

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: P195616

Luminaire Tested: **NAV-AF-04-D-UNV-SL2-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195616
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-SL2-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 5000K, 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: 23918 lumens
Efficiency: N/A
Efficacy: 106.3 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

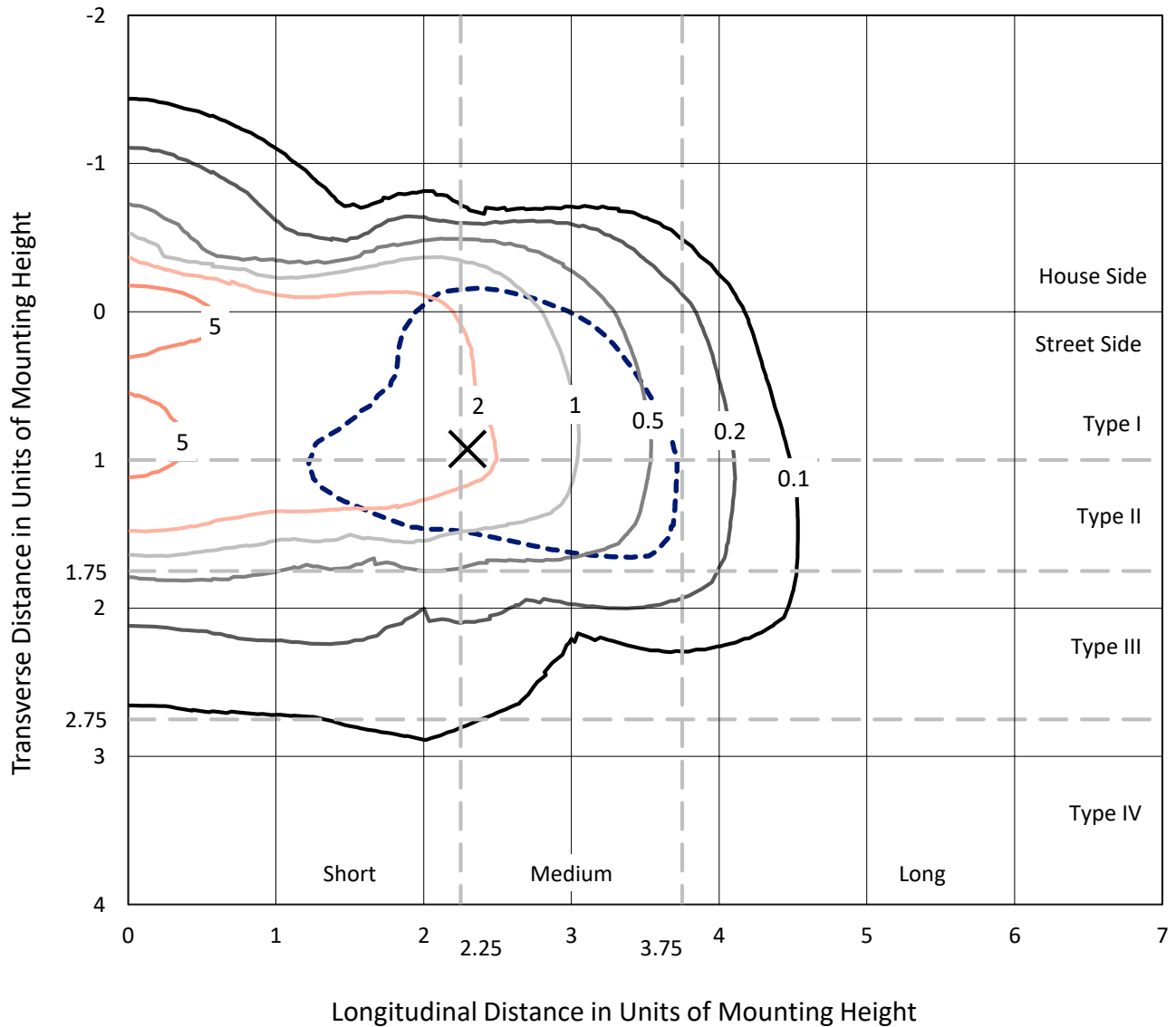
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

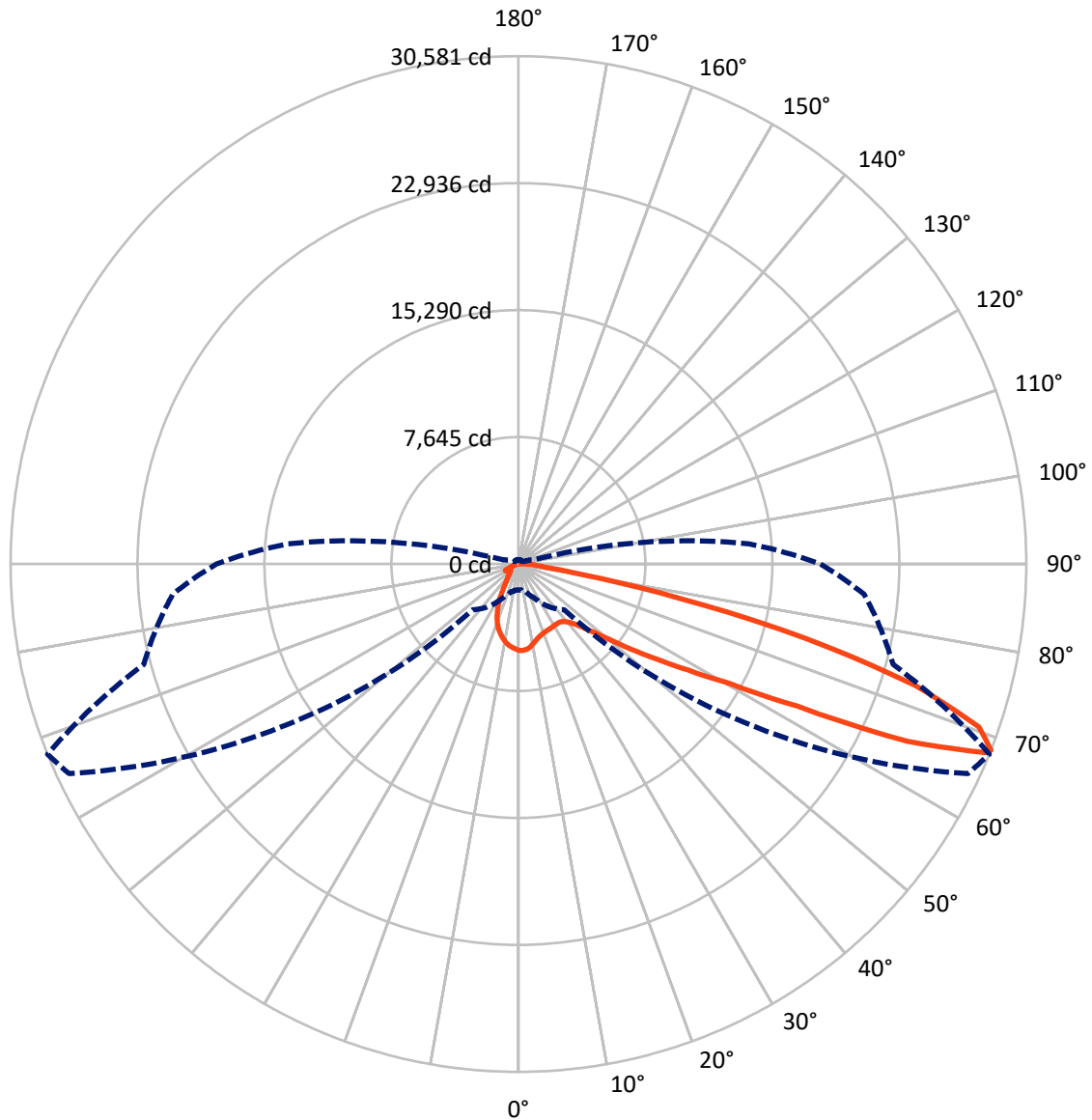
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.3 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
House Side	Lumens	3913.1	0.0	3913.1
	% Fixture	16.4	0.0	16.4
Street Side	Lumens	20005.0	0.0	20005.0
	% Fixture	83.6	0.0	83.6
Total	Lumens	23918.0	0.0	23918.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	445.9	1.9
10°-20°	1034.3	4.3
20°-30°	1398.8	5.8
30°-40°	1972.2	8.2
40°-50°	3243.1	13.6
50°-60°	5027.1	21.0
60°-70°	6518.0	27.3
70°-80°	3740.4	15.6
80°-90°	538.2	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°	23918.0	100.0
0°-180°	23918.0	100.0



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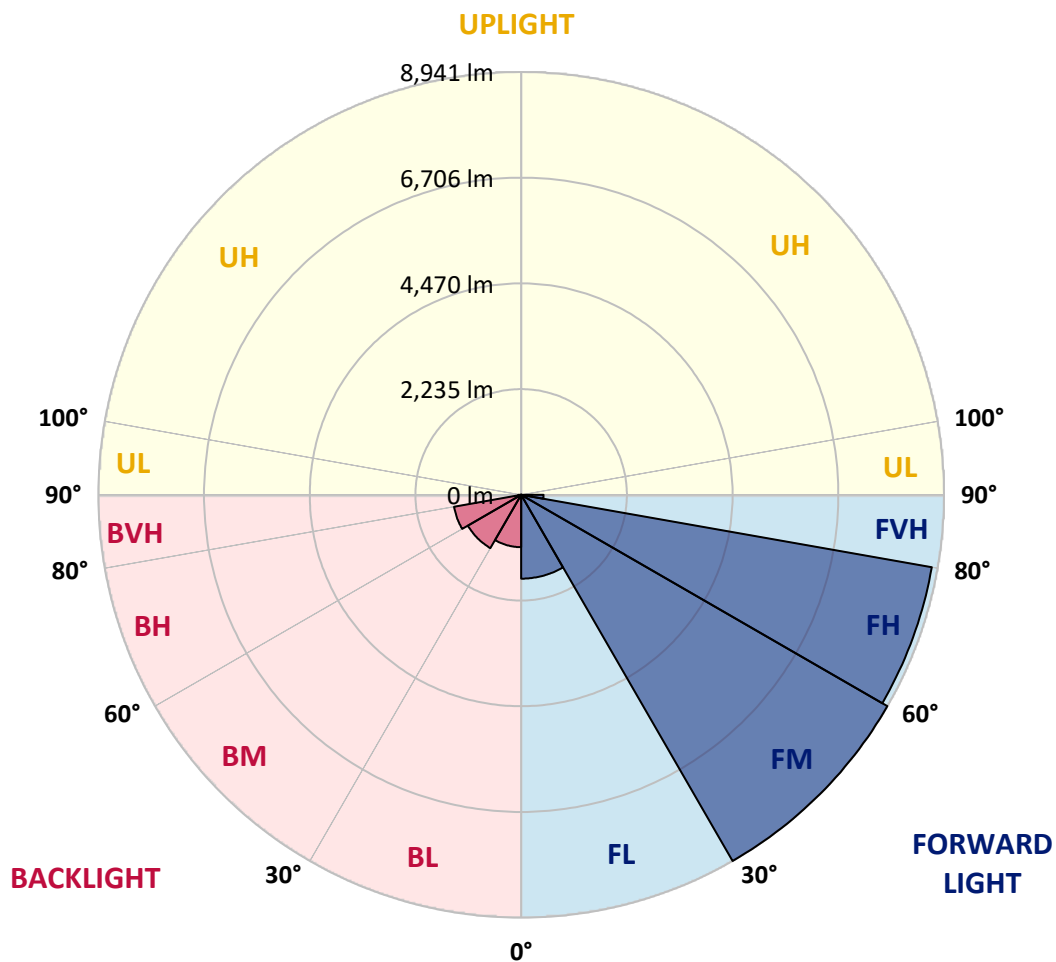
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1772.7	7.4			
FM	(30°-60°)	8941.0	37.4			
FH	(60°-80°)	8817.3	36.9			G4/12000
FVH	(80°-90°)	474.0	2.0			G3/500
BL	(0°-30°)	1106.3	4.6	B3/2500		
BM	(30°-60°)	1301.5	5.4	B2/2500		
BH	(60°-80°)	1441.1	6.0	B3/2500		G3/2500
BVH	(80°-90°)	64.1	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°	5204.3	5204.3	5204.3	5204.3	5204.3	5204.3	5204.3	5204.3	5204.3	5204.3	5204.3
2.5°	5065.3	5105.9	5105.9	5135.6	5162.2	5184.0	5202.8	5202.8	5202.8	5190.3	5179.3
5°	4532.5	4587.2	4595.0	4670.0	4768.4	4888.7	5023.1	5141.8	5165.3	5209.0	5226.2
7.5°	4162.2	4179.4	4209.1	4260.7	4360.6	4509.1	4720.0	4985.6	5049.7	5187.2	5259.0
10°	3899.7	3913.8	3938.8	3990.4	4081.0	4215.3	4423.1	4768.4	4874.7	5118.4	5260.6
12.5°	3707.6	3718.5	3741.9	3788.8	3881.0	4001.3	4213.8	4573.1	4704.4	5049.7	5282.5
15°	3557.6	3576.3	3595.1	3640.4	3734.1	3849.7	4065.4	4431.0	4573.1	4995.0	5323.1
17.5°	3498.2	3507.6	3510.7	3534.1	3618.5	3735.7	3951.3	4331.0	4477.8	4951.2	5354.3
20°	3535.7	3537.3	3506.0	3490.4	3538.8	3646.6	3856.0	4256.0	4406.0	4912.2	5366.8
22.5°	3699.8	3699.8	3618.5	3549.8	3517.0	3584.1	3791.9	4204.4	4366.9	4882.5	5366.8
25°	4012.2	3998.2	3871.6	3735.7	3590.4	3562.3	3751.3	4171.6	4337.2	4866.9	5346.5
27.5°	4423.1	4410.6	4249.7	4048.2	3785.7	3609.1	3737.3	4145.0	4307.5	4843.4	5302.8
30°	4923.1	4912.2	4729.4	4465.3	4077.9	3757.6	3770.1	4126.3	4284.1	4804.4	5229.3
32.5°	5421.5	5415.3	5270.0	4999.7	4481.0	4009.1	3856.0	4123.2	4271.6	4757.5	5140.3
35°	5923.0	5923.0	5834.0	5605.9	5023.1	4387.2	4035.7	4181.0	4295.0	4732.5	5063.7
37.5°	6663.6	6633.9	6468.3	6232.4	5705.9	4877.8	4326.3	4302.8	4385.6	4774.7	5038.7
40°	7810.4	7724.5	7310.5	6913.6	6451.1	5505.9	4751.2	4538.8	4588.8	4918.4	5098.1
42.5°	9010.3	8874.4	8326.0	7691.7	7221.4	6280.8	5309.0	4921.5	4920.0	5196.5	5287.2
45°	10040.0	9969.7	9375.9	8571.3	8101.0	7152.7	6013.7	5490.3	5434.0	5627.8	5651.2
47.5°	10638.4	10591.5	10233.7	9502.5	9144.7	8182.3	6907.4	6279.3	6173.0	6288.6	6252.7
50°	10472.7	10518.1	10414.9	10041.5	10266.5	9629.1	8046.3	7360.5	7158.9	7274.5	7187.0
52.5°	9600.9	9722.8	9815.0	9886.8	10911.8	11564.9	9477.5	8710.4	8543.2	8522.9	8438.5
55°	8030.7	8224.5	8515.1	9043.2	10738.4	13119.4	11977.3	10343.1	10099.3	9971.2	10004.0
57.5°	5465.3	5759.0	6385.5	7390.1	9836.8	13781.9	15674.0	12452.3	12039.8	11583.6	11689.9
60°	3010.7	3256.0	4001.3	5013.7	7779.2	13683.5	18950.3	15880.2	14581.8	13372.6	13591.3
62.5°	1948.3	2001.4	2556.1	3424.8	4774.7	12080.5	20770.5	21609.5	18858.1	15731.8	16039.6
65°	1565.5	1603.0	1874.9	2762.3	3326.3	7771.4	20851.7	27552.9	25738.9	18937.8	18947.2
67.5°	1529.6	1546.8	1704.6	2323.3	3120.1	4231.0	18023.8	29896.5	30316.7	22721.9	20892.4
68°	1551.5	1571.8	1731.1	2251.4	3118.5	3899.7	16658.3	29860.5	30580.8	23354.7	20892.4
70°	1368.7	1393.7	1765.5	2329.5	2985.7	3352.9	11407.1	28274.7	29434.0	24809.3	19823.7
72.5°	715.6	695.3	873.4	1838.9	3360.7	3493.5	6026.2	23621.9	24974.9	22976.6	17127.0
75°	557.8	507.8	489.0	726.5	2956.1	3623.2	3499.8	16789.5	17811.3	16563.0	11447.7
77.5°	525.0	464.0	428.1	429.7	1301.5	3770.1	2831.1	9880.6	9880.6	7901.0	3652.9
80°	421.8	365.6	342.2	390.6	628.1	3474.8	2954.5	4502.8	3840.4	2042.1	1006.2
82.5°	278.1	248.4	250.0	317.2	476.5	2320.2	3421.6	2223.3	1670.2	904.6	592.1
85°	176.6	151.6	168.7	221.9	356.2	1034.3	3387.3	1545.2	1106.2	507.8	295.3
87.5°	89.1	68.7	84.4	115.6	217.2	296.9	2788.9	1379.6	820.3	210.9	160.9
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°	5204.3	5204.3	5204.3	5204.3	5204.3	5204.3	5204.3	5204.3	5204.3	5204.3	5204.3
2.5°	5179.3	5145.0	5127.8	5099.7	5065.3	5030.9	5007.5	4996.5	4990.3	4993.4	4991.9
5°	5216.8	5171.5	5098.1	4993.4	4885.6	4771.6	4684.1	4616.9	4574.7	4562.2	4559.1
7.5°	5245.0	5179.3	5041.9	4851.2	4666.9	4466.9	4296.6	4160.7	4068.5	4026.3	4024.7
10°	5240.3	5155.9	4938.7	4657.5	4387.2	4093.5	3826.3	3598.2	3432.6	3352.9	3349.8
12.5°	5245.0	5129.3	4812.2	4431.0	4043.5	3623.2	3226.3	2871.7	2624.8	2507.6	2503.0
15°	5263.7	5101.2	4682.5	4177.8	3641.9	3048.2	2481.1	2035.8	1810.8	1734.3	1734.3
17.5°	5262.2	5054.4	4532.5	3884.1	3165.4	2370.2	1693.6	1418.7	1396.8	1467.1	1478.0
20°	5230.9	4979.4	4338.8	3535.7	2606.1	1640.5	1148.4	1109.3	1284.3	1478.0	1499.9
22.5°	5182.5	4882.5	4115.4	3131.0	1954.6	1068.7	885.9	945.3	1182.7	1423.3	1457.7
25°	5115.3	4765.3	3859.1	2660.8	1299.9	768.7	739.0	812.4	979.6	1140.5	1165.5
27.5°	5016.9	4616.9	3579.5	2151.4	829.6	632.8	643.7	695.3	767.1	835.9	849.9
30°	4893.4	4443.5	3274.8	1587.4	629.6	565.6	584.3	615.6	646.8	690.6	700.0
32.5°	4768.4	4266.9	2957.6	1090.6	550.0	529.7	548.4	565.6	592.1	621.8	628.1
35°	4655.9	4102.9	2631.1	760.9	515.6	506.2	515.6	526.5	553.1	582.8	585.9
37.5°	4574.7	3968.5	2290.5	601.5	495.3	485.9	490.6	495.3	526.5	570.3	575.0
40°	4563.8	3879.4	1945.2	540.6	479.7	467.2	464.0	467.2	507.8	557.8	562.5
42.5°	4670.0	3884.1	1607.7	515.6	467.2	453.1	440.6	446.8	482.8	521.8	525.0
45°	4921.5	3993.5	1315.5	504.7	456.2	445.3	426.5	429.7	446.8	467.2	470.3
47.5°	5365.3	4232.5	1092.1	498.4	446.8	437.5	414.0	404.7	406.2	417.2	417.2
50°	6074.6	4632.5	956.2	492.2	439.0	421.8	395.3	376.5	371.9	378.1	379.7
52.5°	7132.3	5318.4	890.6	479.7	425.0	401.5	371.9	353.1	345.3	351.5	351.5
55°	8561.9	6413.6	859.3	462.5	407.8	376.5	350.0	334.4	328.1	332.8	332.8
57.5°	10191.5	7837.0	912.4	439.0	385.9	350.0	331.2	320.3	315.6	320.3	321.9
60°	12127.3	9699.4	1278.0	409.3	362.5	326.5	315.6	309.4	306.2	310.9	310.9
62.5°	14700.6	12177.3	1978.0	385.9	337.5	304.7	301.5	298.4	295.3	300.0	300.0
65°	17478.5	14431.9	2035.8	371.9	315.6	285.9	287.5	287.5	284.4	289.0	289.0
67.5°	18362.8	14236.6	1137.4	354.7	289.0	267.2	273.4	273.4	271.9	276.5	275.0
68°	18175.4	13927.2	990.6	350.0	284.4	262.5	268.7	270.3	268.7	273.4	271.9
70°	16778.6	12227.3	651.5	323.4	264.0	246.9	256.2	257.8	256.2	262.5	260.9
72.5°	13850.6	9171.3	481.2	282.8	239.0	226.5	235.9	237.5	239.0	245.3	243.7
75°	8796.3	5065.3	379.7	240.6	214.0	203.1	212.5	217.2	220.3	229.7	225.0
77.5°	2409.2	1537.4	307.8	204.7	184.4	179.7	185.9	192.2	195.3	206.2	198.4
80°	843.7	679.6	256.2	173.4	153.1	151.6	157.8	164.1	167.2	176.6	167.2
82.5°	512.5	443.7	204.7	135.9	120.3	118.7	126.6	132.8	135.9	135.9	129.7
85°	267.2	234.4	150.0	95.3	82.8	78.1	92.2	100.0	101.6	100.0	95.3
87.5°	150.0	132.8	79.7	45.3	37.5	39.1	48.4	59.4	64.1	62.5	59.4
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)