

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: P196115

Luminaire Tested: **NAV-AF-05-D-UNV-SL3-800-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196115
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24263)
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-SL3-800-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 21096.3 lumens
Efficiency: N/A
Efficacy: 100.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B2 - U0 - G4

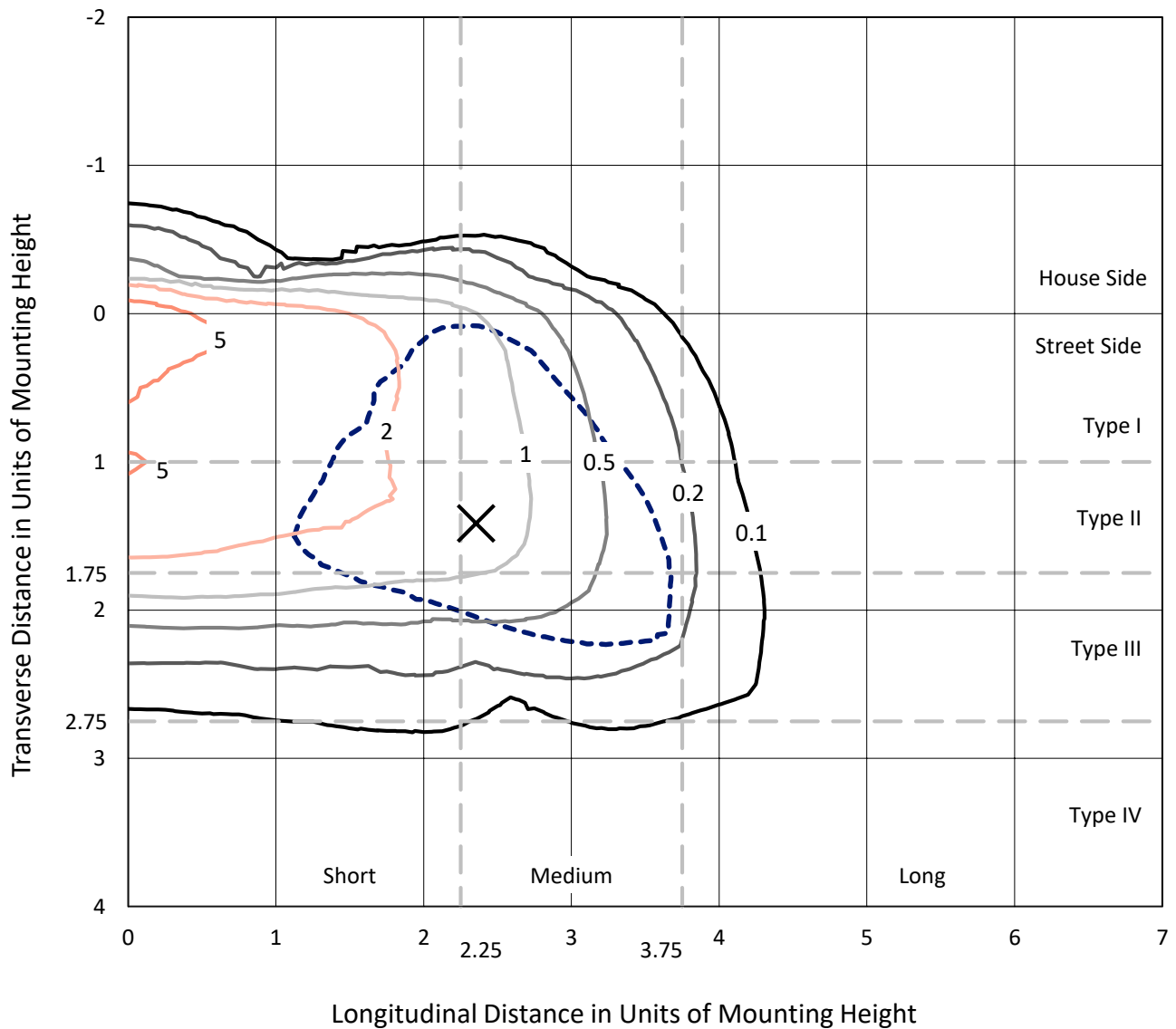
Input Watts (W): 210
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196115
 CATALOG NUMBER: NAV-AF-05-D-UNV-SL3-800-HSS

Iso-Footcandle Lines of Horizontal Illumination

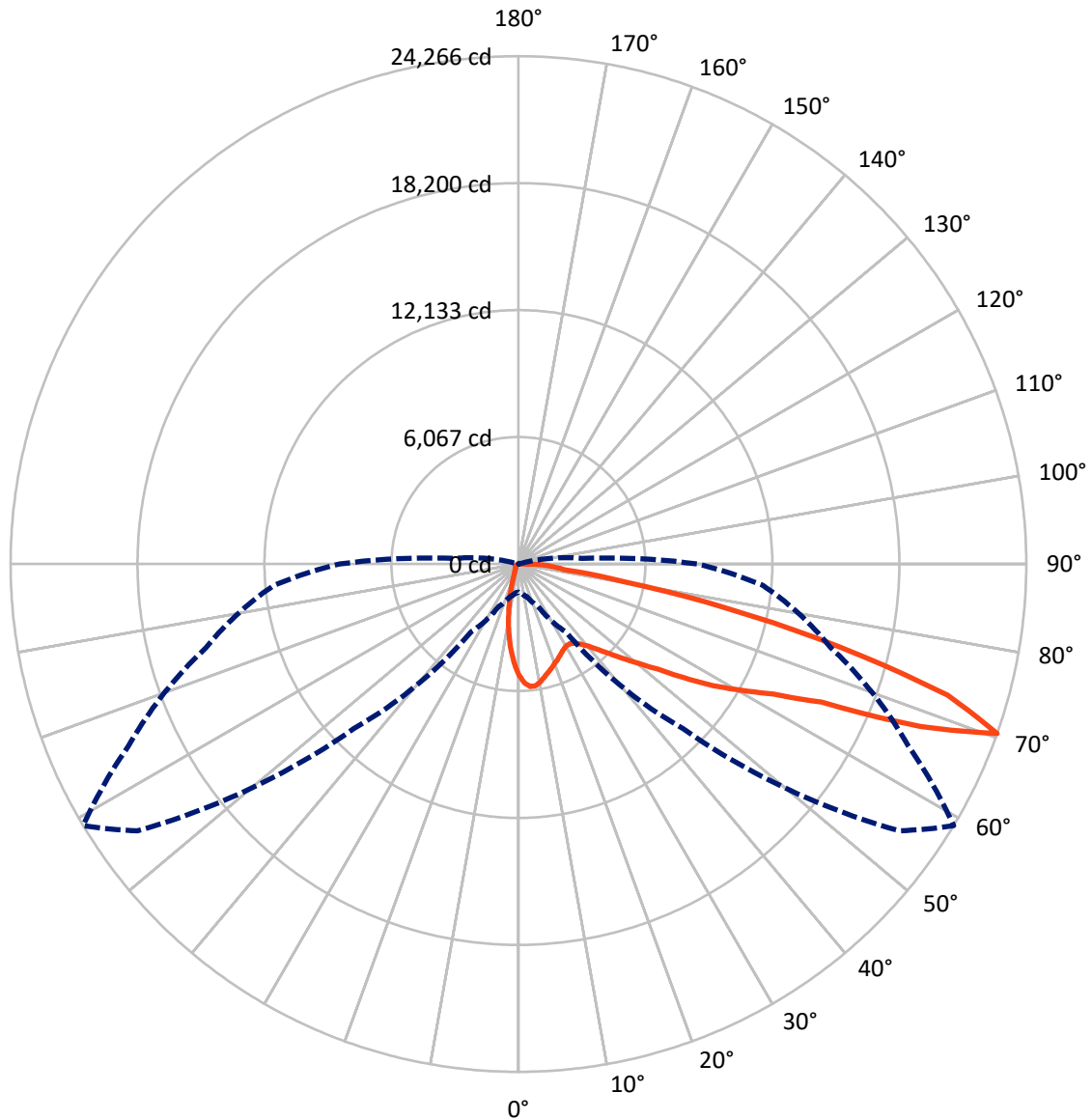
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.1 fc
 Type III - Medium - Non-Cutoff

REPORT NUMBER: P196115
CATALOG NUMBER: NAV-AF-05-D-UNV-SL3-800-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

REPORT NUMBER: P196115

CATALOG NUMBER: NAV-AF-05-D-UNV-SL3-800-HSS

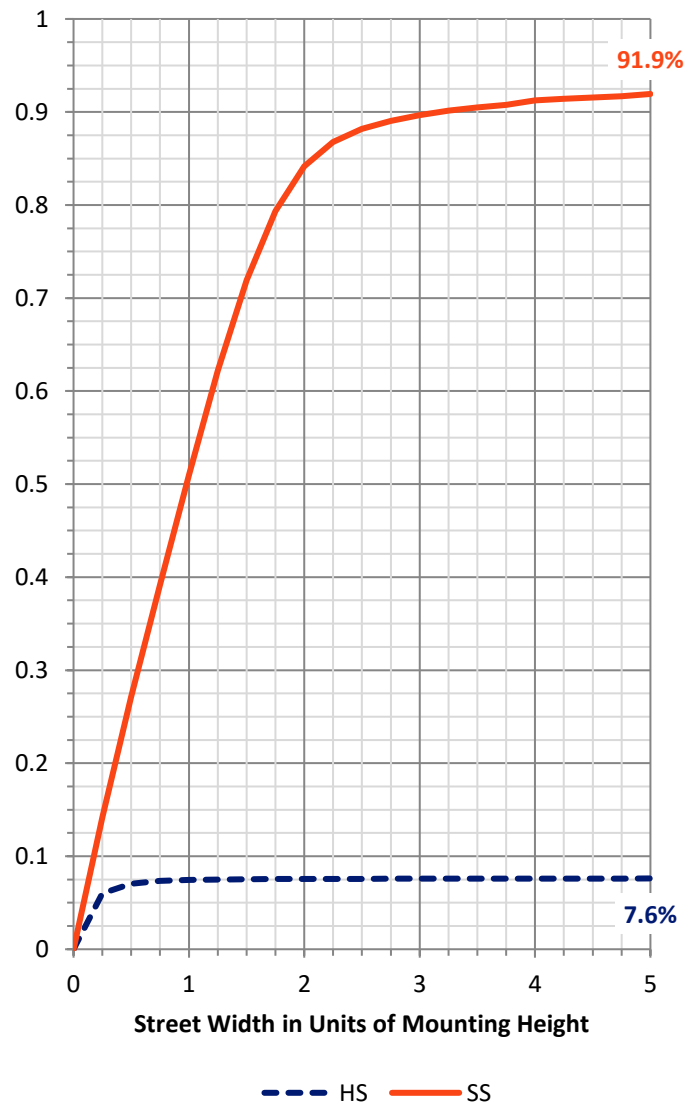
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1621.7	0.0	1621.7
	% Fixture	7.7	0.0	7.7
Street Side	Lumens	19474.6	0.0	19474.6
	% Fixture	92.3	0.0	92.3
Total	Lumens	21096.3	0.0	21096.3
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	438.7	2.1
10°-20°	920.1	4.4
20°-30°	1245.5	5.9
30°-40°	1797.4	8.5
40°-50°	2985.0	14.1
50°-60°	4565.9	21.6
60°-70°	5679.0	26.9
70°-80°	3139.3	14.9
80°-90°	325.5	1.5
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°	21096.3	100.0
0°-180°	21096.3	100.0



REPORT NUMBER: P196115

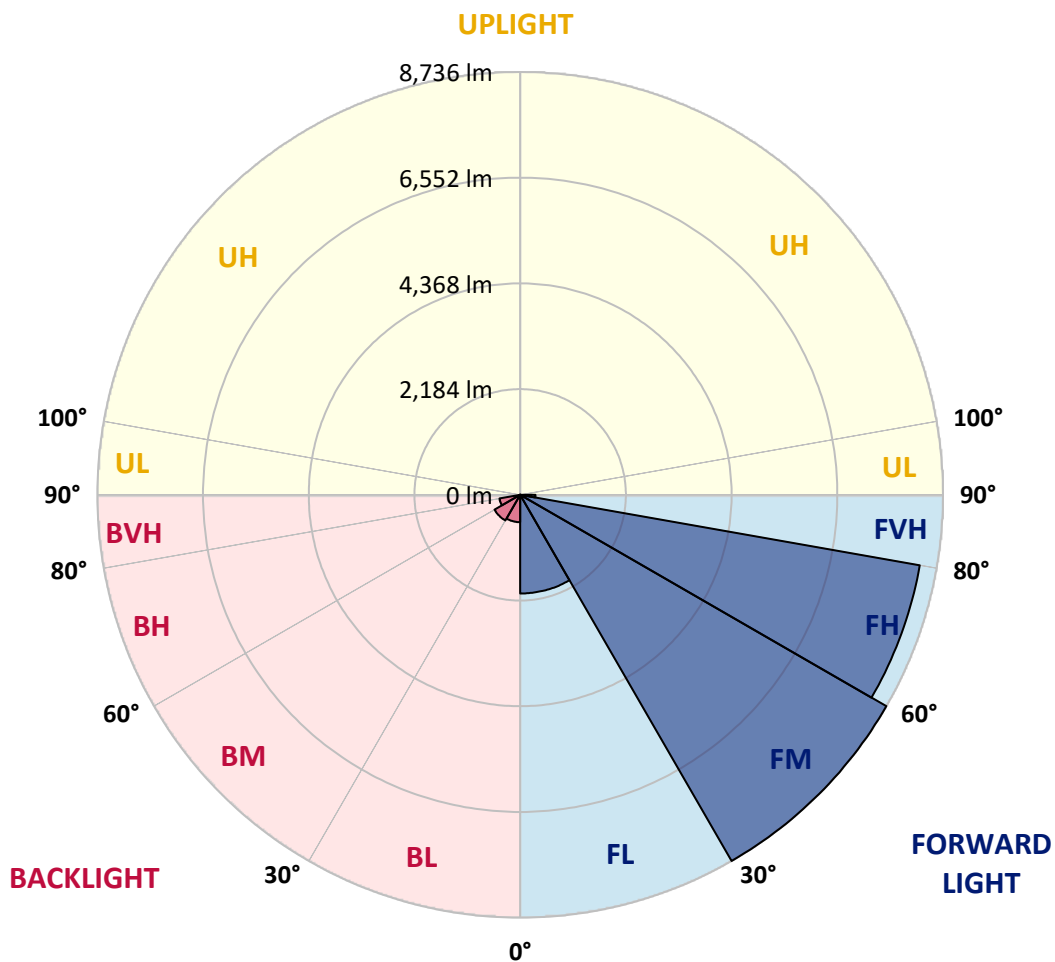
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2039.0	9.7			
FM	(30°-60°)	8736.2	41.4			
FH	(60°-80°)	8383.2	39.7			G4/12000
FVH	(80°-90°)	316.1	1.5			G3/500
BL	(0°-30°)	565.1	2.7	B2/1000		
BM	(30°-60°)	612.2	2.9	B1/1000		
BH	(60°-80°)	435.0	2.1	B1/500		G1/500
BVH	(80°-90°)	9.4	0.0			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G4

Type III Medium





REPORT NUMBER: P196115
 CATALOG NUMBER: NAV-AF-05-D-UNV-SL3-800-HSS

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	59°	65°	75°	85°
0°	5334.5	5334.5	5334.5	5334.5	5334.5	5334.5	5334.5	5334.5	5334.5	5334.5	5334.5
2.5°	6030.0	6020.4	5980.6	5972.7	5928.1	5839.0	5735.6	5694.2	5609.9	5476.2	5328.1
5°	6130.2	6134.9	6138.2	6120.6	6114.3	6041.1	5926.5	5877.2	5764.2	5544.6	5274.0
7.5°	5754.6	5767.4	5807.2	5824.7	5901.1	5929.7	5905.8	5874.0	5784.9	5525.5	5145.1
10°	5358.4	5382.3	5425.2	5453.9	5547.8	5624.2	5721.3	5729.1	5710.1	5461.8	5000.3
12.5°	5017.8	5040.1	5087.9	5145.1	5240.6	5339.3	5484.1	5535.0	5598.7	5420.4	4896.9
15°	4725.0	4731.4	4777.5	4849.1	4974.8	5110.2	5282.0	5356.8	5480.9	5404.6	4817.3
17.5°	4468.8	4470.4	4500.6	4565.8	4718.6	4896.9	5097.4	5196.1	5353.6	5382.3	4747.2
20°	4300.1	4298.4	4300.1	4335.1	4470.4	4682.0	4925.5	5028.9	5231.1	5355.1	4675.6
22.5°	4242.8	4234.8	4198.2	4185.5	4271.4	4457.6	4748.8	4884.1	5121.2	5347.3	4623.1
25°	4312.8	4308.1	4230.0	4156.9	4164.8	4280.9	4569.0	4734.5	5035.3	5375.9	4610.4
27.5°	4538.7	4529.2	4409.8	4266.6	4175.9	4196.7	4435.3	4608.8	4966.8	5445.9	4627.9
30°	4834.8	4836.4	4709.1	4535.6	4322.4	4204.5	4363.7	4527.7	4920.7	5550.9	4666.1
32.5°	5164.3	5162.6	5071.9	4871.4	4599.3	4351.0	4395.5	4534.0	4927.0	5705.3	4739.3
35°	5504.8	5487.3	5457.0	5280.4	4962.1	4607.2	4540.4	4642.3	4993.9	5909.0	4863.4
37.5°	5897.8	5891.5	5921.8	5735.6	5410.9	4984.4	4795.0	4863.4	5162.6	6209.8	5063.9
40°	6523.3	6488.3	6502.6	6249.6	5917.0	5492.0	5151.5	5169.0	5431.6	6607.6	5380.6
42.5°	7715.3	7573.6	7307.9	6833.6	6473.9	6055.5	5617.7	5587.6	5811.9	7089.9	5797.6
45°	9139.7	8977.3	8307.3	7478.2	7030.9	6660.1	6193.9	6112.7	6279.8	7664.4	6335.5
47.5°	10328.4	10153.4	9265.4	8151.4	7597.6	7284.0	6832.1	6736.5	6840.0	8331.2	6981.6
50°	10734.2	10637.2	9857.4	8711.6	8168.9	7984.2	7632.5	7473.4	7498.8	9050.5	7736.0
52.5°	10548.1	10514.6	9992.6	9095.1	8697.2	8757.7	8509.4	8342.3	8313.6	9836.7	8569.9
55°	10154.9	10139.1	9884.5	9308.3	9163.5	9465.9	9739.6	9594.8	9324.2	10672.1	9259.0
57.5°	9593.2	9653.7	9836.7	9719.0	9736.4	10213.9	10882.3	10957.0	10552.9	11337.4	9769.8
60°	8092.5	8254.8	9093.5	10159.7	10976.2	11458.4	12106.1	12246.2	11593.6	11792.6	10360.2
62.5°	5982.2	6214.5	7409.7	9368.8	11658.9	13824.8	13734.1	13672.0	12586.7	12402.1	11434.4
65°	3513.9	3786.0	4796.6	7320.6	10629.2	15346.2	16773.7	15914.4	14100.1	13668.9	13145.2
67.5°	1750.6	1752.2	2209.0	3864.0	7855.3	14284.8	21210.7	20714.1	17318.0	15535.7	13820.1
70°	1346.3	1382.9	1634.4	2245.5	3972.2	11125.7	22227.6	24266.2	20551.8	15452.9	11725.7
72.5°	1141.1	1164.9	1454.5	1954.2	2969.6	6107.9	19242.1	21449.4	19611.3	13056.1	8643.1
75°	821.2	840.3	1287.5	1772.9	2734.0	3030.1	13199.3	15908.0	14714.4	9184.2	4756.8
77.5°	203.7	202.1	448.8	1438.7	2446.1	2524.0	7573.6	10201.1	8442.6	3760.6	1222.2
80°	90.7	87.6	101.9	302.4	2275.8	2382.4	3330.8	5151.5	3238.6	609.5	374.0
82.5°	63.6	60.5	63.6	111.4	760.7	2210.5	2013.2	2232.8	1185.6	208.5	159.2
85°	20.7	19.1	35.0	93.9	213.3	1274.7	1963.9	1667.8	881.7	89.1	106.6
87.5°	3.2	3.2	12.7	50.9	62.1	424.9	1152.3	1155.4	396.3	52.5	47.8
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°	5334.5	5334.5	5334.5	5334.5	5334.5	5334.5	5334.5	5334.5	5334.5	5334.5	5334.5
2.5°	5253.4	5159.5	5027.4	4895.2	4776.0	4653.4	4554.7	4508.6	4487.9	4459.2	4397.2
5°	5132.3	4962.1	4672.4	4387.6	4121.8	3867.2	3649.2	3525.0	3391.4	3384.9	3319.8
7.5°	4938.2	4696.4	4239.6	3797.2	3391.4	3003.1	2668.9	2452.4	2304.4	2212.1	2148.4
10°	4721.8	4411.5	3806.7	3184.4	2632.3	2113.4	1683.8	1403.7	1233.4	1147.4	1098.1
12.5°	4549.9	4160.0	3380.2	2597.3	1904.9	1309.8	910.3	706.6	615.9	580.8	565.0
15°	4402.0	3929.3	2980.8	2072.1	1271.5	752.8	526.7	459.9	445.6	445.6	444.0
17.5°	4252.3	3706.5	2592.5	1556.4	800.5	493.4	415.3	405.8	407.4	412.1	412.1
20°	4110.7	3494.8	2218.5	1109.2	525.2	394.7	377.2	374.0	378.8	385.1	383.5
22.5°	3996.1	3308.6	1868.3	762.3	404.3	358.0	346.9	342.2	345.3	350.2	348.5
25°	3914.9	3149.5	1546.9	531.5	351.7	326.2	313.5	307.2	303.9	307.2	305.6
27.5°	3865.6	3015.8	1244.5	399.5	315.1	294.4	278.5	265.8	257.8	257.8	254.6
30°	3833.8	2890.0	975.6	331.0	284.9	262.6	240.3	222.8	210.1	206.8	205.3
32.5°	3832.2	2781.8	728.9	292.9	256.2	230.8	203.7	181.5	167.2	163.9	162.3
35°	3872.0	2694.4	536.3	264.2	230.8	200.5	170.3	146.4	133.7	133.7	132.1
37.5°	3975.4	2643.4	405.8	241.9	210.1	175.0	143.2	120.9	109.8	113.0	113.0
40°	4168.0	2633.8	331.0	224.4	192.5	152.8	116.2	98.7	93.9	98.7	98.7
42.5°	4462.4	2684.7	294.4	211.6	176.7	130.5	97.1	84.4	82.8	87.6	87.6
45°	4845.9	2785.0	273.7	200.5	159.2	108.2	81.1	73.2	71.6	77.9	77.9
47.5°	5310.6	2920.3	254.6	187.8	141.7	89.1	68.4	62.1	62.1	68.4	70.1
50°	5861.3	3103.3	235.5	175.0	127.4	74.8	57.3	52.5	54.1	60.5	62.1
52.5°	6494.6	3327.7	218.0	163.9	111.4	60.5	47.8	44.6	46.1	52.5	54.1
55°	7040.6	3523.5	197.3	152.8	90.7	49.3	39.8	38.2	39.8	47.8	47.8
57.5°	7516.3	3711.3	178.2	135.2	71.6	39.8	31.8	31.8	35.0	43.0	44.6
60°	8148.1	4007.2	162.3	114.6	54.1	30.3	25.5	27.0	31.8	38.2	39.8
62.5°	9266.9	4510.1	141.7	95.4	39.8	23.8	20.7	22.3	28.6	36.6	38.2
65°	10667.4	4986.0	117.7	79.6	30.3	17.5	16.0	20.7	28.6	36.6	38.2
67.5°	10524.2	4336.7	92.3	63.6	22.3	14.3	12.7	19.1	27.0	36.6	38.2
70°	8534.9	3039.6	68.4	43.0	17.5	12.7	12.7	19.1	27.0	35.0	36.6
72.5°	5920.1	1691.7	52.5	28.6	16.0	12.7	11.2	17.5	25.5	35.0	36.6
75°	2816.8	518.8	41.3	20.7	14.3	11.2	9.5	17.5	25.5	35.0	36.6
77.5°	541.0	132.1	33.5	17.5	12.7	11.2	9.5	16.0	25.5	33.5	35.0
80°	183.0	58.9	27.0	16.0	12.7	11.2	9.5	16.0	23.8	31.8	33.5
82.5°	100.2	33.5	23.8	14.3	12.7	9.5	8.0	14.3	22.3	31.8	33.5
85°	77.9	23.8	19.1	14.3	12.7	9.5	8.0	14.3	22.3	30.3	31.8
87.5°	39.8	17.5	16.0	14.3	12.7	9.5	8.0	12.7	20.7	28.6	31.8
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)