

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: P196390

Luminaire Tested: **NAV-AF-04-D-UNV-T4W-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196390
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24127)
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-T4W-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 27055 lumens
Efficiency: N/A
Efficacy: 104.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G4

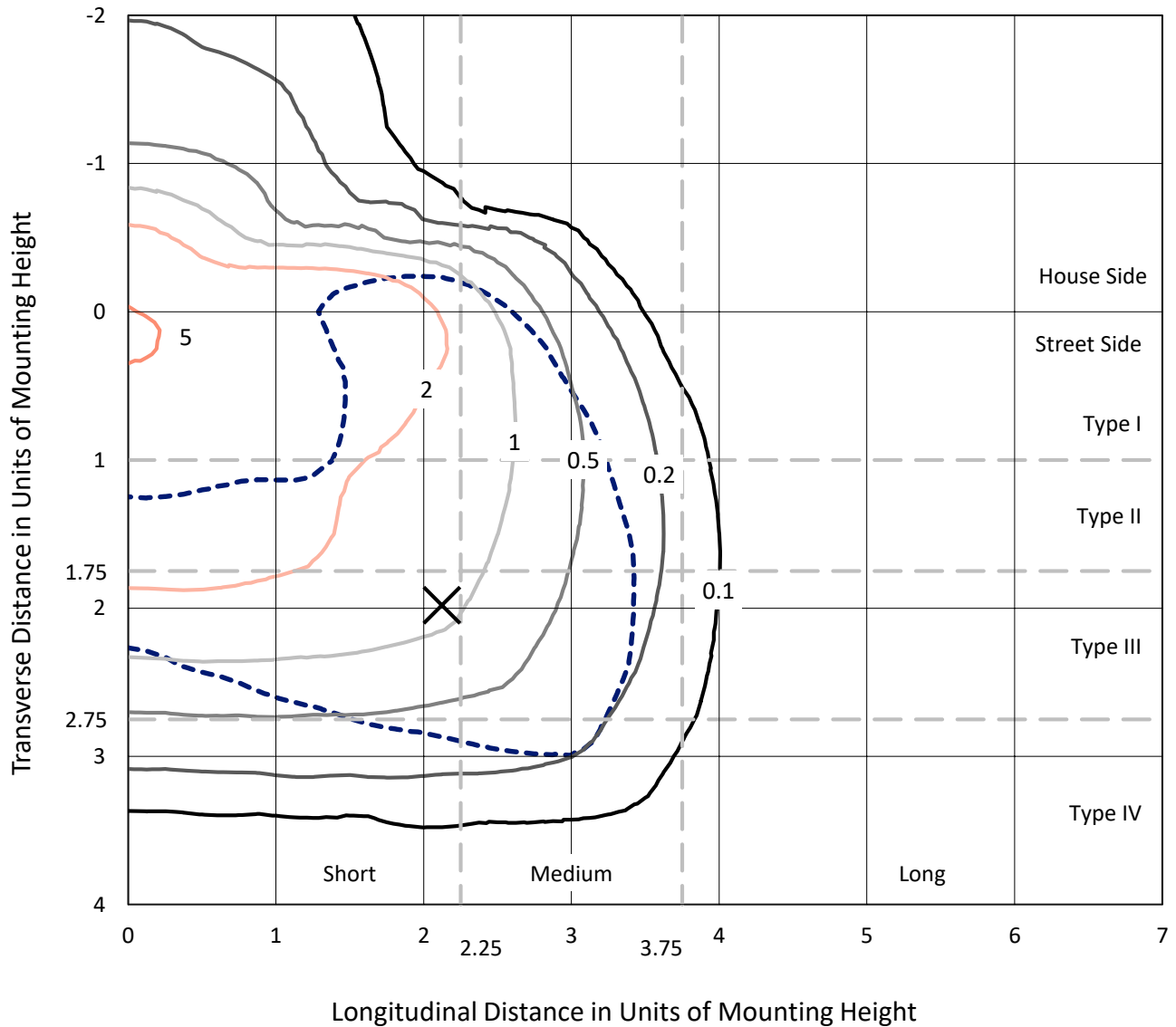
Input Watts (W): 258
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

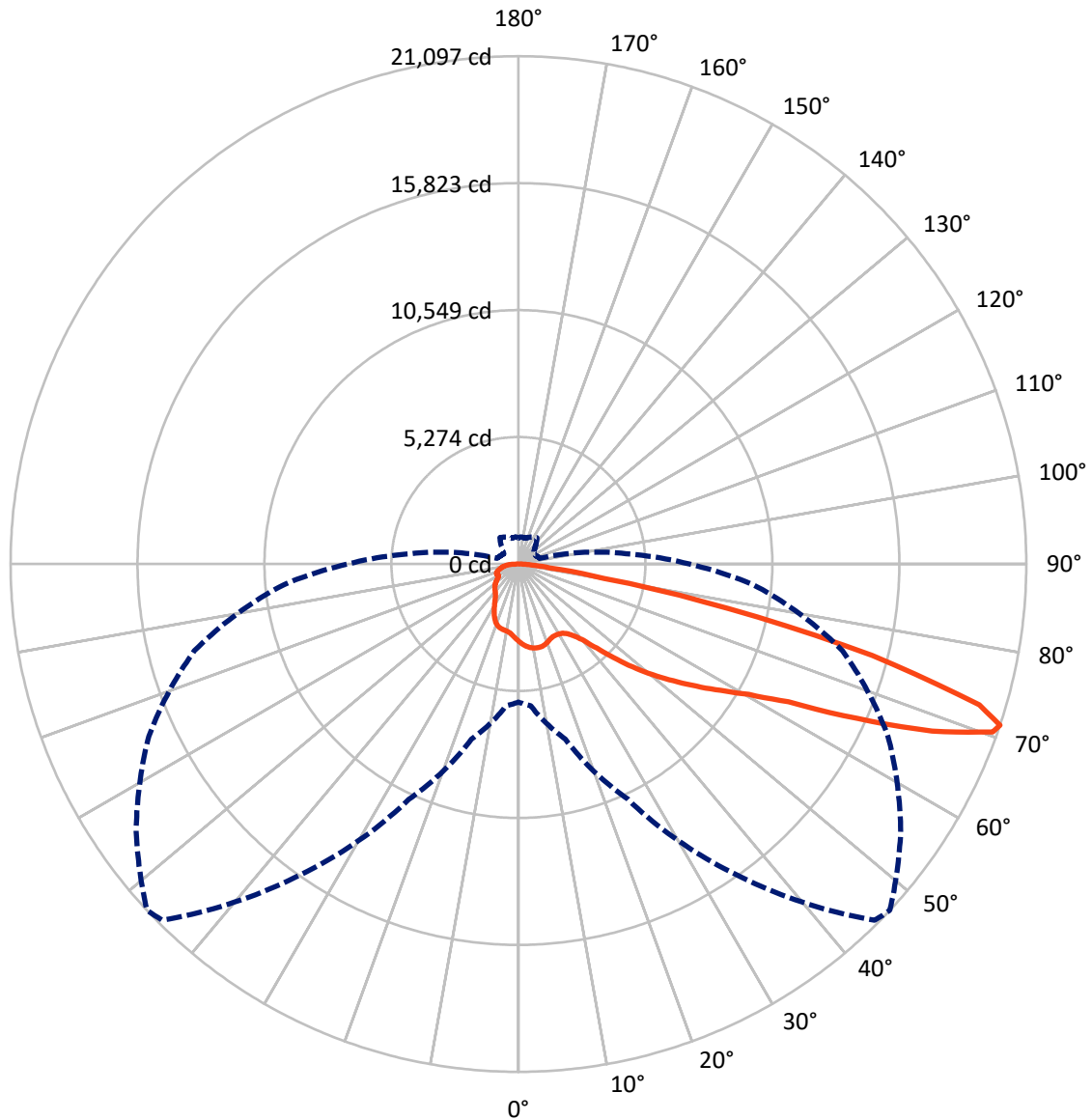
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.9 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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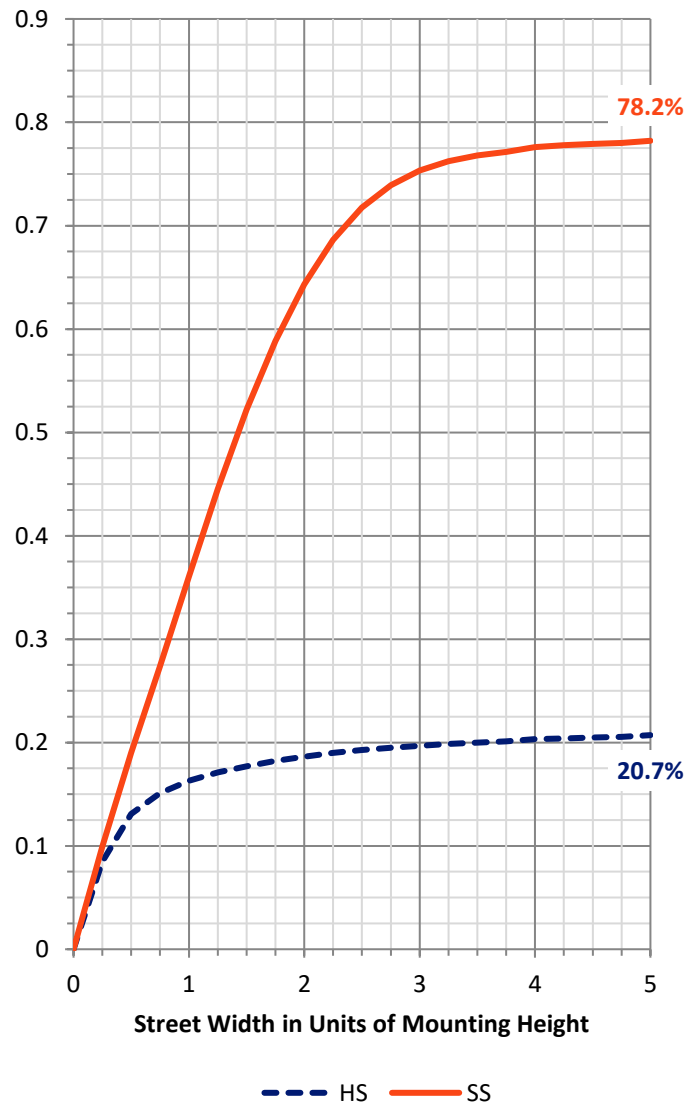
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5798.3	0.0	5798.3
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	21256.7	0.0	21256.7
	% Fixture	78.6	0.0	78.6
Total	Lumens	27055.0	0.0	27055.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	307.2	1.1
10°-20°	898.7	3.3
20°-30°	1335.4	4.9
30°-40°	1917.5	7.1
40°-50°	3399.7	12.6
50°-60°	5817.4	21.5
60°-70°	8258.8	30.5
70°-80°	4523.2	16.7
80°-90°	597.1	2.2
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°	27055.0	100.0
0°-180°	27055.0	100.0



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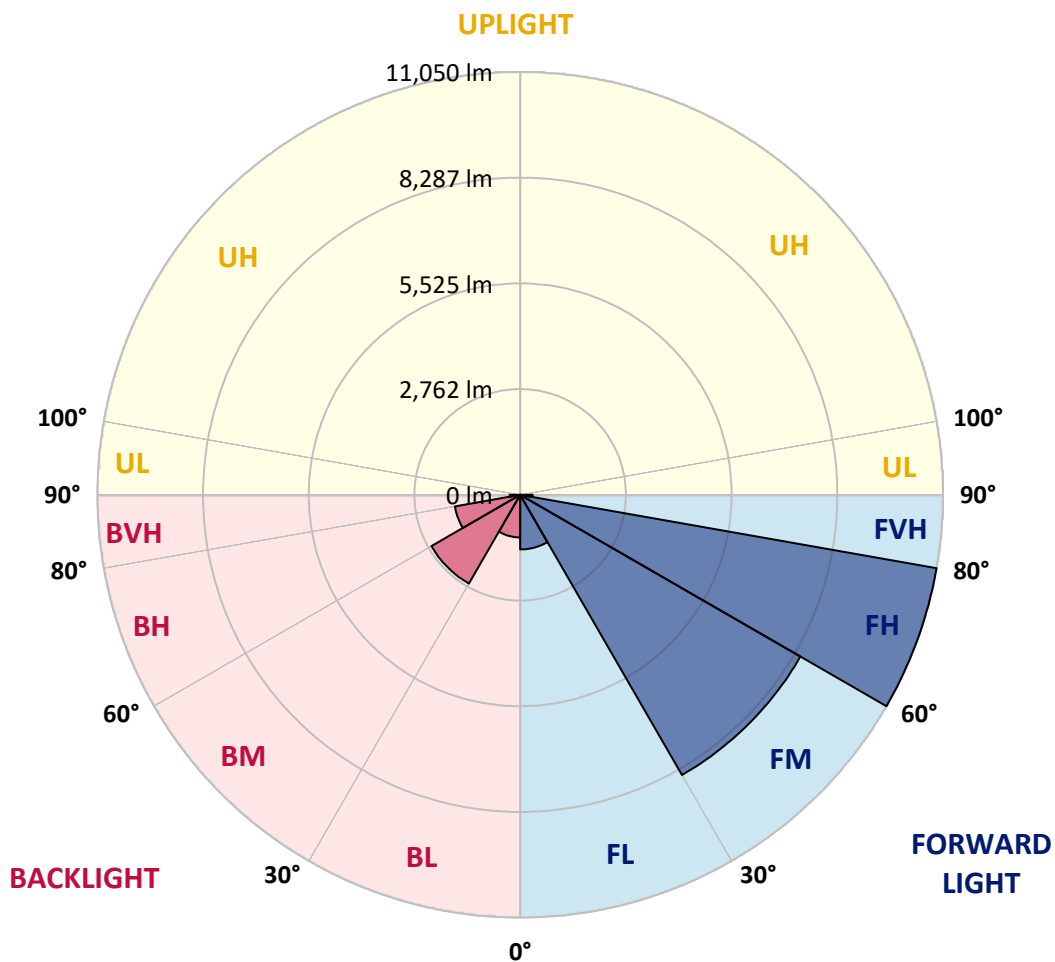
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1427.8	5.3			
FM	(30°-60°)	8455.5	31.3			
FH	(60°-80°)	11049.5	40.8			G4/12000
FVH	(80°-90°)	323.9	1.2			G3/500
BL	(0°-30°)	1113.5	4.1	B3/2500		
BM	(30°-60°)	2679.1	9.9	B3/5000		
BH	(60°-80°)	1732.5	6.4	B3/2500		G3/2500
BVH	(80°-90°)	273.2	1.0			G3/500
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	3217.3	3217.3	3217.3	3217.3	3217.3	3217.3	3217.3	3217.3	3217.3	3217.3	3217.3
2.5°	3413.7	3406.6	3410.1	3397.8	3368.1	3336.6	3336.6	3303.2	3268.1	3233.0	3194.5
5°	3625.8	3615.3	3606.5	3568.0	3510.1	3445.2	3434.7	3368.1	3296.2	3224.3	3154.2
7.5°	3802.9	3792.4	3766.1	3695.9	3611.8	3515.4	3503.1	3415.4	3320.7	3220.8	3122.7
10°	3929.2	3922.1	3871.3	3781.8	3683.6	3569.7	3548.6	3459.2	3347.0	3222.6	3098.1
12.5°	3999.2	3988.8	3927.4	3822.2	3706.5	3590.8	3569.7	3483.8	3355.8	3219.0	3073.6
15°	3971.2	3966.0	3908.1	3801.2	3685.4	3585.4	3568.0	3480.3	3350.6	3206.7	3050.7
17.5°	3852.0	3864.3	3818.7	3713.5	3618.8	3548.6	3529.4	3446.9	3324.3	3177.0	3015.7
20°	3687.2	3701.2	3678.4	3571.4	3517.1	3471.5	3461.1	3394.4	3280.4	3133.1	2973.6
22.5°	3511.9	3524.2	3525.9	3426.0	3408.4	3390.9	3382.1	3334.7	3241.8	3106.8	2945.5
25°	3390.9	3404.9	3408.4	3320.7	3331.2	3336.6	3334.7	3301.5	3234.8	3106.8	2949.1
27.5°	3359.3	3366.3	3362.8	3282.1	3301.5	3331.2	3333.0	3326.0	3262.9	3141.9	2998.2
30°	3468.0	3471.5	3427.7	3306.7	3326.0	3364.6	3366.3	3362.8	3322.4	3233.0	3108.5
32.5°	3937.8	3934.4	3783.6	3471.5	3404.9	3418.9	3424.2	3455.7	3459.2	3383.8	3268.1
35°	4653.2	4651.5	4476.1	3943.2	3629.3	3555.7	3562.7	3611.8	3655.6	3604.8	3538.2
37.5°	5440.5	5445.7	5338.8	4616.4	4113.2	3806.4	3799.3	3836.2	3915.1	3932.6	3941.4
40°	6313.7	6339.9	6334.6	5389.6	4791.7	4234.2	4164.0	4122.0	4274.5	4371.0	4495.5
42.5°	7311.2	7304.2	7307.8	6238.3	5566.7	4907.5	4777.7	4581.4	4758.5	4925.0	5198.5
45°	8168.6	8196.6	8217.7	7141.1	6434.6	5677.2	5545.6	5188.0	5347.6	5596.5	6013.8
47.5°	9031.2	8982.1	9020.7	8145.8	7400.6	6555.6	6385.5	5903.3	6052.4	6403.1	7037.7
50°	10035.9	10013.1	9837.7	9457.3	8568.3	7446.3	7223.6	6650.2	6867.7	7335.8	8301.9
52.5°	10937.1	10814.3	10677.6	10488.2	9716.7	8347.4	8065.1	7426.9	7826.7	8407.0	9871.1
55°	11266.7	11184.2	11349.0	11594.5	10931.8	9266.2	8950.5	8333.4	8908.5	9632.6	11717.3
57.5°	11617.3	11645.4	12017.1	12513.2	12082.0	10246.3	9904.3	9406.4	10095.5	11003.7	13780.9
60°	11792.7	11904.9	12646.5	13577.5	13176.0	11321.0	10993.1	10639.0	11412.1	12518.5	15839.3
62.5°	11822.4	11973.2	13023.5	13951.0	14682.1	12967.3	12588.6	12204.7	13056.7	14192.9	17329.5
65°	11275.5	11506.9	12990.1	14410.3	16054.9	15718.3	15478.1	14808.3	15258.9	15667.4	17583.8
67.5°	9667.7	9920.2	11705.0	14221.0	17156.0	18572.6	18527.1	17538.2	16959.6	16237.3	15699.0
70°	7095.6	7299.0	9013.7	12157.4	16675.5	20813.4	20894.0	19307.3	17434.8	15027.5	11673.4
71°	5738.5	5913.9	7530.4	10793.3	15739.3	20929.1	21097.3	19386.1	16940.3	13935.1	9772.9
72.5°	3571.4	3669.6	5000.4	8145.8	13553.0	19736.8	20020.9	18376.3	15383.4	11778.7	6908.0
75°	1348.2	1386.8	1855.0	3592.5	8089.7	14827.6	15171.3	13887.8	10807.3	6723.9	2891.2
77.5°	724.1	743.4	920.5	1493.8	3241.8	8500.0	8941.8	7921.4	5184.5	2352.9	1181.7
80°	485.7	498.0	636.5	885.4	1490.3	3236.6	3604.8	3180.5	1940.8	1343.0	841.6
82.5°	313.8	320.9	433.0	582.1	962.6	1137.9	1299.1	1357.0	1211.5	962.6	508.4
85°	206.8	212.2	285.8	371.7	596.1	561.1	575.1	752.2	825.8	634.7	259.5
87.5°	119.2	122.8	171.9	191.1	268.2	210.4	227.9	357.6	490.9	413.8	149.0
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°	3217.3	3217.3	3217.3	3217.3	3217.3	3217.3	3217.3	3217.3	3217.3	3217.3	3217.3
2.5°	3177.0	3163.0	3131.4	3112.1	3103.3	3099.8	3096.3	3103.3	3103.3	3099.8	3092.8
5°	3119.1	3092.8	3040.2	3003.4	2984.2	2978.8	2985.9	2994.6	2999.9	2999.9	2994.6
7.5°	3077.0	3038.5	2968.3	2917.5	2887.7	2878.9	2898.2	2929.7	2950.8	2961.3	2963.1
10°	3041.9	2989.4	2912.2	2859.7	2835.1	2831.5	2856.1	2896.5	2940.3	2959.6	2963.1
12.5°	3010.4	2950.8	2866.6	2817.5	2800.0	2808.8	2842.1	2878.9	2929.7	2957.8	2959.6
15°	2980.6	2919.2	2829.8	2778.9	2775.5	2789.5	2821.1	2850.9	2889.4	2924.5	2924.5
17.5°	2945.5	2878.9	2786.0	2738.6	2738.6	2750.9	2772.0	2787.7	2812.3	2845.6	2843.8
20°	2903.4	2835.1	2740.4	2691.3	2680.7	2673.8	2673.8	2677.3	2698.3	2728.1	2733.4
22.5°	2871.9	2801.8	2701.8	2642.2	2594.9	2549.3	2530.0	2523.0	2542.2	2570.4	2577.3
25°	2871.9	2801.8	2689.5	2589.6	2473.9	2386.2	2349.4	2338.9	2358.2	2384.5	2395.0
27.5°	2919.2	2849.1	2717.6	2542.2	2330.1	2189.8	2146.0	2137.3	2154.8	2175.8	2186.4
30°	3029.7	2961.3	2798.3	2487.9	2170.6	1986.5	1937.4	1928.7	1937.4	1946.2	1958.4
32.5°	3213.8	3155.9	2929.7	2438.8	2009.3	1802.3	1742.8	1728.8	1732.3	1734.0	1744.5
35°	3513.6	3487.3	3105.1	2381.0	1856.8	1651.6	1590.3	1562.1	1560.4	1569.2	1581.5
37.5°	3972.9	3988.8	3331.2	2296.8	1730.5	1544.7	1483.3	1455.2	1441.2	1458.7	1472.7
40°	4621.7	4658.5	3592.5	2182.9	1627.1	1481.5	1416.7	1390.4	1371.1	1365.8	1372.8
42.5°	5465.0	5454.5	3859.0	2037.3	1514.9	1439.5	1371.1	1343.0	1311.4	1271.1	1262.3
45°	6464.4	6313.7	4081.7	1858.5	1386.8	1399.1	1329.0	1290.5	1241.4	1181.7	1174.8
47.5°	7644.4	7228.8	4218.4	1667.4	1267.6	1346.5	1281.7	1222.0	1150.2	1111.5	1106.3
50°	9066.3	8300.1	4314.8	1472.7	1160.6	1279.9	1215.1	1136.1	1066.0	1055.5	1053.7
52.5°	10749.5	9564.2	4434.1	1297.4	1076.6	1194.0	1148.4	1067.8	1011.7	1016.9	1016.9
55°	12539.5	10872.1	4437.6	1158.9	1002.9	1094.0	1099.4	1034.4	990.6	1008.1	1013.4
57.5°	14171.9	12015.3	4088.6	1060.7	932.7	1015.2	1083.5	1046.7	1013.4	1074.8	1080.0
60°	15595.5	12895.5	3338.3	980.1	874.9	985.3	1118.6	1122.1	1115.1	1281.7	1293.9
62.5°	16116.3	12904.2	2370.5	911.8	843.3	1002.9	1192.2	1197.5	1197.5	1351.8	1374.5
65°	15386.9	11829.5	1578.0	871.3	822.2	1041.5	1251.9	1229.1	1174.8	1281.7	1257.1
67.5°	12816.6	9208.3	1153.7	845.1	792.5	1043.2	1304.5	1246.6	1153.7	1244.8	1202.8
70°	8808.5	5859.5	966.1	820.5	757.4	997.6	1332.5	1241.4	1122.1	1160.6	1104.6
71°	7090.3	4676.0	917.0	811.8	743.4	971.3	1336.0	1234.3	1106.3	1130.9	1080.0
72.5°	4670.8	2880.6	857.3	792.5	722.4	925.8	1327.3	1218.5	1085.2	1087.1	1053.7
75°	1842.7	1194.0	771.4	748.7	662.8	852.1	1288.7	1185.2	1044.9	1009.9	995.8
77.5°	931.0	780.2	678.5	687.3	592.6	776.7	1234.3	1130.9	988.9	941.5	931.0
80°	680.3	592.6	580.3	596.1	513.7	703.1	1166.0	1057.2	917.0	966.1	945.0
82.5°	413.8	361.2	454.1	492.7	429.5	627.7	1085.2	971.3	825.8	761.0	736.4
85°	196.4	212.2	327.9	362.9	317.3	501.5	992.4	876.7	720.6	622.5	632.9
87.5°	96.5	117.4	187.6	217.4	208.7	368.2	748.7	680.3	568.0	468.1	457.6
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)