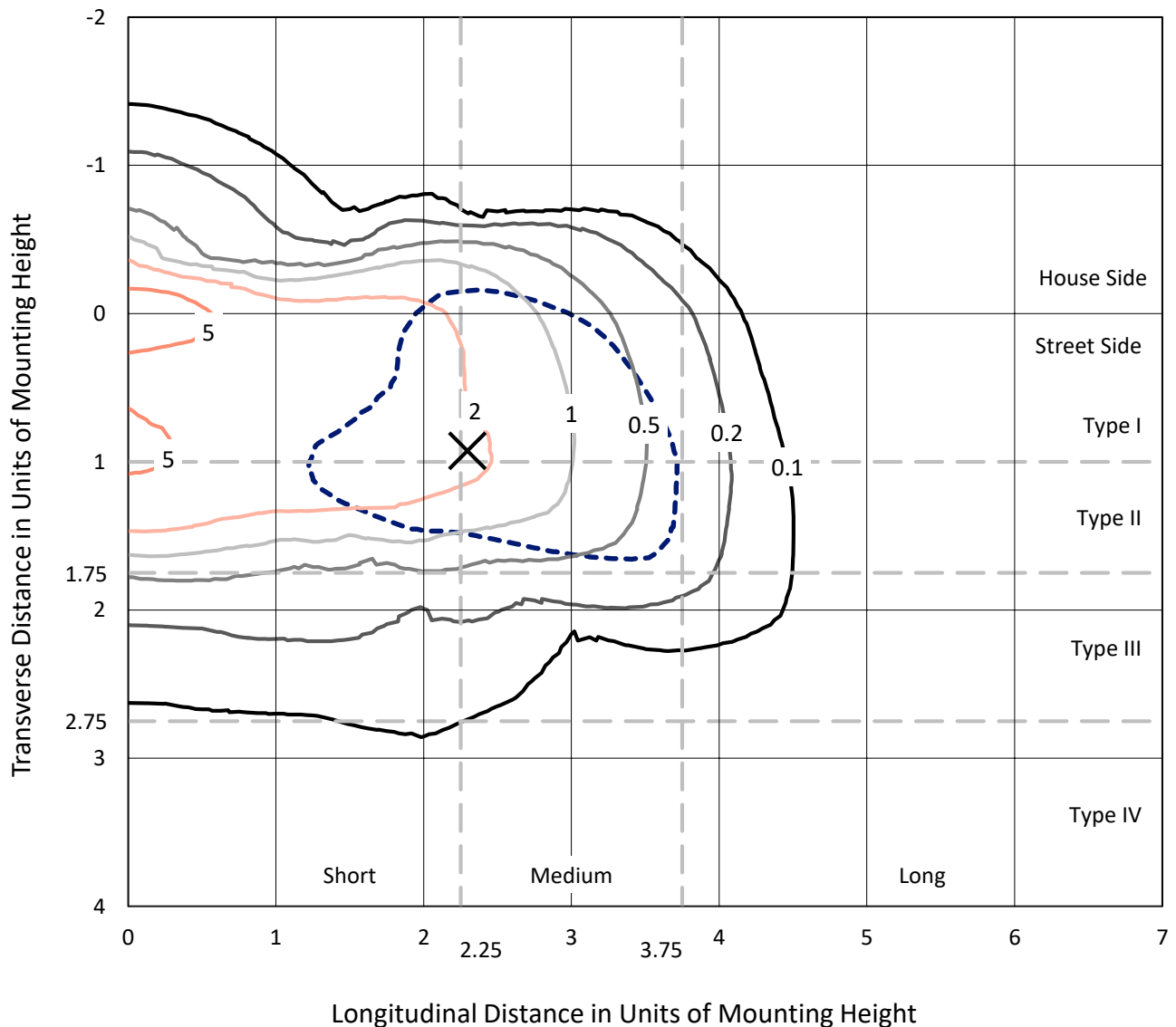
Input Watts (W): 320
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

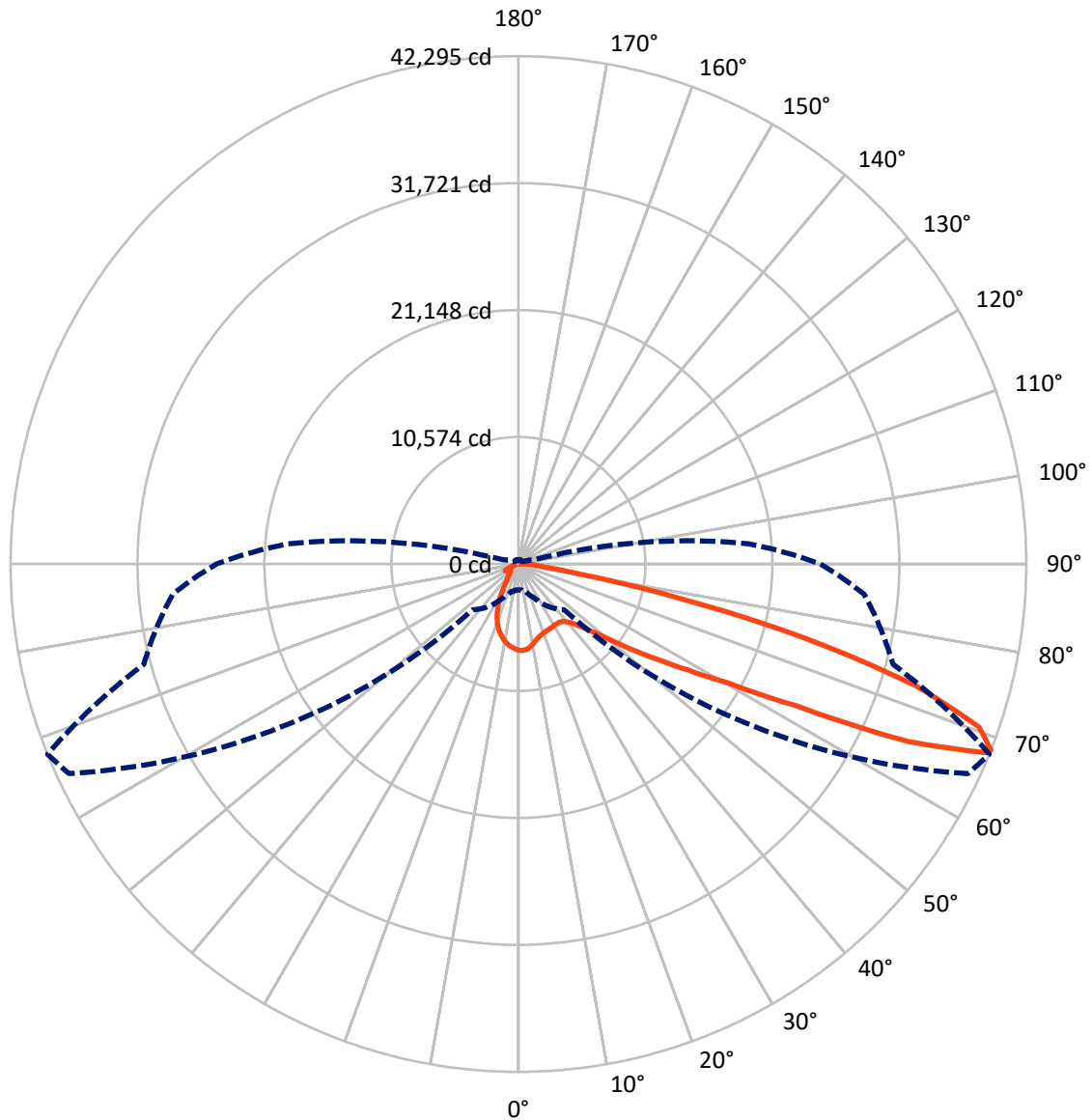
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 8 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
House Side	Lumens	5412.0	0.0	5412.0
	% Fixture	16.4	0.0	16.4
Street Side	Lumens	27668.2	0.0	27668.2
	% Fixture	83.6	0.0	83.6
Total	Lumens	33080.2	0.0	33080.2
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	616.7	1.9
10°-20°	1430.5	4.3
20°-30°	1934.6	5.8
30°-40°	2727.7	8.2
40°-50°	4485.5	13.6
50°-60°	6952.8	21.0
60°-70°	9014.9	27.3
70°-80°	5173.2	15.6
80°-90°	744.3	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°	33080.2	100.0
0°-180°	33080.2	100.0

Coefficient of Utilization



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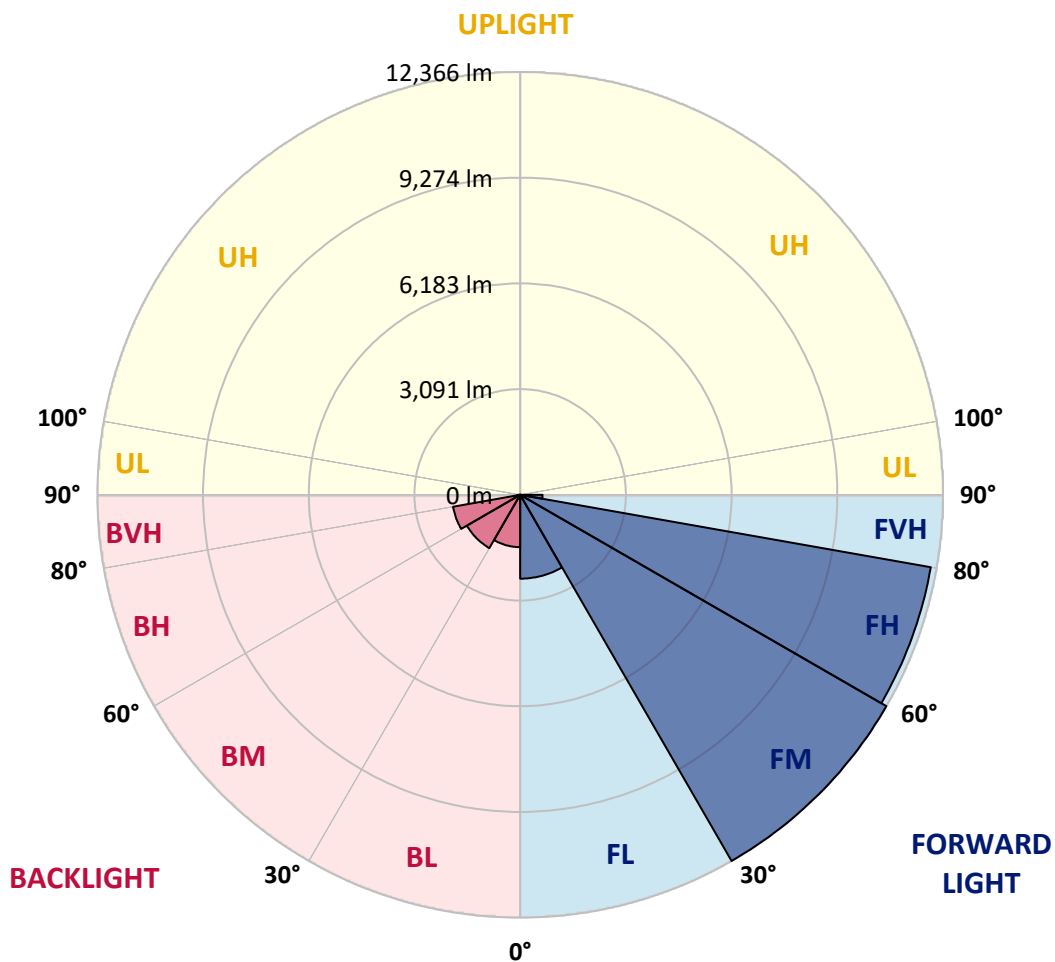
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2451.8	7.4			
FM	(30°-60°)	12365.9	37.4			
FH	(60°-80°)	12194.9	36.9			G5
FVH	(80°-90°)	655.6	2.0			G4/750
BL	(0°-30°)	1530.0	4.6	B3/2500		
BM	(30°-60°)	1800.1	5.4	B2/2500		
BH	(60°-80°)	1993.2	6.0	B3/2500		G3/2500
BVH	(80°-90°)	88.7	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-G5

Type II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	7198.0	7198.0	7198.0	7198.0	7198.0	7198.0	7198.0	7198.0	7198.0	7198.0	7198.0
2.5°	7005.7	7061.8	7061.8	7102.9	7139.6	7169.9	7195.7	7195.7	7195.7	7178.5	7163.4
5°	6268.7	6344.4	6355.2	6458.9	6595.1	6761.5	6947.3	7111.6	7143.9	7204.4	7228.2
7.5°	5756.7	5780.4	5821.5	5892.8	6031.1	6236.3	6528.1	6895.4	6984.0	7174.2	7273.6
10°	5393.6	5413.0	5447.6	5518.9	5644.2	5830.1	6117.6	6595.1	6742.0	7079.1	7275.7
12.5°	5127.8	5143.0	5175.3	5240.2	5367.6	5534.1	5828.0	6324.9	6506.5	6984.0	7306.0
15°	4920.4	4946.3	4972.3	5034.9	5164.6	5324.5	5622.6	6128.3	6324.9	6908.4	7362.2
17.5°	4838.3	4851.2	4855.5	4888.0	5004.7	5166.7	5464.9	5990.0	6193.1	6847.8	7405.4
20°	4890.1	4892.3	4849.1	4827.4	4894.4	5043.6	5333.1	5886.3	6093.7	6793.8	7422.7
22.5°	5117.0	5117.0	5004.7	4909.6	4864.2	4957.1	5244.5	5815.0	6039.7	6752.8	7422.7
25°	5549.2	5529.8	5354.7	5166.7	4965.7	4926.8	5188.3	5769.6	5998.7	6731.2	7394.6
27.5°	6117.6	6100.3	5877.7	5598.9	5235.9	4991.7	5168.9	5732.8	5957.6	6698.8	7334.0
30°	6809.0	6793.8	6541.1	6175.9	5639.9	5197.0	5214.3	5706.9	5925.1	6644.8	7232.6
32.5°	7498.3	7489.6	7288.7	6914.8	6197.4	5544.9	5333.1	5702.6	5907.8	6579.9	7109.4
35°	8192.0	8192.0	8068.8	7753.4	6947.3	6067.8	5581.6	5782.5	5940.3	6545.4	7003.4
37.5°	9216.3	9175.2	8946.1	8619.8	7891.6	6746.4	5983.5	5951.1	6065.7	6603.7	6968.9
40°	10802.4	10683.5	10110.8	9561.9	8922.4	7615.1	6571.3	6277.4	6346.6	6802.5	7051.0
42.5°	12461.9	12273.9	11515.5	10638.1	9987.7	8686.8	7342.7	6806.8	6804.7	7187.2	7312.5
45°	13885.9	13788.7	12967.5	11854.7	11204.3	9892.5	8317.3	7593.4	7515.6	7783.5	7816.0
47.5°	14713.5	14648.8	14153.9	13142.6	12647.8	11316.6	9553.3	8684.6	8537.8	8697.6	8647.9
50°	14484.5	14547.2	14404.6	13888.1	14199.3	13317.6	11128.6	10180.0	9901.2	10061.1	9940.1
52.5°	13278.7	13447.3	13574.8	13674.2	15091.7	15995.0	13108.0	12047.0	11815.8	11787.7	11671.1
55°	11107.0	11375.0	11776.9	12507.3	14851.8	18145.1	16565.5	14305.1	13968.1	13790.8	13836.2
57.5°	7558.8	7965.1	8831.5	10221.0	13605.0	19061.3	21678.2	17222.4	16651.9	16020.9	16167.8
60°	4164.0	4503.3	5534.1	6934.3	10759.1	18925.1	26209.5	21963.4	20167.7	18495.2	18797.6
62.5°	2694.7	2768.1	3535.2	4736.7	6603.7	16708.1	28727.0	29887.3	26082.1	21758.1	22183.8
65°	2165.2	2217.0	2593.1	3820.5	4600.5	10748.3	28839.3	38107.5	35598.7	26192.2	26205.2
67.5°	2115.6	2139.3	2357.5	3213.3	4315.3	5851.7	24928.1	41348.8	41930.0	31426.0	28895.5
68°	2145.7	2173.9	2394.3	3113.9	4313.2	5393.6	23039.5	41299.1	42295.2	32301.1	28895.5
70°	1893.0	1927.5	2441.8	3221.9	4129.4	4637.2	15776.8	39105.8	40709.1	34312.9	27417.4
72.5°	989.7	961.6	1207.9	2543.4	4648.1	4831.8	8334.6	32670.6	34542.0	31778.2	23687.8
75°	771.4	702.3	676.4	1004.8	4088.4	5011.1	4840.4	23221.0	24634.3	22907.7	15832.9
77.5°	726.1	641.8	592.1	594.2	1800.0	5214.3	3915.5	13665.5	13665.5	10927.7	5052.1
80°	583.5	505.6	473.2	540.2	868.7	4805.8	4086.3	6227.7	5311.5	2824.3	1391.6
82.5°	384.6	343.6	345.8	438.6	659.1	3208.9	4732.4	3075.0	2310.0	1251.2	819.0
85°	244.2	209.6	233.3	306.9	492.7	1430.5	4684.8	2137.1	1529.9	702.3	408.4
87.5°	123.2	95.0	116.7	159.9	300.3	410.6	3857.2	1908.1	1134.5	291.7	222.6
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°	7198.0	7198.0	7198.0	7198.0	7198.0	7198.0	7198.0	7198.0	7198.0	7198.0	7198.0
2.5°	7163.4	7115.9	7092.1	7053.1	7005.7	6958.1	6925.7	6910.5	6902.0	6906.2	6904.1
5°	7215.3	7152.6	7051.0	6906.2	6757.1	6599.4	6478.3	6385.5	6327.2	6309.9	6305.5
7.5°	7254.2	7163.4	6973.3	6709.6	6454.6	6178.0	5942.4	5754.5	5626.9	5568.6	5566.5
10°	7247.6	7131.0	6830.5	6441.6	6067.8	5661.5	5292.0	4976.6	4747.5	4637.2	4632.9
12.5°	7254.2	7094.3	6655.5	6128.3	5592.4	5011.1	4462.2	3971.7	3630.4	3468.2	3461.8
15°	7280.0	7055.3	6476.2	5778.2	5037.0	4215.9	3431.5	2815.7	2504.5	2398.6	2398.6
17.5°	7277.9	6990.5	6268.7	5372.0	4378.0	3278.0	2342.5	1962.1	1931.8	2029.1	2044.2
20°	7234.7	6886.8	6000.8	4890.1	3604.4	2268.9	1588.2	1534.2	1776.3	2044.2	2074.4
22.5°	7167.7	6752.8	5691.8	4330.5	2703.2	1478.1	1225.2	1307.3	1635.8	1968.6	2016.1
25°	7074.8	6590.8	5337.5	3680.0	1797.8	1063.2	1022.1	1123.7	1354.9	1577.5	1612.1
27.5°	6938.7	6385.5	4950.6	2975.6	1147.4	875.1	890.3	961.6	1061.0	1156.0	1175.6
30°	6767.9	6145.6	4529.2	2195.5	870.8	782.3	808.1	851.4	894.6	955.1	968.1
32.5°	6595.1	5901.4	4090.6	1508.3	760.7	732.5	758.5	782.3	819.0	860.0	868.7
35°	6439.5	5674.5	3638.9	1052.3	713.1	700.1	713.1	728.2	765.0	806.0	810.4
37.5°	6327.2	5488.6	3167.9	832.0	685.0	672.1	678.5	685.0	728.2	788.7	795.2
40°	6312.0	5365.5	2690.4	747.7	663.4	646.1	641.8	646.1	702.3	771.4	778.0
42.5°	6458.9	5372.0	2223.6	713.1	646.1	626.7	609.4	618.1	667.7	721.7	726.1
45°	6806.8	5523.2	1819.5	698.0	631.0	615.8	589.9	594.2	618.1	646.1	650.4
47.5°	7420.5	5853.8	1510.5	689.4	618.1	605.1	572.6	559.7	561.8	576.9	576.9
50°	8401.6	6407.0	1322.5	680.7	607.2	583.5	546.7	520.8	514.3	522.9	525.1
52.5°	9864.5	7355.7	1231.7	663.4	587.8	555.4	514.3	488.4	477.5	486.2	486.2
55°	11841.7	8870.5	1188.5	639.7	564.0	520.8	484.1	462.5	453.8	460.2	460.2
57.5°	14095.5	10839.1	1262.0	607.2	533.8	484.1	458.1	442.9	436.5	442.9	445.2
60°	16772.9	13414.9	1767.7	566.2	501.3	451.6	436.5	427.9	423.5	430.0	430.0
62.5°	20331.9	16842.1	2735.7	533.8	466.8	421.4	417.1	412.8	408.4	414.9	414.9
65°	24174.0	19960.2	2815.7	514.3	436.5	395.5	397.6	397.6	393.3	399.8	399.8
67.5°	25397.0	19690.1	1573.1	490.5	399.8	369.5	378.2	378.2	376.0	382.5	380.3
68°	25137.7	19262.3	1370.0	484.1	393.3	363.0	371.6	373.8	371.6	378.2	376.0
70°	23205.8	16911.2	901.1	447.3	365.2	341.5	354.4	356.5	354.4	363.0	360.9
72.5°	19156.4	12684.5	665.5	391.1	330.6	313.3	326.3	328.5	330.6	339.2	337.1
75°	12165.9	7005.7	525.1	332.8	296.0	280.9	293.9	300.3	304.7	317.6	311.2
77.5°	3332.1	2126.3	425.6	283.1	255.0	248.5	257.2	265.8	270.2	285.2	274.5
80°	1166.9	940.0	354.4	239.9	211.8	209.6	218.3	226.9	231.2	244.2	231.2
82.5°	708.8	613.7	283.1	188.0	166.4	164.2	175.0	183.7	188.0	188.0	179.3
85°	369.5	324.2	207.5	131.9	114.6	108.0	127.5	138.3	140.5	138.3	131.9
87.5°	207.5	183.7	110.2	62.7	51.9	54.0	67.0	82.1	88.6	86.4	82.1
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)