

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: P196151

Luminaire Tested: **NAV-AF-05-D-UNV-SL3-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196151
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-05-D-UNV-SL3-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 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: 33699.1 lumens
Efficiency: N/A
Efficacy: 105.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B3 - U0 - G5

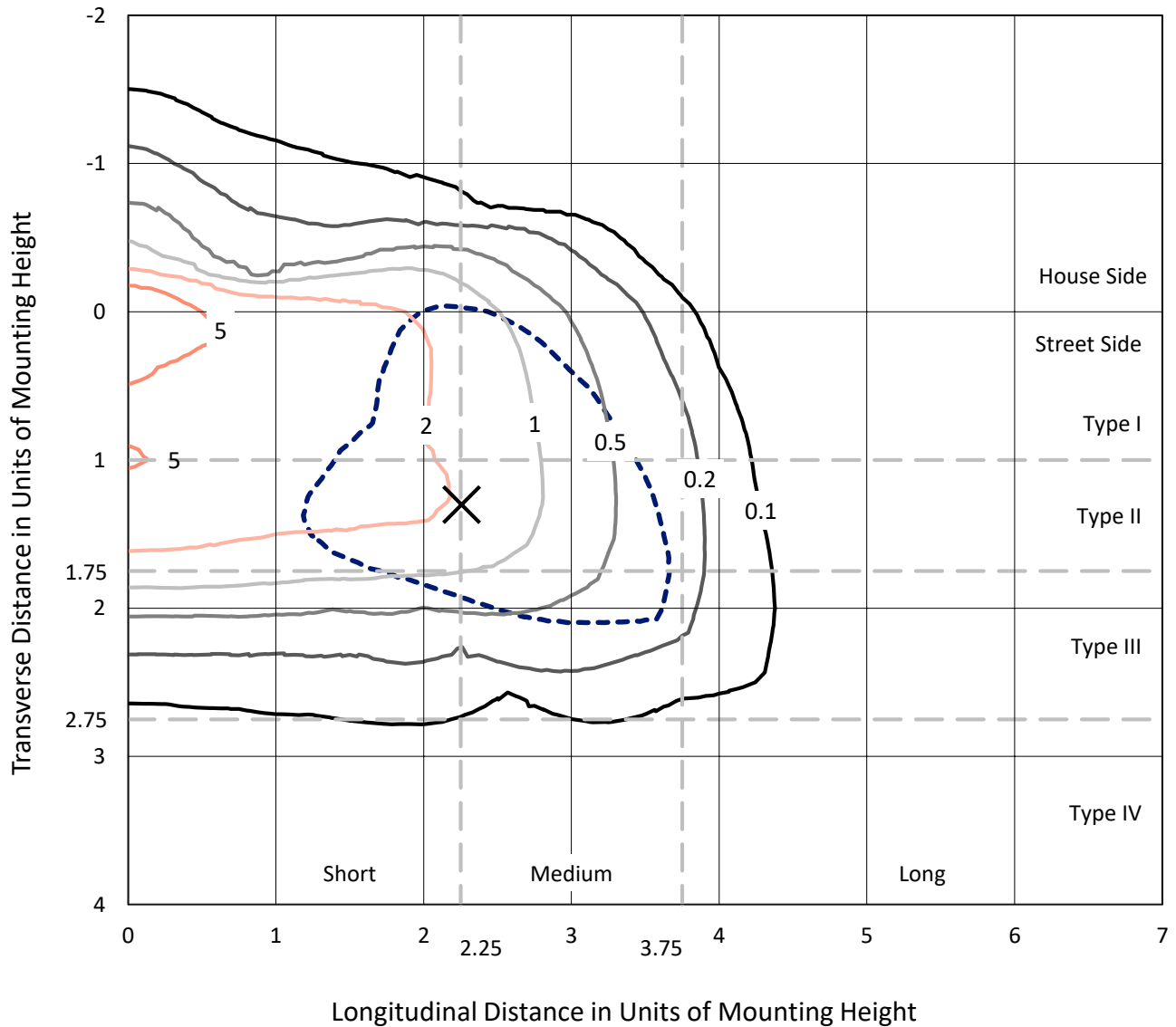
Input Watts (W): 320
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

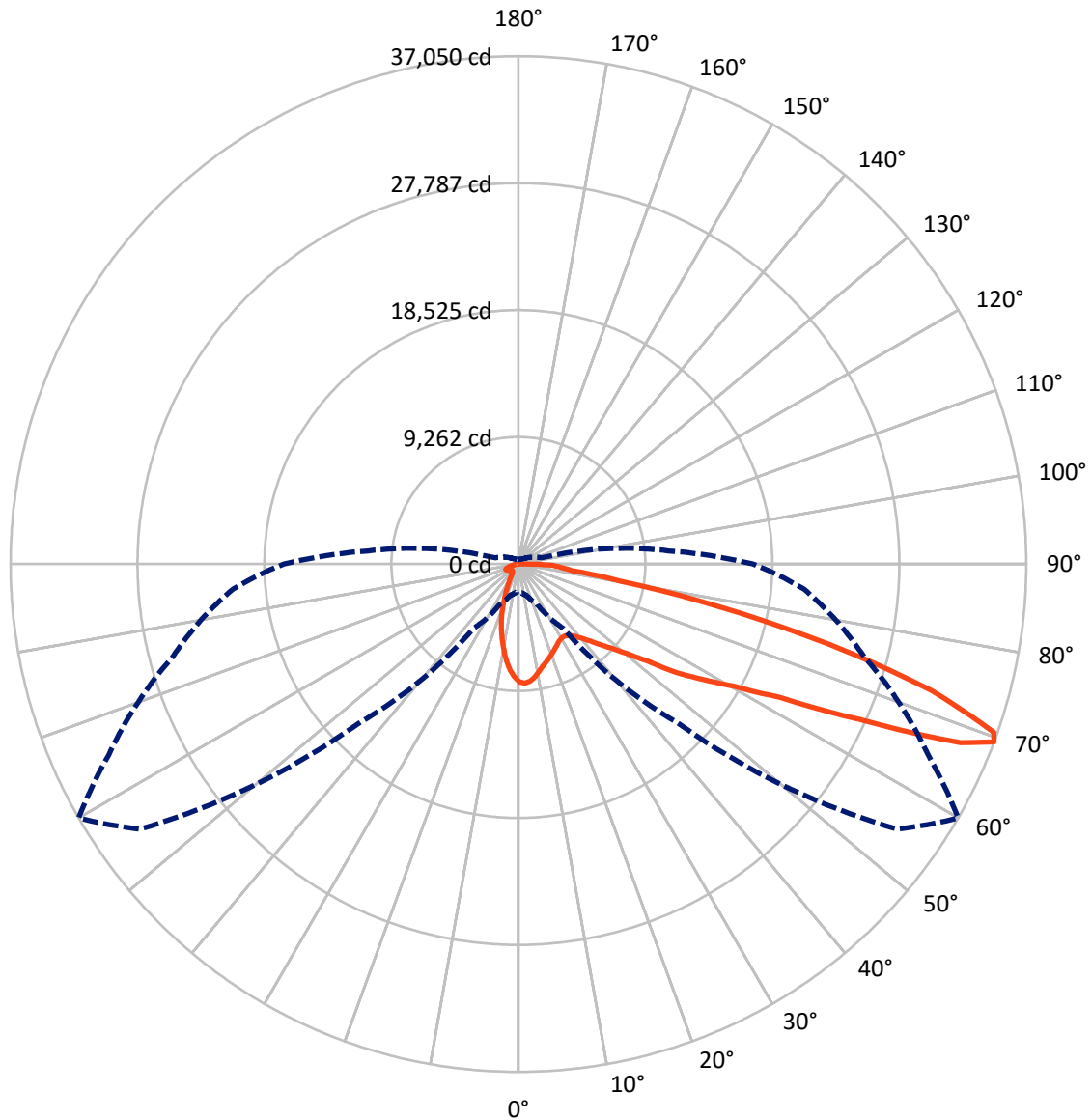
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 9.6 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	4806.6	0.0	4806.6
	% Fixture	14.3	0.0	14.3
Street Side	Lumens	28892.5	0.0	28892.5
	% Fixture	85.7	0.0	85.7
Total	Lumens	33699.1	0.0	33699.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	729.4	2.2
10°-20°	1561.8	4.6
20°-30°	1992.4	5.9
30°-40°	2741.7	8.1
40°-50°	4441.0	13.2
50°-60°	6970.0	20.7
60°-70°	9292.3	27.6
70°-80°	5168.7	15.3
80°-90°	801.6	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°	33699.1	100.0
0°-180°	33699.1	100.0

Coefficient of Utilization



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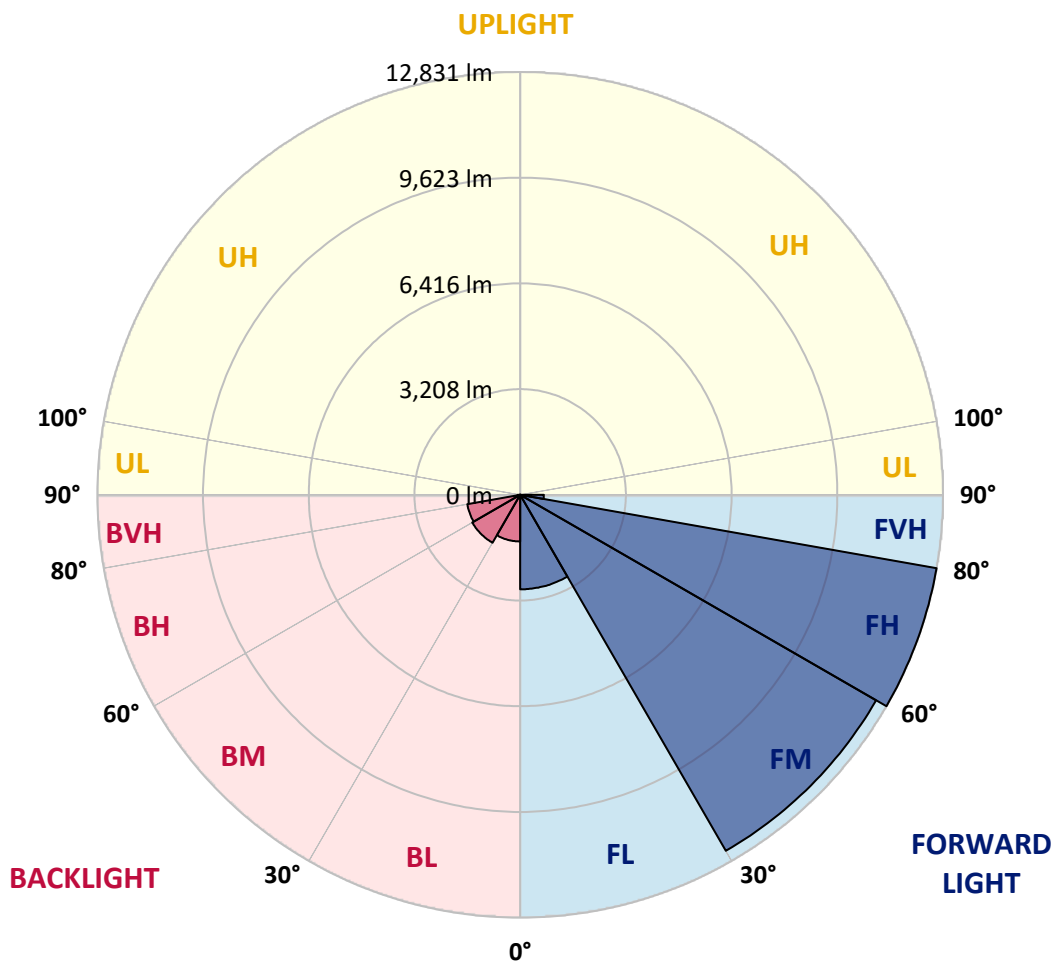
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2867.1	8.5			
FM	(30°-60°)	12473.6	37.0			
FH	(60°-80°)	12831.3	38.1			G5
FVH	(80°-90°)	720.4	2.1			G4/750
BL	(0°-30°)	1416.5	4.2	B3/2500		
BM	(30°-60°)	1679.2	5.0	B2/2500		
BH	(60°-80°)	1629.7	4.8	B3/2500		G3/2500
BVH	(80°-90°)	81.2	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-G5

Type III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	65°	75°	85°
0°	8598.4	8598.4	8598.4	8598.4	8598.4	8598.4	8598.4	8598.4	8598.4	8598.4	8598.4
2.5°	8827.5	8851.3	8851.3	8831.9	8821.0	8758.3	8721.6	8695.7	8650.3	8566.0	8490.4
5°	8512.0	8557.4	8576.8	8585.4	8641.7	8622.1	8624.4	8607.1	8568.1	8477.4	8354.2
7.5°	7932.9	7941.5	7976.0	8034.5	8170.5	8265.6	8343.4	8358.5	8349.9	8282.9	8110.1
10°	7362.4	7377.5	7418.5	7518.0	7647.6	7783.7	7952.3	8021.5	8073.3	8051.7	7833.5
12.5°	6889.1	6891.3	6936.6	7051.2	7195.9	7366.7	7595.7	7703.7	7827.0	7876.6	7632.4
15°	6433.1	6463.4	6506.6	6644.9	6824.3	7040.4	7304.0	7453.1	7615.2	7757.9	7476.8
17.5°	6087.4	6111.2	6137.1	6251.7	6459.1	6729.2	7055.5	7215.4	7429.4	7647.6	7317.0
20°	5897.2	5905.9	5886.5	5942.6	6117.7	6409.4	6787.6	6979.9	7234.8	7541.7	7152.8
22.5°	5858.3	5858.3	5787.0	5776.2	5854.0	6100.4	6511.0	6746.5	7057.6	7468.3	7005.8
25°	6039.8	6026.9	5892.9	5769.7	5741.6	5867.0	6247.3	6536.9	6906.4	7466.1	6895.6
27.5°	6383.4	6366.1	6199.8	5992.3	5812.9	5758.9	6044.2	6340.2	6787.6	7539.6	6839.4
30°	6811.3	6804.9	6636.3	6377.0	6080.9	5802.2	5964.2	6238.7	6707.6	7675.7	6837.2
32.5°	7280.2	7250.0	7146.2	6886.9	6502.3	6042.1	6011.8	6243.0	6686.0	7874.5	6886.9
35°	7779.4	7757.9	7731.9	7470.4	7038.2	6465.6	6221.4	6392.1	6791.9	8151.1	7027.4
37.5°	8414.8	8391.0	8434.2	8148.9	7675.7	7020.9	6575.7	6690.3	7007.9	8553.0	7288.9
40°	9544.9	9475.8	9354.8	8916.0	8419.1	7701.6	7087.9	7105.2	7377.5	9091.2	7708.1
42.5°	11401.2	11178.6	10580.0	9774.0	9203.5	8492.5	7755.6	7673.6	7887.5	9802.1	8317.5
45°	13261.7	13011.1	11999.7	10709.7	10016.0	9341.8	8581.1	8384.5	8522.8	10629.7	9101.9
47.5°	14463.2	14340.0	13199.1	11645.4	10867.4	10266.6	9525.5	9201.3	9300.8	11567.5	10070.0
50°	14815.5	14709.6	13812.8	12377.9	11671.3	11383.9	10694.5	10264.5	10281.8	12663.2	11230.5
52.5°	14551.9	14508.6	13914.4	12831.7	12410.3	12561.6	12313.1	11714.5	11571.9	13864.7	12488.2
55°	14199.6	14214.7	13985.7	13287.7	13162.3	13659.4	14430.9	13949.0	13343.9	15115.8	13797.7
57.5°	13091.0	13101.9	13702.6	14156.4	14597.2	15198.0	16079.7	15876.5	15172.0	16466.4	15265.0
60°	10541.1	10625.4	11963.0	13977.0	16237.4	18229.8	18445.8	18095.8	17116.9	18022.3	17173.1
62.5°	7531.0	7606.6	9155.9	12133.7	16045.1	21661.4	22815.3	21423.7	19755.4	20349.7	19857.0
65°	3956.7	3943.8	5143.1	8384.5	13514.6	22456.6	29700.1	27331.7	24200.5	23550.1	22450.1
67.5°	2210.7	2282.0	2746.5	4229.0	8808.0	19764.0	34097.6	34795.7	30380.8	26089.1	22337.8
69°	2044.3	2068.0	2379.2	3269.6	5741.6	16306.6	33719.5	37049.5	32986.9	26100.0	20898.6
70°	1986.0	2011.8	2294.9	3012.4	4823.2	13361.2	32342.9	36785.8	33620.1	25520.8	19589.0
72.5°	1780.7	1815.2	2089.7	2707.6	4064.8	6886.9	26052.4	31485.1	30454.3	22305.3	15189.3
75°	1519.2	1577.5	1992.4	2688.2	3850.8	4378.1	17374.0	23457.1	22666.2	15952.1	8617.8
77.5°	628.8	635.4	870.8	1968.7	4041.0	4190.1	9337.5	14858.7	13153.7	6995.0	2595.3
80°	438.6	430.0	434.3	574.8	3260.9	4218.1	4790.8	7556.8	5873.5	1845.4	1214.4
82.5°	369.5	365.2	382.5	360.9	1104.3	4786.5	4006.4	3939.4	2766.1	994.0	579.1
85°	244.2	237.7	313.3	328.5	525.1	3801.1	4309.0	3096.7	2061.6	531.6	246.3
87.5°	118.9	121.0	179.3	222.6	278.8	1203.6	4127.4	2448.3	1592.6	231.2	99.4
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°	8598.4	8598.4	8598.4	8598.4	8598.4	8598.4	8598.4	8598.4	8598.4	8598.4	8598.4
2.5°	8460.1	8395.3	8336.9	8263.5	8207.3	8159.8	8094.9	8092.8	8081.9	8097.1	8101.4
5°	8272.1	8164.1	7999.9	7816.2	7686.5	7515.8	7349.4	7293.2	7230.5	7224.1	7243.5
7.5°	7989.0	7820.5	7539.6	7258.7	6977.8	6690.3	6418.0	6279.7	6145.8	6104.7	6124.1
10°	7673.6	7459.6	7029.6	6571.4	6176.0	5748.2	5333.3	5065.2	4821.1	4717.3	4743.3
12.5°	7427.2	7154.9	6549.9	5955.6	5363.4	4749.8	4203.1	3673.6	3273.9	3094.5	3105.3
15°	7215.4	6867.5	6100.4	5309.4	4568.3	3727.6	2969.1	2355.4	2005.4	1875.7	1871.4
17.5°	6986.3	6565.0	5631.4	4708.7	3747.1	2707.6	1988.1	1625.1	1486.8	1443.5	1443.5
20°	6742.2	6253.8	5140.9	4054.0	2882.7	1890.8	1495.3	1354.9	1303.0	1290.0	1287.9
22.5°	6515.3	5949.1	4648.2	3356.0	2085.3	1434.9	1272.8	1218.7	1210.2	1220.9	1220.9
25°	6336.0	5681.2	4149.0	2621.2	1517.0	1201.5	1132.3	1125.9	1158.3	1197.2	1203.6
27.5°	6201.9	5441.3	3656.3	1914.6	1192.9	1045.9	1022.1	1050.3	1125.9	1203.6	1218.7
30°	6109.0	5236.0	3066.4	1376.5	994.0	916.3	927.0	976.7	1091.3	1210.2	1242.6
32.5°	6067.9	5069.6	2472.2	1056.7	849.3	806.1	834.1	899.0	1017.8	1136.7	1175.6
35°	6106.8	4948.6	1923.2	877.4	743.4	711.0	743.4	810.4	888.1	946.5	970.3
37.5°	6247.3	4905.4	1447.9	778.0	674.2	641.8	667.8	713.1	747.7	769.3	780.1
40°	6543.4	4950.8	1134.5	726.1	635.4	598.6	605.1	626.7	650.5	667.8	669.9
42.5°	7014.5	5099.8	1009.1	706.7	611.5	564.1	553.2	568.4	594.2	618.1	622.4
45°	7641.1	5348.4	996.1	713.1	600.8	535.9	514.3	529.5	564.1	602.9	609.4
47.5°	8451.5	5741.6	1056.7	747.7	607.2	520.8	488.4	503.5	548.9	600.8	609.4
50°	9410.9	6286.2	1169.0	799.5	637.5	520.8	477.6	490.5	538.1	596.4	605.1
52.5°	10541.1	7044.7	1285.7	851.4	680.7	540.2	481.9	479.8	522.9	576.9	587.8
55°	11788.0	7986.9	1398.2	896.8	704.5	566.2	492.7	466.8	501.3	544.5	553.2
57.5°	13255.3	9276.9	1594.8	940.0	717.4	585.6	505.6	453.8	473.2	503.5	509.9
60°	15245.5	11172.2	1977.3	1013.4	741.2	594.2	507.8	440.8	438.6	460.3	462.5
62.5°	17840.8	13391.4	2342.5	1099.9	788.8	596.4	499.2	432.2	410.6	417.1	417.1
65°	19686.3	14208.3	2236.6	1173.4	832.0	594.2	490.5	425.8	388.9	378.2	378.2
67.5°	18636.0	12550.8	1899.5	1192.9	836.3	570.5	471.1	410.6	369.5	343.6	343.6
69°	17093.1	11001.4	1743.9	1158.3	801.7	542.4	449.5	395.5	356.6	326.3	326.3
70°	15835.5	9828.0	1648.8	1117.2	760.7	518.6	430.0	380.3	343.6	317.6	315.5
72.5°	11822.5	6558.4	1408.9	963.8	624.5	438.6	376.0	339.3	309.0	291.7	291.7
75°	6238.7	3286.8	1154.0	786.5	481.9	350.1	309.0	285.2	267.9	265.8	263.6
77.5°	2044.3	1486.8	829.8	592.1	354.4	272.3	246.3	231.2	229.0	237.7	237.7
80°	1104.3	888.1	533.8	399.8	246.3	203.2	190.2	188.0	194.5	207.5	207.5
82.5°	535.9	438.6	317.6	246.3	168.6	149.1	149.1	151.3	159.9	175.0	175.0
85°	231.2	207.5	183.7	138.3	103.7	92.9	105.9	116.7	123.2	134.0	138.3
87.5°	110.2	97.3	84.3	54.0	45.4	47.6	56.2	69.2	82.1	90.7	92.9
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)