

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: P196816

Luminaire Tested: **NAV-AF-04-D-UNV-T3R-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196816
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24250)
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-T3R-7030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 23999.9 lumens
Efficiency: N/A
Efficacy: 106.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Medium - Full Cutoff
BUG Rating: B3 - U0 - G4

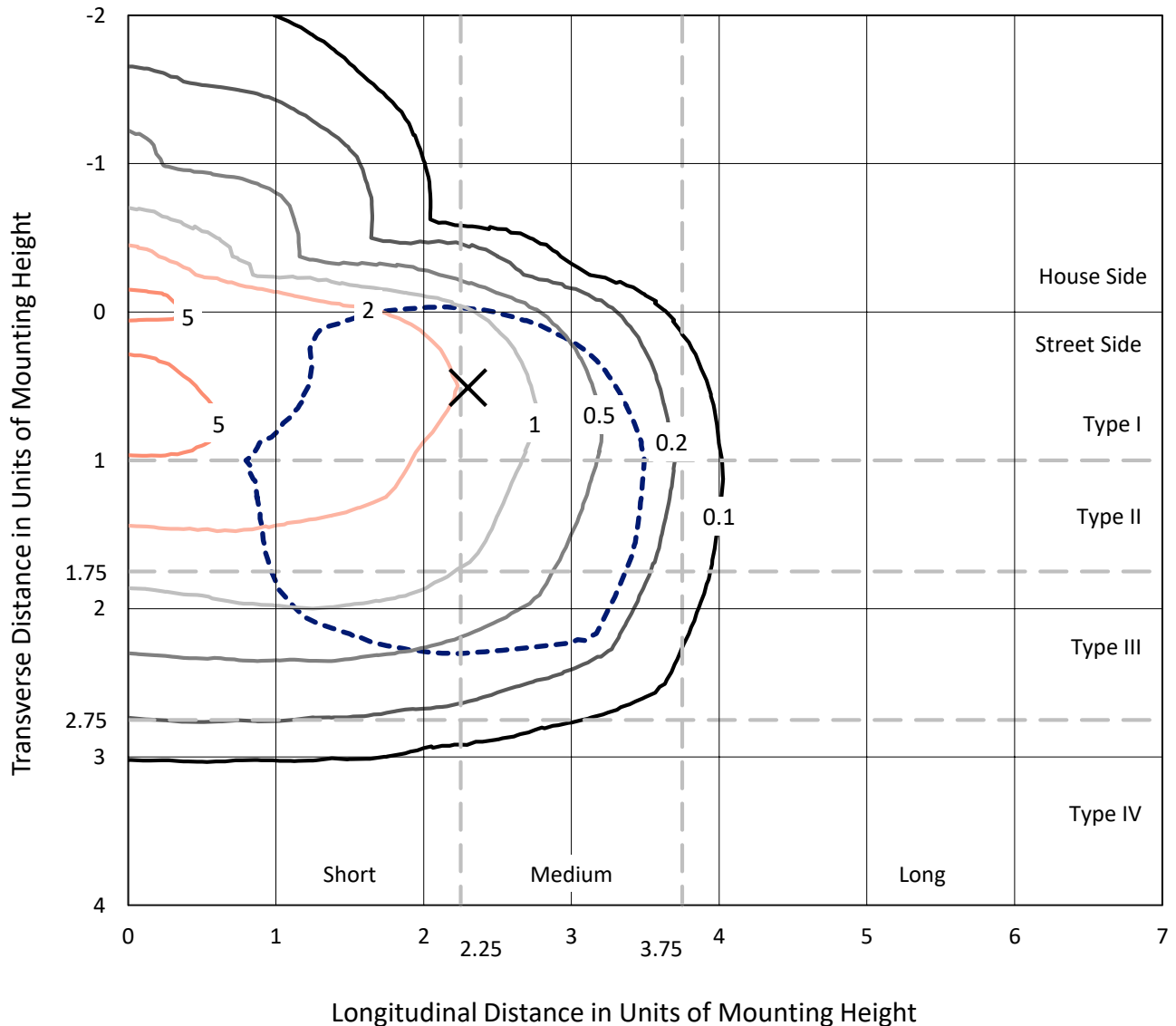
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

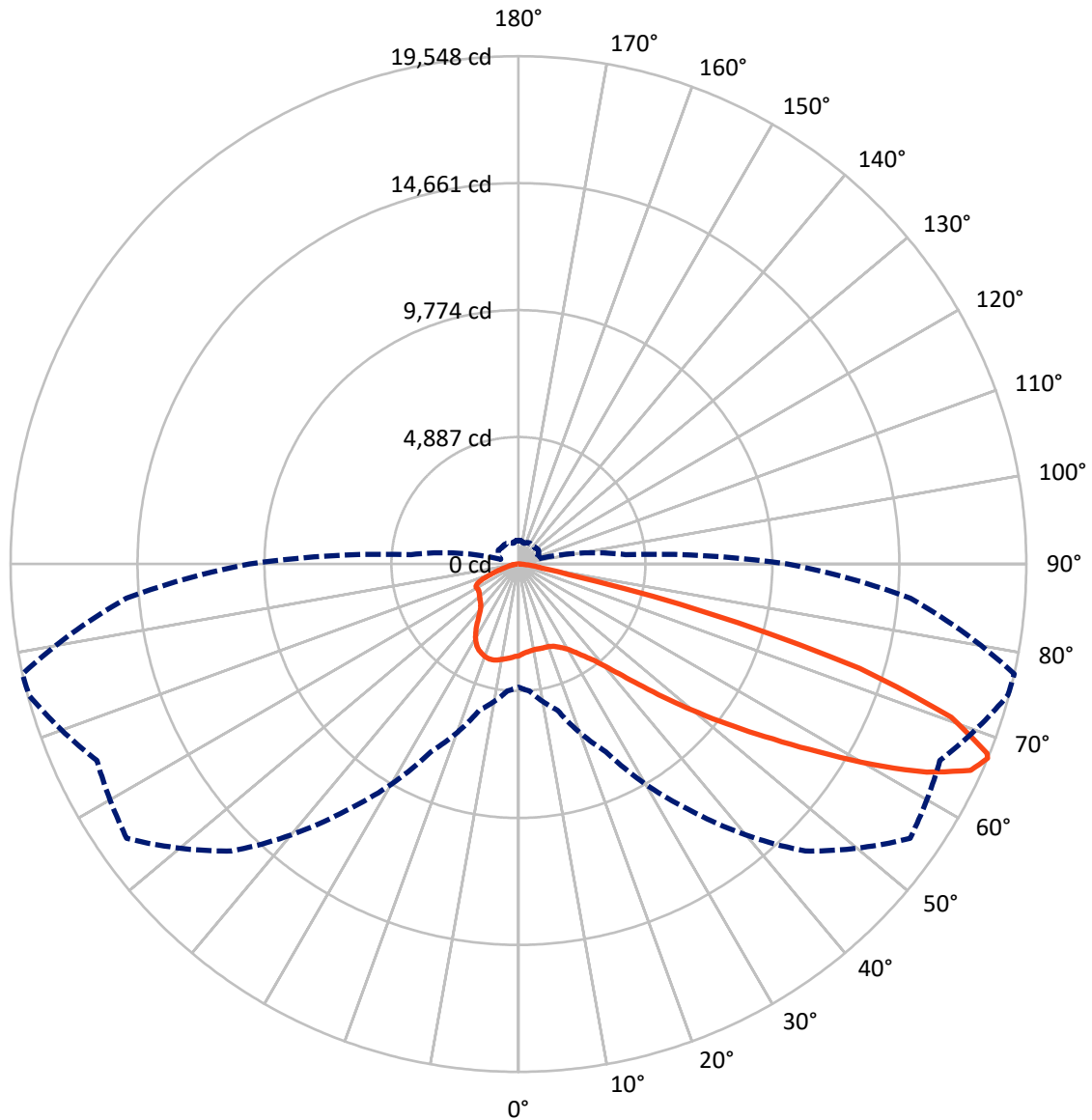
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.8 fc
 Type III - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	4124.4	0.0	4124.4
	% Fixture	17.2	0.0	17.2
Street Side	Lumens	19875.5	0.0	19875.5
	% Fixture	82.8	0.0	82.8
Total	Lumens	23999.9	0.0	23999.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	314.6	1.3
10°-20°	871.2	3.6
20°-30°	1480.3	6.2
30°-40°	2368.1	9.9
40°-50°	3645.7	15.2
50°-60°	5058.0	21.1
60°-70°	6747.1	28.1
70°-80°	3210.9	13.4
80°-90°	304.0	1.3
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°	23999.9	100.0
0°-180°	23999.9	100.0



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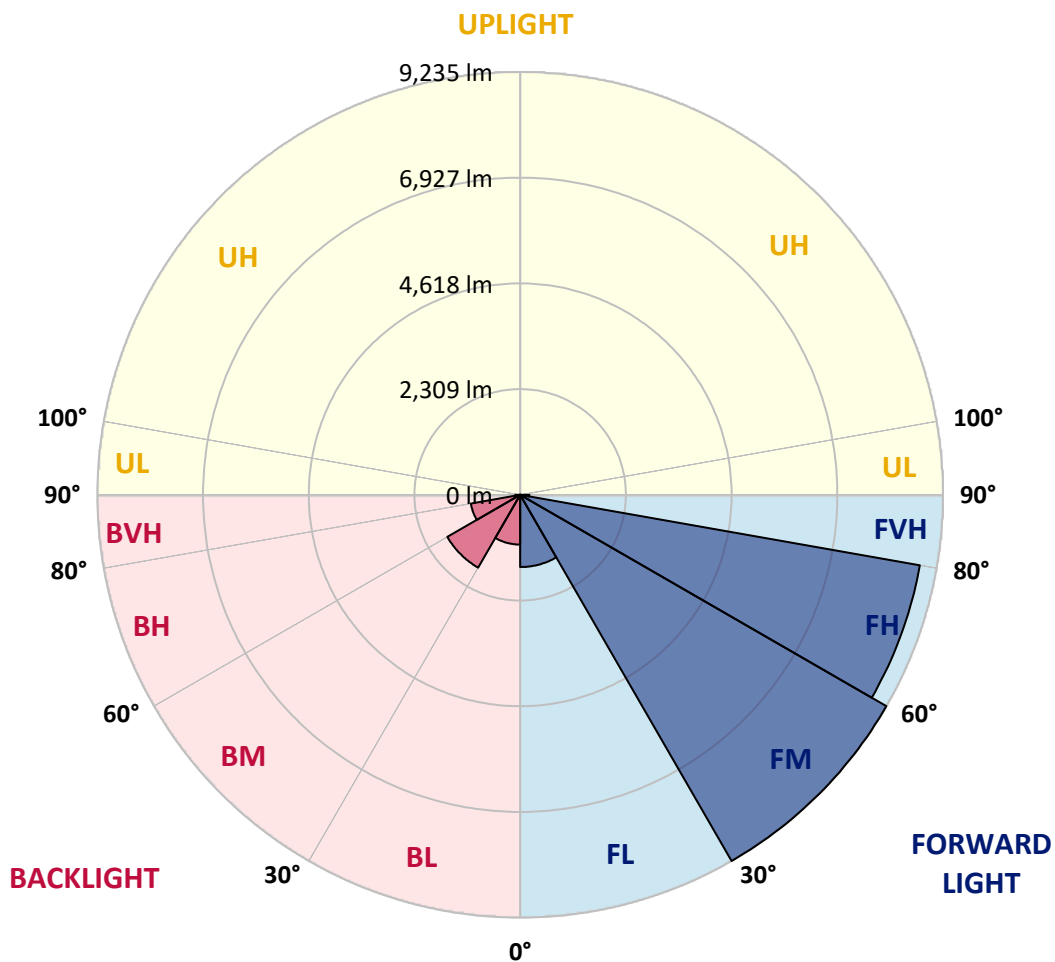
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1578.2	6.6			
FM	(30°-60°)	9235.4	38.5			
FH	(60°-80°)	8864.4	36.9			G4/12000
FVH	(80°-90°)	197.5	0.8			G2/225
BL	(0°-30°)	1087.8	4.5	B3/2500		
BM	(30°-60°)	1836.4	7.7	B2/2500		
BH	(60°-80°)	1093.6	4.6	B3/2500		G3/2500
BVH	(80°-90°)	106.6	0.4			G2/225
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°	65°	75°	77.5°	85°
0°	3532.2	3532.2	3532.2	3532.2	3532.2	3532.2	3532.2	3532.2	3532.2	3532.2	3532.2
2.5°	3167.2	3182.0	3183.5	3226.5	3245.9	3294.8	3348.2	3395.7	3437.2	3452.0	3478.7
5°	2849.8	2849.8	2854.2	2882.4	2937.3	3015.9	3127.2	3248.9	3376.4	3407.6	3486.1
7.5°	2683.6	2686.5	2689.5	2717.8	2760.8	2830.5	2941.7	3107.9	3320.1	3372.0	3510.0
10°	2698.4	2694.0	2679.1	2673.2	2691.0	2735.6	2832.0	3002.6	3272.6	3352.6	3552.9
12.5°	2931.3	2922.4	2873.5	2802.3	2737.1	2720.7	2787.4	2949.1	3250.3	3352.6	3625.7
15°	3330.4	3336.3	3239.9	3091.6	2920.9	2805.2	2796.4	2929.9	3243.0	3361.6	3710.1
17.5°	3849.6	3852.6	3719.0	3504.0	3220.6	2981.8	2857.1	2929.9	3243.0	3370.4	3791.8
20°	4401.5	4380.8	4229.4	3959.4	3591.5	3226.5	2968.5	2947.7	3251.8	3383.8	3868.9
22.5°	4874.7	4855.4	4696.7	4413.3	3992.0	3515.9	3118.3	3007.1	3300.7	3438.7	3977.1
25°	5288.5	5300.5	5146.2	4827.2	4391.1	3842.2	3342.2	3143.5	3403.1	3538.1	4110.7
27.5°	5791.5	5769.2	5591.3	5287.0	4802.1	4180.5	3622.6	3315.6	3524.7	3658.2	4273.9
30°	6373.0	6362.6	6122.4	5809.4	5254.5	4558.8	3900.0	3501.0	3683.4	3822.9	4478.6
32.5°	7079.1	7077.7	6819.5	6435.3	5763.3	4985.9	4227.9	3754.7	3914.9	4055.8	4750.0
35°	7878.6	7877.3	7610.2	7102.8	6349.3	5459.1	4613.6	4063.3	4201.2	4349.5	5073.5
37.5°	8433.5	8424.7	8285.2	7792.7	6997.5	6009.6	5095.8	4478.6	4526.1	4692.2	5463.6
40°	8540.4	8593.8	8714.0	8423.2	7705.2	6620.8	5579.4	4925.2	4969.6	5183.3	5954.6
42.5°	8424.7	8494.4	8893.3	8975.0	8412.8	7361.1	6184.6	5543.7	5600.1	5865.7	6531.7
45°	8323.8	8384.5	8884.5	9280.6	9111.4	8168.0	6939.7	6298.8	6405.7	6735.0	7190.4
47.5°	8151.8	8208.1	8709.5	9335.5	9510.6	8945.4	7849.0	7206.7	7390.7	7789.7	7941.1
50°	8142.8	8168.0	8470.7	9151.5	9648.4	9535.8	8856.3	8268.8	8550.7	9010.6	8771.8
52.5°	7917.3	8093.8	8368.2	8857.8	9651.5	9880.0	9848.7	9433.5	9868.1	10376.9	9682.7
55°	6537.6	6740.9	8027.1	8714.0	9633.7	10175.2	10755.2	10672.1	11351.6	11887.1	10703.2
57.5°	6104.6	6190.5	7042.1	8756.9	9782.0	10663.2	11661.6	12002.7	13048.7	13633.2	11927.2
60°	5985.8	6076.4	6844.8	8777.7	10184.0	11551.8	12891.4	13505.5	15043.9	15664.1	13317.2
62.5°	5853.8	5971.0	6859.7	8797.0	10890.2	12866.2	14523.2	15135.9	17092.6	17645.9	14619.7
65°	5468.1	5623.9	6585.2	8675.4	11663.1	14515.7	16680.2	16836.0	18785.3	19136.9	15405.9
67°	4736.7	4907.4	5831.5	7972.2	11591.9	15627.0	18405.5	17899.6	19504.8	19547.8	15150.8
67.5°	4505.3	4681.9	5576.4	7680.0	11388.6	15772.3	18711.0	18046.5	19498.9	19451.3	14913.4
70°	3033.7	3232.6	3948.9	5638.7	9135.2	14679.0	18636.9	17594.0	18220.1	17675.6	12812.8
72.5°	1505.7	1511.7	1970.1	3088.5	5534.8	10528.2	15546.8	15051.3	14769.4	13741.4	9402.3
75°	725.4	738.8	930.2	1364.7	2333.6	5435.4	10602.4	10155.8	8647.3	7487.1	4705.6
77.5°	553.3	566.7	722.4	888.6	973.2	1772.7	5251.5	4244.1	2505.7	2001.2	1326.2
80°	427.2	452.5	609.6	682.5	643.9	710.6	1651.1	1299.5	974.6	894.5	657.2
82.5°	333.8	348.6	517.8	517.8	445.0	476.2	768.4	750.6	605.3	546.0	353.0
85°	235.9	265.5	416.9	385.6	292.3	295.2	459.9	440.7	311.5	250.7	138.0
87.5°	105.3	135.1	296.7	252.2	155.8	120.1	188.4	161.7	123.1	94.9	63.8
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°	3532.2	3532.2	3532.2	3532.2	3532.2	3532.2	3532.2	3532.2	3532.2	3532.2	3532.2
2.5°	3508.5	3532.2	3569.3	3591.5	3621.2	3633.0	3644.9	3665.6	3682.0	3677.5	3670.1
5°	3541.1	3581.1	3627.1	3641.9	3641.9	3627.1	3618.2	3619.6	3615.3	3612.2	3603.4
7.5°	3588.5	3643.4	3676.0	3661.2	3615.3	3557.4	3502.6	3469.8	3438.7	3419.4	3425.4
10°	3655.3	3716.1	3717.5	3652.3	3542.5	3416.4	3308.2	3238.5	3171.7	3142.0	3150.9
12.5°	3751.8	3812.5	3760.6	3619.6	3426.8	3229.4	3030.8	2886.8	2757.8	2726.7	2717.8
15°	3855.5	3903.1	3787.4	3550.0	3260.7	2935.8	2602.0	2386.9	2243.0	2217.8	2208.9
17.5°	3946.0	3972.7	3774.0	3425.4	2998.1	2486.3	2097.7	1952.3	1922.6	1937.3	1937.3
20°	4026.2	4017.3	3716.1	3232.6	2584.2	1987.9	1762.4	1760.9	1800.9	1838.1	1841.0
22.5°	4127.0	4057.4	3624.1	2946.1	2090.2	1658.5	1620.0	1658.5	1703.1	1744.6	1749.0
25°	4247.2	4101.8	3501.0	2538.2	1680.7	1505.7	1522.1	1554.6	1582.8	1615.5	1617.0
27.5°	4367.3	4135.9	3327.4	2059.1	1458.3	1407.8	1425.7	1439.0	1446.4	1467.2	1467.2
30°	4506.8	4162.7	3076.7	1649.6	1355.9	1321.8	1311.4	1305.4	1311.4	1339.6	1341.0
32.5°	4681.9	4210.1	2734.0	1415.2	1308.4	1261.0	1207.6	1178.0	1198.7	1249.1	1258.0
35°	4880.6	4266.5	2323.1	1321.8	1292.1	1231.3	1133.3	1087.3	1094.8	1140.7	1148.2
37.5°	5129.8	4339.1	1918.1	1299.5	1308.4	1228.3	1099.2	1034.0	1001.4	1002.8	1001.4
40°	5448.8	4411.9	1597.7	1305.4	1344.0	1235.7	1083.0	980.6	912.4	915.3	921.3
42.5°	5782.5	4459.3	1394.4	1323.2	1387.0	1246.1	1077.0	928.7	869.2	919.8	965.8
45°	6172.7	4446.0	1289.1	1339.6	1419.8	1250.6	1054.8	922.7	873.7	1025.1	1111.1
47.5°	6620.8	4388.1	1229.8	1346.9	1428.6	1249.1	1038.4	942.1	910.9	1173.5	1271.3
50°	7107.4	4297.6	1182.3	1335.1	1424.0	1243.2	1056.2	965.8	925.7	1206.1	1281.7
52.5°	7639.9	4214.5	1133.3	1308.4	1401.9	1225.4	1078.5	955.4	884.1	1111.1	1169.0
55°	8270.4	4195.2	1078.5	1262.5	1364.7	1206.1	1066.6	922.7	838.1	985.1	1020.6
57.5°	8991.4	4315.4	1007.3	1206.1	1314.4	1167.6	1038.4	904.8	821.8	896.0	915.3
60°	9906.6	4581.0	931.7	1146.6	1252.0	1109.6	1013.2	909.4	826.3	882.7	887.0
62.5°	10621.6	4819.9	863.3	1074.0	1169.0	1039.9	986.5	913.9	839.6	900.6	893.0
65°	10881.2	4702.6	778.8	965.8	1051.7	962.8	949.5	916.8	839.6	910.9	894.5
67°	10348.7	4143.3	698.7	857.4	940.5	894.5	913.9	904.8	824.8	909.4	881.1
67.5°	10095.0	3946.0	678.0	839.6	910.9	873.7	904.8	898.9	820.3	906.5	873.7
70°	8325.2	2830.5	572.6	704.6	762.5	769.9	850.0	860.4	784.8	851.5	792.1
72.5°	5923.5	1771.3	494.0	546.0	615.6	658.7	775.8	808.5	737.3	740.2	691.3
75°	2931.3	950.9	440.7	421.3	479.2	548.9	676.5	737.3	667.6	617.1	600.8
77.5°	989.5	538.5	372.3	339.7	372.3	440.7	560.7	643.9	588.9	522.1	511.8
80°	511.8	391.5	290.7	272.9	293.7	341.2	439.1	535.6	502.9	505.9	416.9
82.5°	318.9	238.8	209.1	207.7	222.6	261.1	323.4	434.7	431.7	369.4	268.6
85°	148.4	138.0	133.6	138.0	142.4	148.4	210.7	310.1	327.9	198.8	176.6
87.5°	62.3	60.8	53.4	57.9	63.8	62.3	84.5	131.9	184.0	124.7	114.1
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)