

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: P196028

Luminaire Tested: **NAV-AF-02-D-UNV-AFL-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196028
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24160)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-02-D-UNV-AFL-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14005.2 lumens
Efficiency: N/A
Efficacy: 108.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B2 - U0 - G2

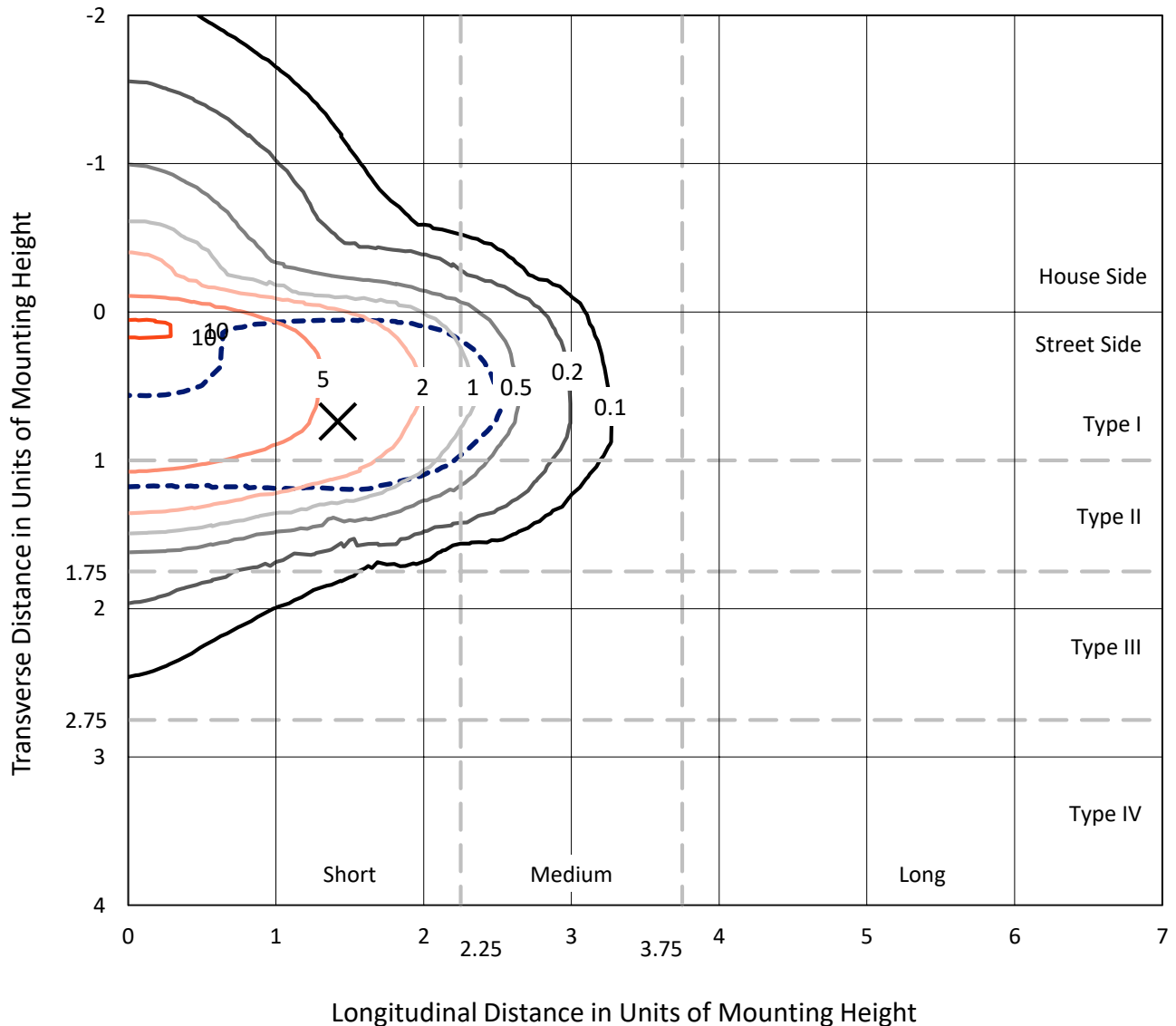
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

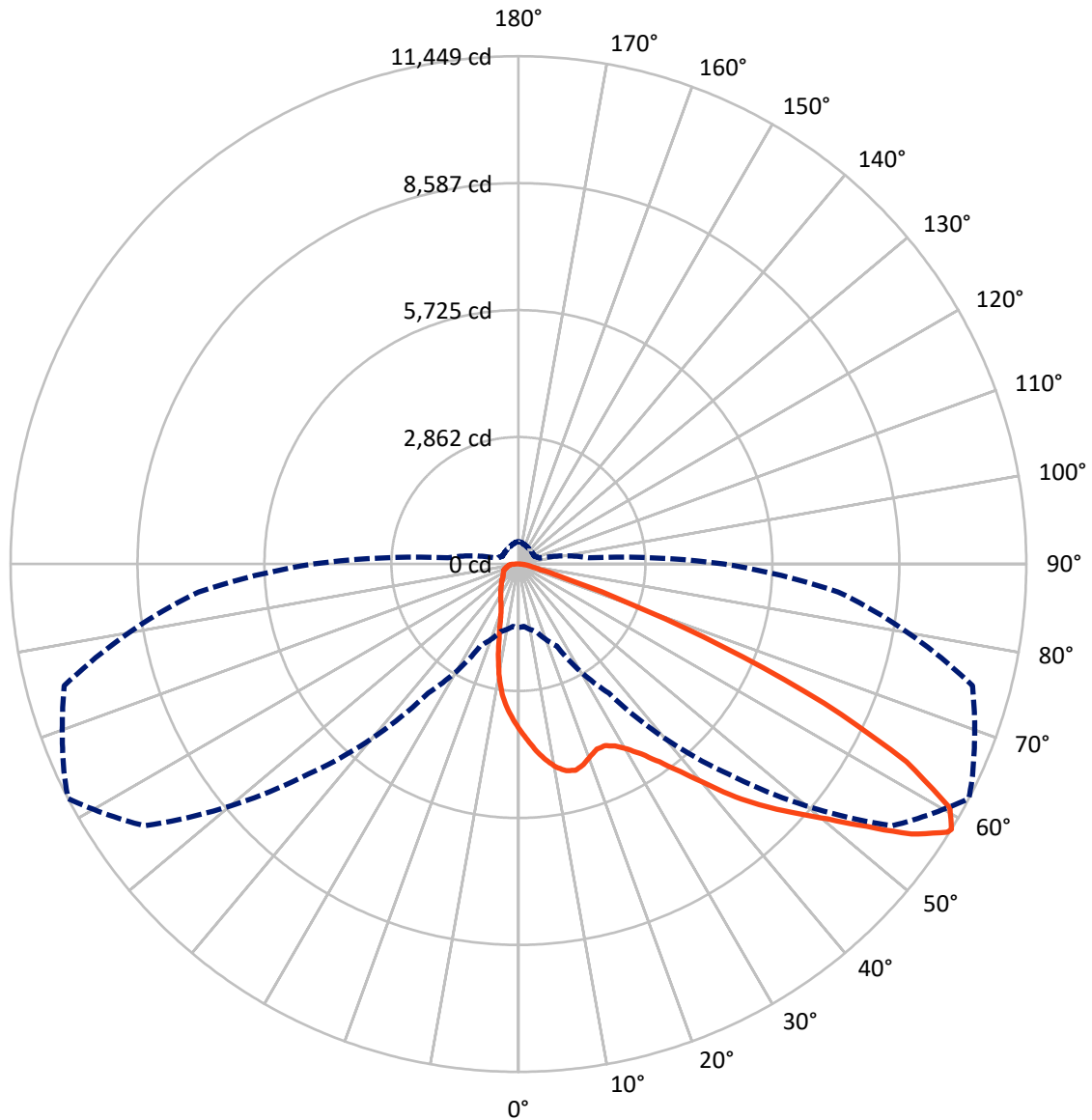
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 10.9 fc
 Type II - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 62.5-Deg Lateral - - - Horizontal Cone Through 58-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2150.3	0.0	2150.3
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	11854.9	0.0	11854.9
	% Fixture	84.6	0.0	84.6
Total	Lumens	14005.2	0.0	14005.2
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	334.2	2.4
10°-20°	843.5	6.0
20°-30°	1367.0	9.8
30°-40°	2182.6	15.6
40°-50°	3174.6	22.7
50°-60°	3321.9	23.7
60°-70°	2025.2	14.5
70°-80°	566.3	4.0
80°-90°	189.8	1.4
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°	14005.2	100.0
0°-180°	14005.2	100.0

Coefficient of Utilization



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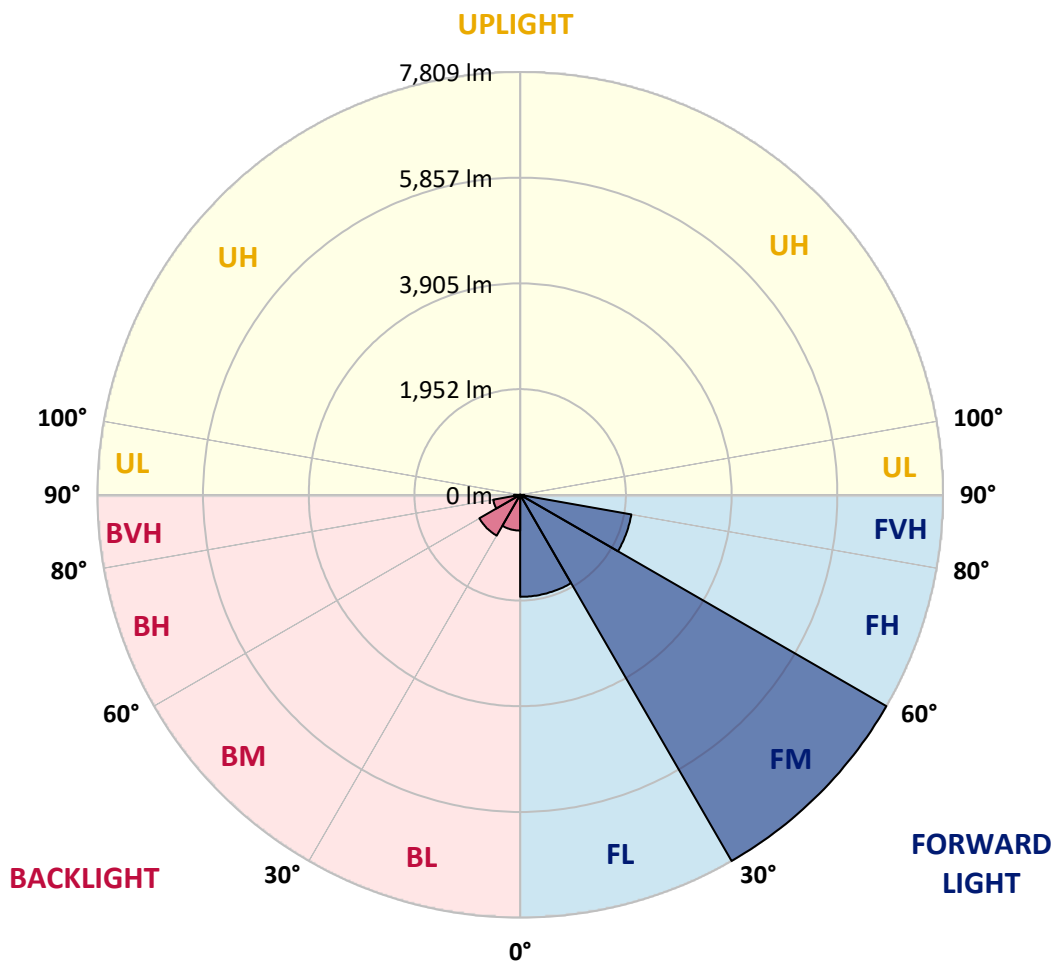
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1883.7	13.5			
FM	(30°-60°)	7809.5	55.8			
FH	(60°-80°)	2085.3	14.9			G2/5000
FVH	(80°-90°)	76.4	0.5			G1/100
BL	(0°-30°)	661.0	4.7	B2/1000		
BM	(30°-60°)	869.6	6.2	B1/1000		
BH	(60°-80°)	506.2	3.6	B2/1000		G2/1000
BVH	(80°-90°)	113.5	0.8			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	62.5°	65°	75°	85°
0°	3739.3	3739.3	3739.3	3739.3	3739.3	3739.3	3739.3	3739.3	3739.3	3739.3	3739.3
2.5°	4244.3	4241.8	4205.9	4182.2	4154.2	4089.5	4024.7	3976.5	3952.0	3858.4	3767.3
5°	4595.3	4584.9	4564.7	4539.3	4502.5	4421.2	4318.8	4230.3	4195.3	4029.0	3861.8
7.5°	4409.7	4426.4	4488.6	4558.6	4632.1	4637.3	4564.7	4459.7	4421.2	4198.8	3953.7
10°	3896.0	3889.0	3966.9	4103.5	4345.9	4585.7	4705.7	4654.0	4613.7	4359.9	4045.7
12.5°	3740.2	3738.5	3751.6	3786.6	3938.9	4268.0	4669.8	4781.8	4767.8	4530.5	4143.7
15°	3787.5	3789.2	3788.3	3792.7	3834.7	3991.3	4469.3	4824.6	4868.4	4699.5	4243.5
17.5°	3938.9	3932.7	3913.5	3892.4	3898.6	3954.6	4253.1	4751.2	4882.4	4850.0	4327.5
20°	4172.6	4172.6	4121.0	4062.2	4023.8	4036.1	4162.9	4625.1	4817.7	4977.9	4390.5
22.5°	4465.8	4470.2	4394.0	4287.3	4199.7	4166.5	4214.6	4531.5	4738.9	5096.0	4446.6
25°	4830.0	4829.0	4717.8	4564.7	4426.4	4346.7	4345.9	4535.9	4714.4	5234.3	4505.2
27.5°	5280.7	5239.6	5110.0	4892.1	4696.9	4575.2	4520.1	4646.1	4766.0	5404.1	4583.9
30°	5789.3	5747.2	5577.4	5297.4	5033.0	4855.3	4764.3	4836.9	4923.6	5620.3	4703.0
32.5°	6292.6	6302.2	6102.6	5786.6	5447.0	5196.7	5061.9	5106.6	5166.9	5884.6	4864.0
35°	7029.6	7028.7	6767.8	6373.1	5969.5	5623.0	5452.2	5475.9	5531.1	6257.6	5089.9
37.5°	7579.2	7570.6	7402.5	7053.2	6599.0	6183.1	5936.3	5939.9	5987.1	6725.8	5387.5
40°	7635.3	7633.6	7632.6	7582.7	7272.1	6879.9	6570.9	6507.0	6526.2	7223.1	5703.5
42.5°	7207.3	7271.1	7455.0	7736.8	7823.4	7617.8	7325.5	7182.8	7140.7	7793.8	6037.9
45°	6597.2	6629.5	6951.7	7585.4	8101.0	8311.1	8091.3	7790.2	7718.5	8348.6	6310.1
47.5°	6313.6	6299.5	6486.0	7176.6	8073.8	8862.4	8878.2	8384.5	8262.9	8827.5	6542.1
50°	5705.2	5686.9	5922.3	6575.3	7778.0	9136.4	9686.1	9032.2	8807.3	9282.6	6752.1
52.5°	4492.9	4475.4	4791.4	5632.6	7116.3	9034.0	10367.1	9827.1	9443.7	9721.1	6948.2
55°	2923.5	2925.2	3226.4	4093.8	5758.6	8437.1	10686.6	10745.3	10315.4	10159.6	7106.6
57.5°	1609.7	1594.8	1809.3	2342.4	3961.6	7081.2	10420.5	11406.9	11182.9	10536.1	7221.2
58°	1431.1	1413.6	1579.0	2038.5	3552.0	6698.7	10286.6	11449.0	11294.1	10598.2	7237.9
60°	1019.8	990.0	964.5	1149.3	2046.4	4830.0	9393.8	11176.8	11326.4	10722.5	7222.1
62.5°	859.6	825.4	734.4	727.4	963.7	2362.4	7428.7	9815.6	10234.9	10436.2	6968.3
65°	798.3	764.1	644.3	601.3	653.9	1019.8	4593.6	7579.2	8139.4	9441.0	6329.3
67.5°	754.5	714.2	585.5	529.6	540.0	610.1	1949.3	4956.8	5606.3	7362.2	5077.6
70°	715.1	670.4	539.2	474.4	465.6	463.9	761.5	2588.3	3214.1	4817.7	3401.4
72.5°	670.4	626.8	498.1	428.9	409.7	376.3	457.8	1069.6	1466.1	2361.6	1558.9
75°	605.7	569.8	452.6	391.3	358.0	305.5	337.9	512.9	632.0	904.2	723.8
77.5°	533.1	504.2	406.1	359.8	315.1	249.5	258.2	347.5	390.4	509.4	419.3
80°	377.3	387.8	354.5	316.9	277.4	201.3	198.7	254.7	280.1	342.3	281.8
82.5°	259.9	267.8	288.9	250.3	224.1	156.7	146.2	176.8	190.0	206.5	136.6
85°	185.6	180.3	200.4	179.4	164.6	99.7	93.7	112.0	119.9	126.0	65.7
87.5°	112.9	112.0	115.5	92.8	85.8	50.7	46.4	53.4	56.9	55.1	31.5
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°	3739.3	3739.3	3739.3	3739.3	3739.3	3739.3	3739.3	3739.3	3739.3	3739.3	3739.3
2.5°	3733.2	3690.3	3596.6	3521.3	3440.0	3377.8	3315.7	3280.6	3242.1	3220.2	3217.6
5°	3774.3	3686.8	3487.2	3301.7	3110.8	2939.2	2771.2	2646.9	2545.4	2487.6	2484.1
7.5°	3819.8	3682.4	3374.3	3053.1	2713.5	2375.6	2077.1	1866.2	1730.5	1667.4	1663.1
10°	3854.9	3664.0	3236.9	2737.1	2198.7	1752.3	1481.0	1356.7	1315.6	1305.1	1303.3
12.5°	3896.8	3650.9	3063.5	2331.8	1680.6	1333.9	1251.7	1243.8	1252.6	1257.8	1258.6
15°	3936.2	3625.5	2829.9	1882.7	1315.6	1192.1	1193.9	1210.6	1228.1	1235.9	1236.8
17.5°	3954.6	3563.3	2522.6	1483.7	1151.0	1128.3	1148.4	1170.3	1186.0	1192.1	1192.1
20°	3954.6	3463.6	2166.4	1201.8	1065.2	1069.6	1094.1	1110.7	1114.3	1109.0	1106.4
22.5°	3938.0	3340.1	1819.7	1048.6	995.2	1011.9	1031.1	1019.8	978.6	947.0	940.9
25°	3923.1	3194.0	1486.2	954.9	934.0	955.8	948.0	870.0	807.0	774.7	769.4
27.5°	3898.6	3017.2	1207.9	877.9	874.4	891.9	814.1	738.8	707.3	689.8	686.2
30°	3892.4	2825.5	1011.0	809.7	815.8	791.3	701.9	677.5	670.4	660.8	656.4
32.5°	3912.6	2633.8	887.5	753.6	759.7	679.2	645.1	648.6	647.7	635.5	631.1
35°	3967.7	2447.3	808.7	702.9	685.4	608.3	612.7	623.2	623.2	608.3	603.1
37.5°	4064.1	2274.0	758.9	660.0	599.6	571.6	583.0	597.0	597.0	586.5	582.1
40°	4166.5	2105.1	721.3	625.8	545.3	546.2	557.6	568.0	572.4	574.2	570.7
42.5°	4259.3	1930.0	681.0	589.1	520.8	526.9	532.1	540.0	558.4	570.7	569.0
45°	4313.5	1754.2	637.2	543.6	504.2	506.8	505.0	519.0	540.9	559.3	559.3
47.5°	4363.4	1609.7	601.3	498.1	487.5	487.5	482.3	496.3	516.4	538.3	540.0
50°	4410.7	1516.0	575.9	463.0	466.6	463.9	462.2	475.3	502.5	528.7	533.1
52.5°	4458.8	1484.5	553.2	437.6	444.7	441.2	442.9	461.2	491.9	519.0	523.4
55°	4526.3	1504.7	529.6	420.1	423.6	422.8	429.7	450.8	477.9	505.0	506.8
57.5°	4609.3	1578.2	509.4	407.0	403.6	408.8	420.1	440.3	466.6	498.9	501.6
58°	4626.0	1595.7	506.0	403.6	399.2	407.0	418.4	437.6	464.8	498.9	501.6
60°	4651.4	1657.8	497.2	396.5	384.2	398.2	412.2	431.5	461.2	503.3	508.5
62.5°	4528.8	1670.1	494.6	388.6	368.5	386.0	402.6	424.5	457.8	518.2	529.6
65°	4104.3	1544.0	476.2	375.5	355.4	376.3	393.8	419.3	468.3	562.8	568.0
67.5°	3294.6	1282.4	431.5	355.4	340.5	365.0	386.9	419.3	472.7	569.8	573.4
70°	2265.3	963.7	375.5	333.5	322.9	351.0	384.2	428.9	457.8	539.2	528.7
72.5°	1183.5	670.4	329.1	308.1	302.0	338.7	409.7	419.3	440.3	503.3	492.8
75°	596.1	456.0	289.7	279.3	278.3	334.4	458.7	403.6	421.9	473.5	496.3
77.5°	351.9	357.1	258.2	252.1	256.5	326.5	459.5	387.8	400.9	435.9	460.4
80°	240.7	295.0	233.7	232.0	235.5	300.2	423.6	368.5	376.3	412.2	438.5
82.5°	135.6	162.9	204.8	216.1	214.4	245.9	365.9	335.2	344.8	487.5	515.6
85°	65.7	98.0	171.5	202.2	182.9	163.7	297.6	297.6	300.2	349.2	353.6
87.5°	24.6	43.8	115.5	160.2	127.8	98.0	202.2	210.9	234.6	241.6	246.8
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)