

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: P196150

Luminaire Tested: **NAV-AF-04-D-UNV-SL3-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196150
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24262)
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-SL3-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 27341.4 lumens
Efficiency: N/A
Efficacy: 106.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B3 - U0 - G4

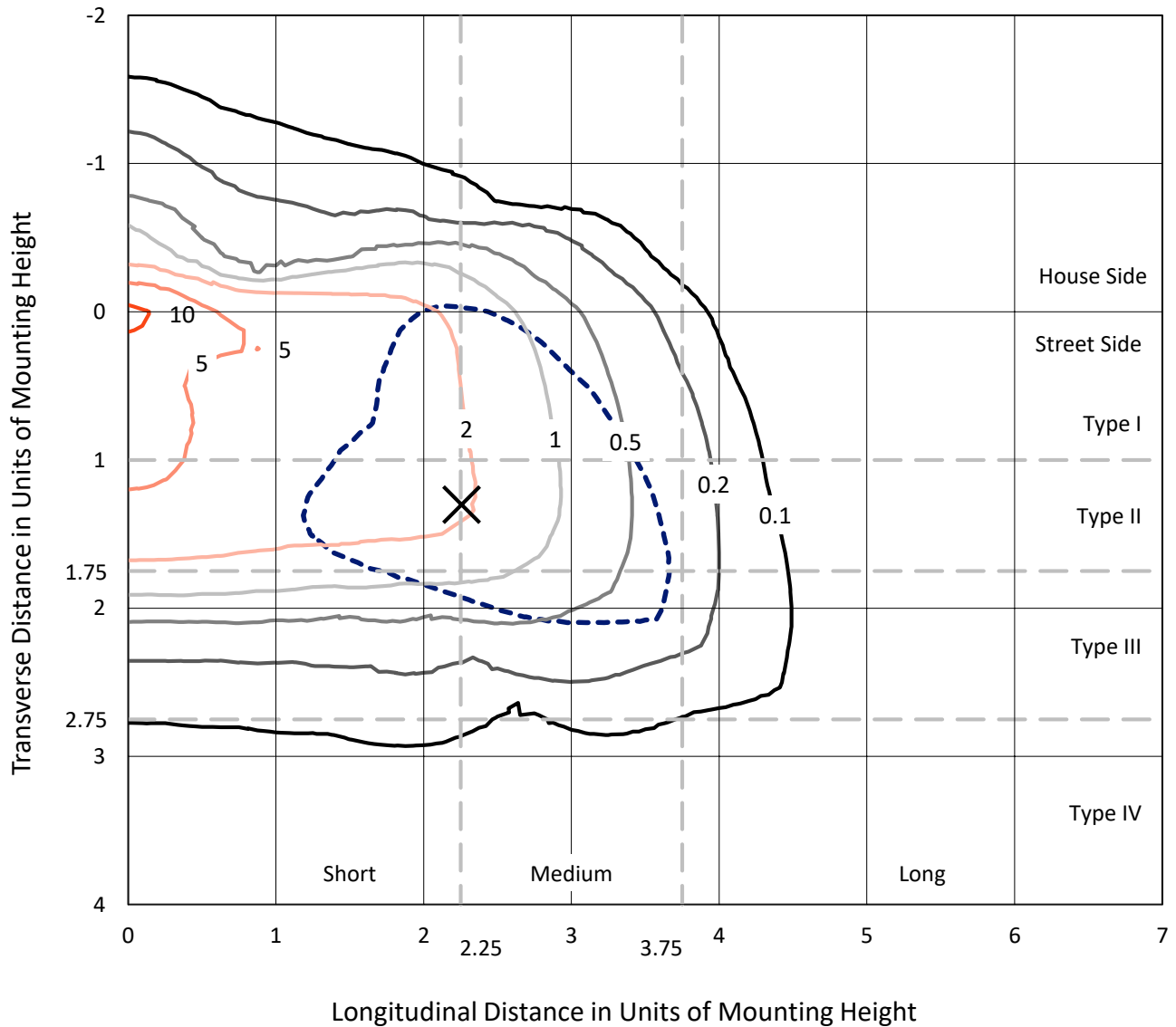
Input Watts (W): 258
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

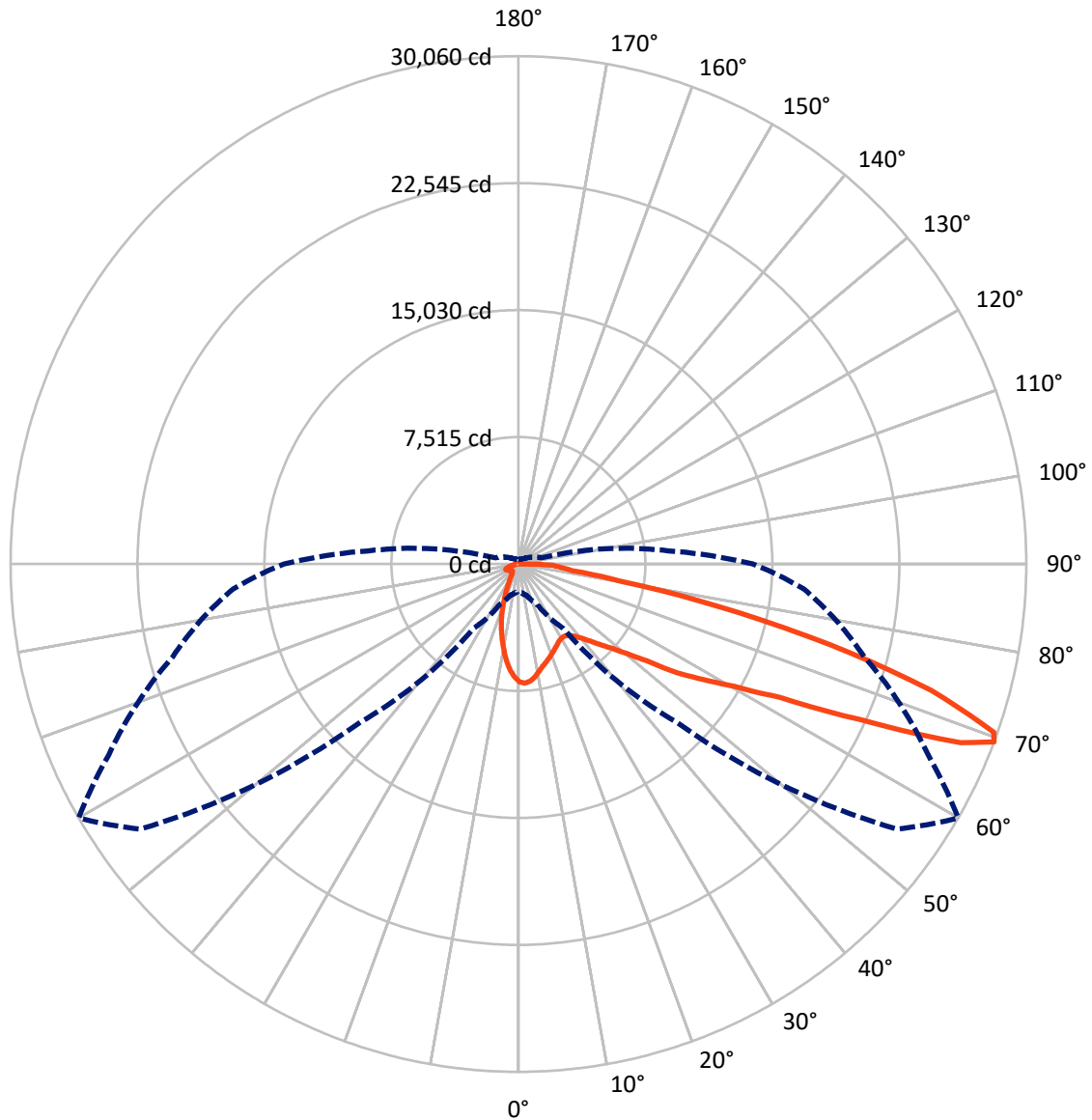
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 11.2 fc
 Type III - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 60-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3899.8	0.0	3899.8
	% Fixture	14.3	0.0	14.3
Street Side	Lumens	23441.7	0.0	23441.7
	% Fixture	85.7	0.0	85.7
Total	Lumens	27341.4	0.0	27341.4
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	591.8	2.2
10°-20°	1267.2	4.6
20°-30°	1616.5	5.9
30°-40°	2224.5	8.1
40°-50°	3603.2	13.2
50°-60°	5655.1	20.7
60°-70°	7539.2	27.6
70°-80°	4193.6	15.3
80°-90°	650.4	2.4
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°	27341.4	100.0
0°-180°	27341.4	100.0

Coefficient of Utilization



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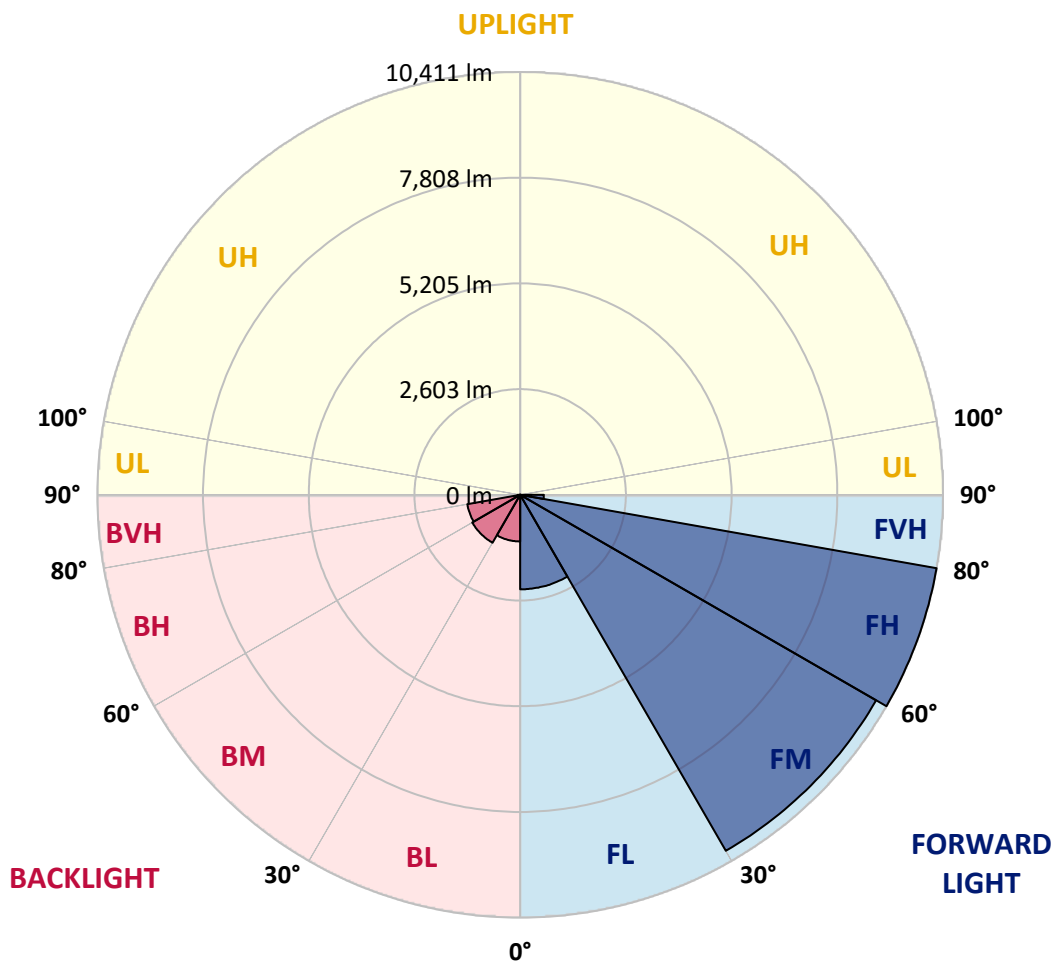
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2326.2	8.5			
FM	(30°-60°)	10120.4	37.0			
FH	(60°-80°)	10410.6	38.1			G4/12000
FVH	(80°-90°)	584.5	2.1			G4/750
BL	(0°-30°)	1149.3	4.2	B3/2500		
BM	(30°-60°)	1362.4	5.0	B2/2500		
BH	(60°-80°)	1322.2	4.8	B3/2500		G3/2500
BVH	(80°-90°)	65.9	0.2			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 III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	65°	75°	85°
0°	6976.2	6976.2	6976.2	6976.2	6976.2	6976.2	6976.2	6976.2	6976.2	6976.2	6976.2
2.5°	7162.1	7181.4	7181.4	7165.6	7156.9	7106.0	7076.2	7055.2	7018.4	6949.9	6888.6
5°	6906.1	6943.0	6958.7	6965.8	7011.3	6995.6	6997.3	6983.3	6951.7	6878.1	6778.2
7.5°	6436.2	6443.3	6471.3	6518.7	6629.1	6706.3	6769.4	6781.7	6774.6	6720.3	6580.0
10°	5973.4	5985.7	6018.9	6099.7	6204.8	6315.3	6452.1	6508.1	6550.2	6532.7	6355.6
12.5°	5589.4	5591.1	5628.0	5721.0	5838.4	5976.9	6162.8	6250.4	6350.4	6390.7	6192.5
15°	5219.5	5244.1	5279.0	5391.3	5536.8	5712.2	5926.1	6047.1	6178.5	6294.2	6066.3
17.5°	4938.9	4958.2	4979.3	5072.2	5240.5	5459.7	5724.4	5854.1	6027.7	6204.8	5936.6
20°	4784.6	4791.7	4775.9	4821.5	4963.5	5200.2	5507.1	5663.1	5869.9	6118.9	5803.3
22.5°	4753.1	4753.1	4695.2	4686.4	4749.6	4949.4	5282.6	5473.7	5726.2	6059.2	5684.1
25°	4900.3	4889.9	4781.2	4681.2	4658.4	4760.1	5068.7	5303.6	5603.4	6057.5	5594.7
27.5°	5179.2	5165.1	5030.2	4861.8	4716.3	4672.4	4903.9	5144.1	5507.1	6117.1	5549.1
30°	5526.3	5521.1	5384.3	5173.9	4933.7	4707.5	4839.1	5061.7	5442.1	6227.6	5547.4
32.5°	5906.7	5882.2	5798.1	5587.7	5275.6	4902.2	4877.6	5065.1	5424.6	6388.9	5587.7
35°	6311.8	6294.2	6273.1	6061.1	5710.4	5245.8	5047.6	5186.2	5510.5	6613.4	5701.6
37.5°	6827.2	6807.9	6843.0	6611.5	6227.6	5696.4	5335.2	5428.1	5685.9	6939.4	5913.8
40°	7744.1	7688.1	7589.9	7234.0	6830.8	6248.7	5750.7	5764.7	5985.7	7376.0	6253.9
42.5°	9250.2	9069.7	8584.0	7930.0	7467.1	6890.4	6292.5	6225.9	6399.5	7952.8	6748.3
45°	10759.8	10556.4	9735.9	8689.1	8126.4	7579.3	6962.2	6802.7	6914.8	8624.3	7384.8
47.5°	11734.6	11634.7	10709.0	9448.4	8817.2	8329.8	7728.4	7465.4	7546.1	9385.3	8170.2
50°	12020.4	11934.5	11206.9	10042.7	9469.4	9236.2	8676.9	8328.0	8342.1	10274.1	9111.7
52.5°	11806.5	11771.4	11289.3	10410.9	10069.0	10191.8	9990.1	9504.4	9388.7	11249.0	10132.1
55°	11520.7	11533.0	11347.2	10780.9	10679.2	11082.4	11708.3	11317.3	10826.4	12264.2	11194.7
57.5°	10621.3	10630.1	11117.4	11485.7	11843.3	12330.8	13046.1	12881.3	12309.7	13359.9	12385.1
60°	8552.5	8620.8	9706.1	11340.1	13174.1	14790.5	14965.9	14681.9	13887.7	14622.3	13933.2
62.5°	6110.2	6171.5	7428.6	9844.6	13018.0	17574.8	18511.0	17381.9	16028.4	16510.5	16110.8
65°	3210.2	3199.7	4172.8	6802.7	10964.9	18220.0	24096.9	22175.3	19634.8	19107.1	18214.7
67.5°	1793.6	1851.4	2228.4	3431.2	7146.3	16035.4	27664.8	28231.1	24649.2	21167.2	18123.5
69°	1658.6	1677.8	1930.3	2652.7	4658.4	13230.1	27358.0	30059.8	26763.7	21176.0	16955.8
70°	1611.2	1632.3	1862.0	2444.0	3913.3	10840.4	26241.1	29845.9	27277.3	20706.1	15893.4
72.5°	1444.7	1472.7	1695.4	2196.9	3297.9	5587.7	21137.4	25545.1	24708.8	18097.2	12323.7
75°	1232.6	1279.9	1616.5	2181.0	3124.3	3552.1	14096.3	19031.7	18390.0	12942.6	6992.1
77.5°	510.2	515.5	706.6	1597.2	3278.7	3399.6	7575.9	12055.5	10672.1	5675.3	2105.6
80°	355.9	348.9	352.4	466.4	2645.7	3422.4	3887.0	6131.2	4765.4	1497.3	985.3
82.5°	299.8	296.3	310.4	292.8	895.9	3883.5	3250.5	3196.2	2244.1	806.5	469.8
85°	198.1	192.8	254.2	266.5	426.1	3084.0	3496.0	2512.5	1672.6	431.3	199.9
87.5°	96.5	98.2	145.6	180.6	226.2	976.6	3348.7	1986.5	1292.2	187.6	80.6
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°	6976.2	6976.2	6976.2	6976.2	6976.2	6976.2	6976.2	6976.2	6976.2	6976.2	6976.2
2.5°	6864.0	6811.4	6764.1	6704.5	6658.9	6620.3	6567.8	6566.0	6557.2	6569.5	6573.0
5°	6711.5	6623.8	6490.6	6341.6	6236.4	6097.9	5962.9	5917.3	5866.4	5861.2	5877.0
7.5°	6481.8	6345.1	6117.1	5889.2	5661.3	5428.1	5207.2	5095.0	4986.3	4953.0	4968.8
10°	6225.9	6052.3	5703.4	5331.7	5010.8	4663.7	4327.1	4109.7	3911.6	3827.4	3848.4
12.5°	6026.0	5805.0	5314.1	4832.0	4351.6	3853.7	3410.1	2980.6	2656.2	2510.7	2519.4
15°	5854.1	5571.9	4949.4	4307.7	3706.5	3024.4	2408.9	1911.1	1627.0	1521.8	1518.4
17.5°	5668.3	5326.4	4569.0	3820.4	3040.2	2196.9	1613.0	1318.5	1206.3	1171.2	1171.2
20°	5470.2	5073.9	4171.0	3289.1	2338.9	1534.1	1213.2	1099.3	1057.2	1046.7	1044.9
22.5°	5286.1	4826.8	3771.3	2722.8	1691.9	1164.2	1032.7	988.9	981.8	990.6	990.6
25°	5140.5	4609.3	3366.2	2126.7	1230.8	974.8	918.7	913.5	939.8	971.3	976.6
27.5°	5031.9	4414.7	2966.6	1553.4	967.8	848.5	829.3	852.1	913.5	976.6	988.9
30°	4956.5	4248.2	2487.9	1116.9	806.5	743.4	752.2	792.5	885.4	981.8	1008.1
32.5°	4923.2	4113.2	2005.7	857.3	689.1	654.0	676.8	729.4	825.8	922.2	953.8
35°	4954.8	4015.0	1560.4	711.9	603.1	576.8	603.1	657.5	720.6	767.9	787.3
37.5°	5068.7	3979.9	1174.7	631.2	547.0	520.7	541.8	578.6	606.6	624.2	632.9
40°	5308.9	4016.7	920.5	589.1	515.5	485.7	490.9	508.4	527.7	541.8	543.5
42.5°	5691.1	4137.7	818.8	573.4	496.1	457.6	448.9	461.1	482.1	501.5	504.9
45°	6199.6	4339.4	808.2	578.6	487.4	434.9	417.3	429.5	457.6	489.2	494.4
47.5°	6857.0	4658.4	857.3	606.6	492.7	422.6	396.2	408.5	445.3	487.4	494.4
50°	7635.5	5100.2	948.5	648.8	517.2	422.6	387.5	398.0	436.6	483.9	490.9
52.5°	8552.5	5715.6	1043.2	690.8	552.3	438.3	391.0	389.2	424.3	468.1	476.9
55°	9564.1	6480.1	1134.4	727.6	571.5	459.4	399.8	378.7	406.7	441.8	448.9
57.5°	10754.6	7526.8	1293.9	762.7	582.1	475.2	410.3	368.2	384.0	408.5	413.8
60°	12369.3	9064.4	1604.2	822.2	601.4	482.1	412.0	357.6	355.9	373.5	375.2
62.5°	14475.0	10865.0	1900.5	892.4	640.0	483.9	405.0	350.7	333.1	338.4	338.4
65°	15972.3	11527.7	1814.6	952.1	675.0	482.1	398.0	345.3	315.6	306.8	306.8
67.5°	15120.1	10183.0	1541.1	967.8	678.5	462.9	382.2	333.1	299.8	278.8	278.8
69°	13868.3	8925.9	1414.8	939.8	650.5	440.1	364.7	320.8	289.3	264.7	264.7
70°	12848.0	7973.9	1337.7	906.4	617.1	420.7	348.9	308.6	278.8	257.7	255.9
72.5°	9592.1	5321.2	1143.1	781.9	506.7	355.9	305.0	275.3	250.7	236.7	236.7
75°	5061.7	2666.7	936.2	638.2	391.0	284.1	250.7	231.4	217.4	215.6	213.9
77.5°	1658.6	1206.3	673.2	480.4	287.6	221.0	199.9	187.6	185.9	192.8	192.8
80°	895.9	720.6	433.0	324.4	199.9	164.8	154.3	152.5	157.8	168.3	168.3
82.5°	434.9	355.9	257.7	199.9	136.8	121.0	121.0	122.8	129.7	142.0	142.0
85°	187.6	168.3	149.0	112.2	84.2	75.4	85.9	94.7	99.9	108.7	112.2
87.5°	89.4	78.9	68.3	43.8	36.8	38.6	45.6	56.1	66.6	73.7	75.4
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)