

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: P196330

Luminaire Tested: **NAV-AF-04-D-UNV-T3R-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196330
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-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20509.1 lumens
Efficiency: N/A
Efficacy: 119.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Medium - Full Cutoff
BUG Rating: B2 - U0 - G4

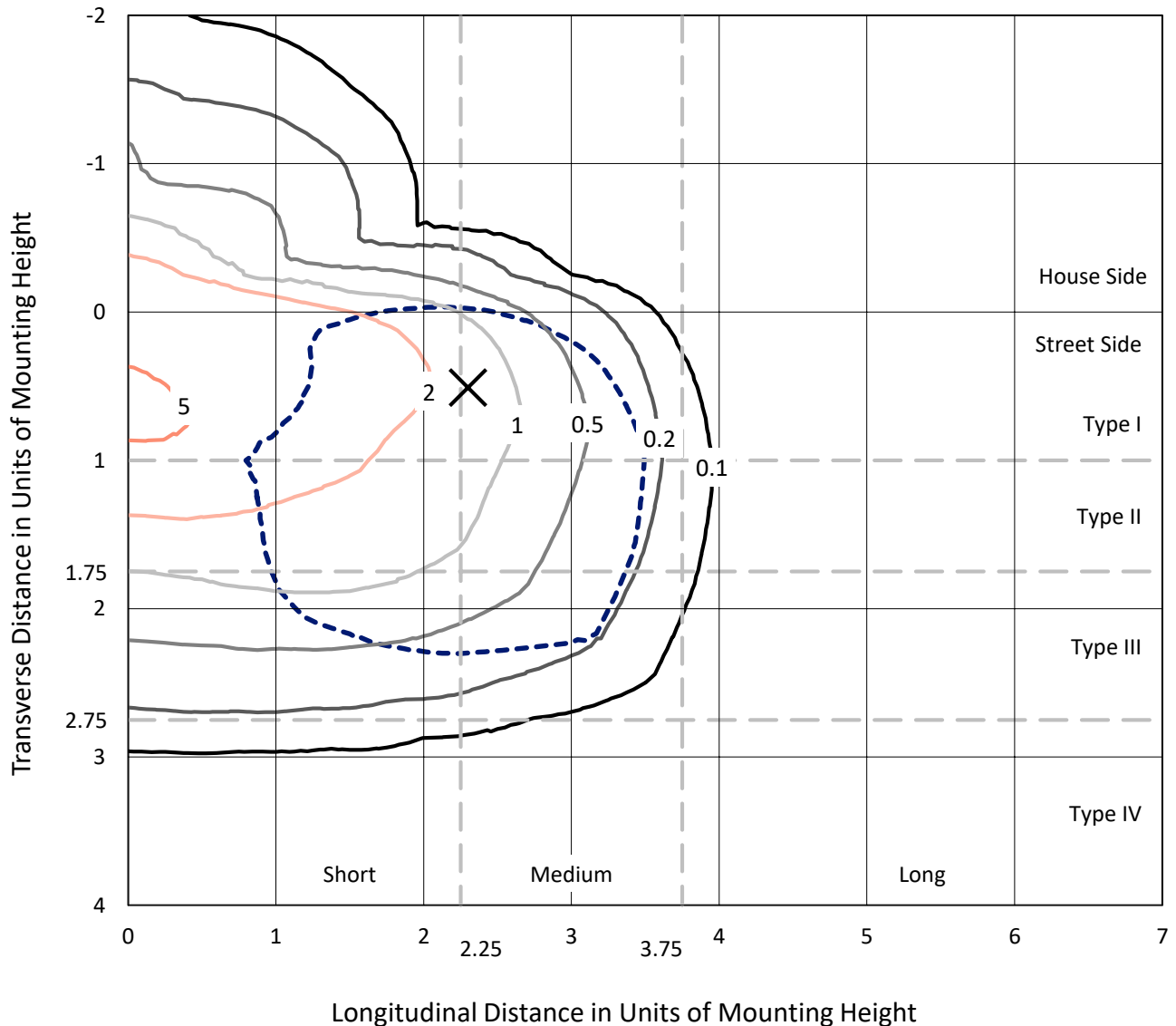
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

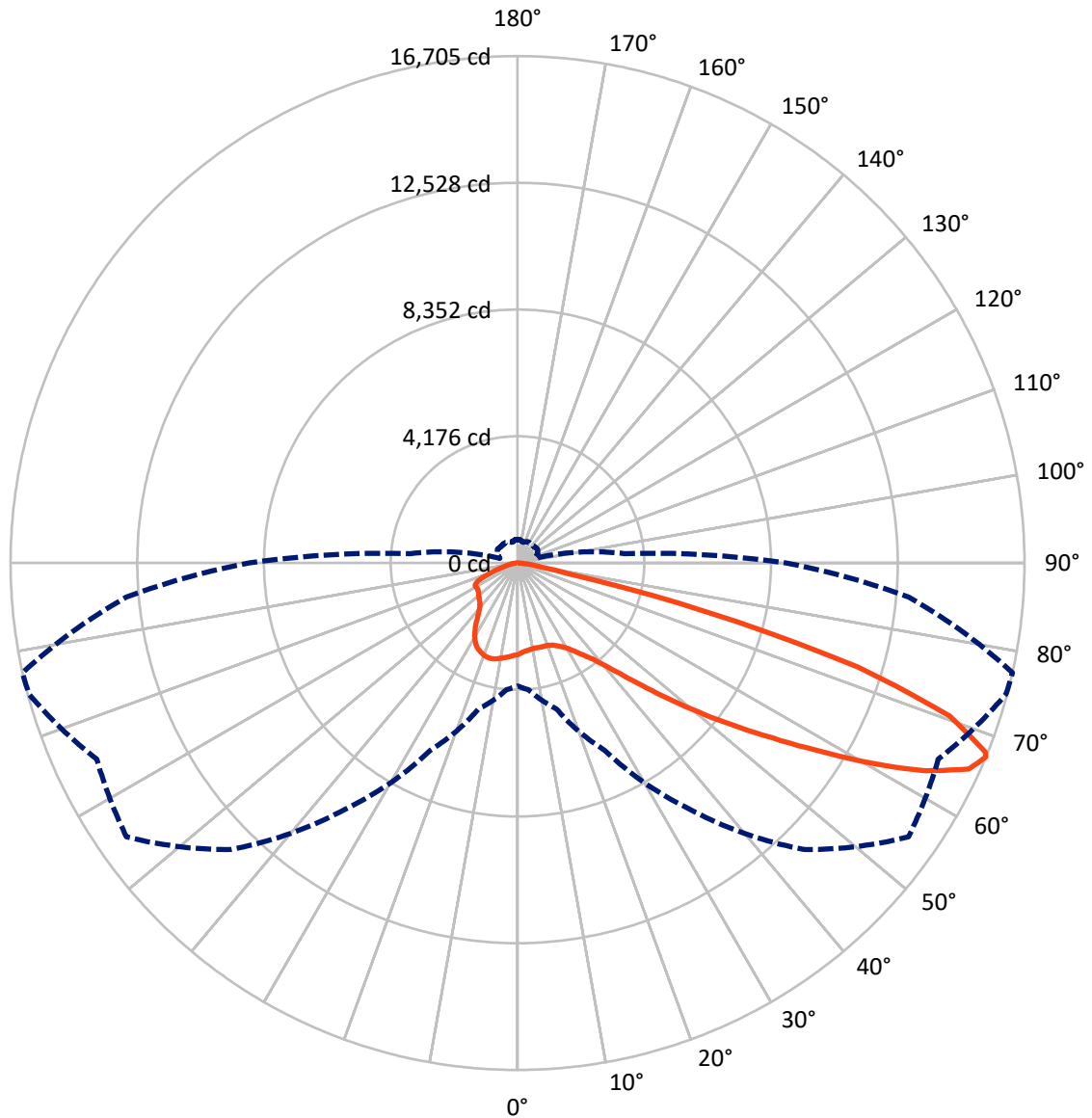
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.8 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	3524.5	0.0	3524.5
	% Fixture	17.2	0.0	17.2
Street Side	Lumens	16984.7	0.0	16984.7
	% Fixture	82.8	0.0	82.8
Total	Lumens	20509.1	0.0	20509.1
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	268.8	1.3
10°-20°	744.5	3.6
20°-30°	1265.0	6.2
30°-40°	2023.7	9.9
40°-50°	3115.4	15.2
50°-60°	4322.3	21.1
60°-70°	5765.7	28.1
70°-80°	2743.9	13.4
80°-90°	259.8	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°	20509.1	100.0
0°-180°	20509.1	100.0



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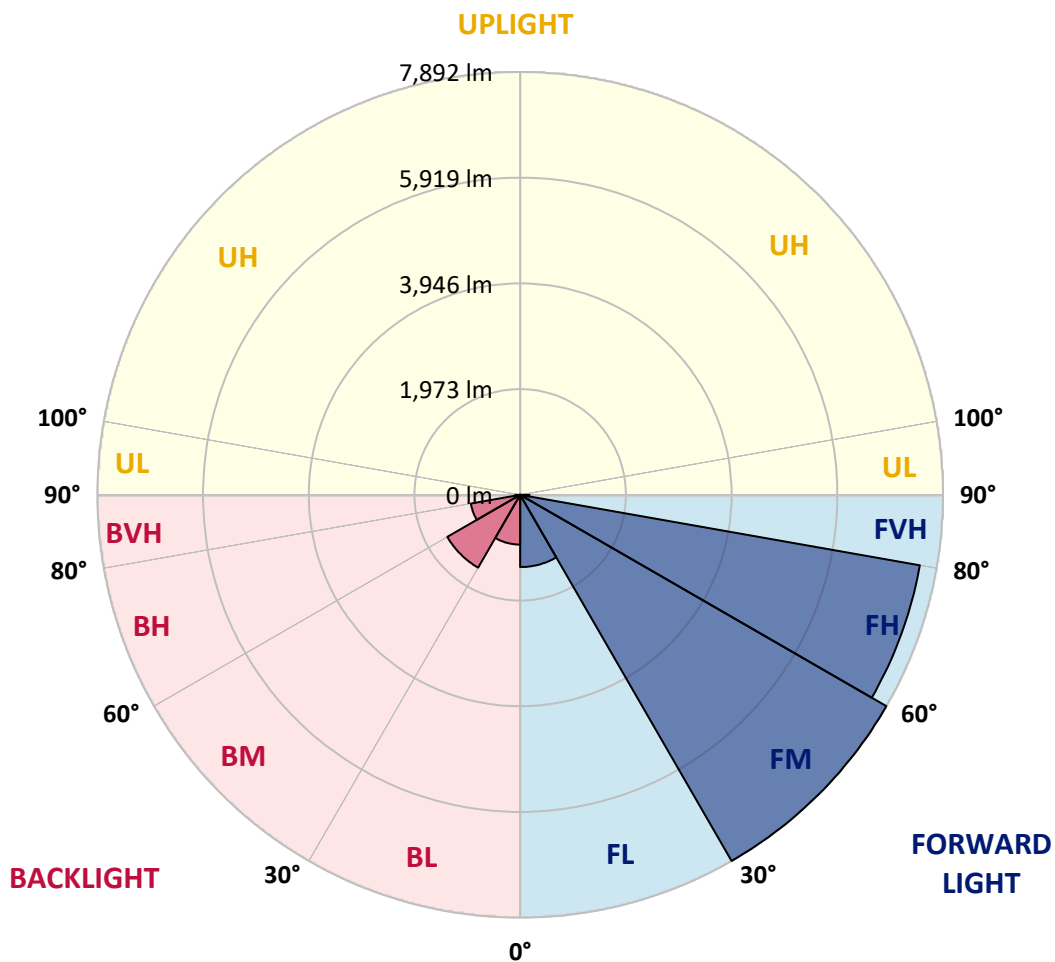
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1348.7	6.6			
FM	(30°-60°)	7892.1	38.5			
FH	(60°-80°)	7575.1	36.9			G4/12000
FVH	(80°-90°)	168.7	0.8			G2/225
BL	(0°-30°)	929.6	4.5	B2/1000		
BM	(30°-60°)	1569.3	7.7	B2/2500		
BH	(60°-80°)	934.5	4.6	B2/1000		G2/1000
BVH	(80°-90°)	91.1	0.4			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-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°	3018.4	3018.4	3018.4	3018.4	3018.4	3018.4	3018.4	3018.4	3018.4	3018.4	3018.4
2.5°	2706.5	2719.2	2720.5	2757.3	2773.7	2815.6	2861.2	2901.8	2937.3	2950.0	2972.8
5°	2435.2	2435.2	2439.0	2463.2	2510.0	2577.2	2672.4	2776.3	2885.3	2911.9	2979.1
7.5°	2293.3	2295.8	2298.4	2322.4	2359.2	2418.8	2513.9	2655.9	2837.2	2881.4	2999.4
10°	2305.9	2302.2	2289.5	2284.5	2299.6	2337.6	2420.1	2565.9	2796.5	2865.0	3036.1
12.5°	2505.0	2497.3	2455.6	2394.7	2338.9	2325.0	2382.0	2520.2	2777.5	2865.0	3098.3
15°	2846.0	2851.1	2768.7	2641.9	2496.1	2397.2	2389.6	2503.7	2771.2	2872.7	3170.5
17.5°	3289.7	3292.3	3178.1	2994.3	2752.1	2548.1	2441.6	2503.7	2771.2	2880.2	3240.3
20°	3761.3	3743.5	3614.2	3383.5	3069.2	2757.3	2536.7	2518.9	2778.8	2891.7	3306.2
22.5°	4165.7	4149.2	4013.5	3771.4	3411.4	3004.5	2664.7	2569.7	2820.7	2938.5	3398.8
25°	4519.4	4529.5	4397.7	4125.2	3752.4	3283.4	2856.2	2686.3	2908.1	3023.4	3512.8
27.5°	4949.1	4930.1	4778.0	4518.1	4103.6	3572.3	3095.8	2833.4	3012.1	3126.1	3652.2
30°	5446.1	5437.2	5231.8	4964.4	4490.2	3895.7	3332.8	2991.8	3147.7	3266.9	3827.2
32.5°	6049.5	6048.2	5827.6	5499.3	4925.0	4260.8	3613.0	3208.6	3345.5	3465.9	4059.2
35°	6732.8	6731.5	6503.3	6069.8	5425.7	4665.2	3942.6	3472.2	3590.1	3716.9	4335.6
37.5°	7206.9	7199.3	7080.1	6659.3	5979.8	5135.5	4354.6	3827.2	3867.8	4009.8	4669.0
40°	7298.1	7343.9	7446.5	7198.0	6584.4	5657.7	4767.9	4208.8	4246.8	4429.4	5088.6
42.5°	7199.3	7258.9	7599.9	7669.6	7189.2	6290.3	5285.1	4737.4	4785.6	5012.5	5581.7
45°	7113.1	7165.1	7592.2	7930.7	7786.3	6980.0	5930.4	5382.7	5473.9	5755.4	6144.6
47.5°	6966.1	7014.2	7442.7	7977.7	8127.2	7644.3	6707.4	6158.5	6315.7	6656.8	6786.1
50°	6958.4	6980.0	7238.6	7820.5	8245.2	8148.8	7568.2	7066.2	7307.0	7700.1	7496.0
52.5°	6765.7	6916.6	7151.1	7569.4	8247.6	8442.9	8416.3	8061.4	8432.8	8867.6	8274.3
55°	5586.7	5760.4	6859.6	7446.5	8232.5	8695.2	9190.9	9119.9	9700.4	10158.1	9146.5
57.5°	5216.6	5290.1	6017.8	7483.3	8359.2	9112.2	9965.4	10257.0	11150.8	11650.2	10192.4
60°	5115.2	5192.5	5849.2	7501.0	8702.8	9871.6	11016.4	11541.2	12855.8	13385.7	11380.2
62.5°	5002.3	5102.5	5861.9	7517.5	9306.2	10994.8	12410.8	12934.4	14606.5	15079.3	12493.2
65°	4672.7	4805.8	5627.4	7413.5	9966.7	12404.5	14254.1	14387.2	16053.0	16353.4	13165.1
67°	4047.8	4193.6	4983.3	6812.6	9905.8	13354.0	15728.4	15296.2	16667.8	16704.6	12947.1
67.5°	3850.0	4000.9	4765.3	6562.9	9732.1	13478.2	15989.5	15421.6	16662.7	16622.1	12744.2
70°	2592.5	2762.4	3374.6	4818.5	7806.5	12543.9	15926.2	15035.0	15569.9	15104.7	10949.2
72.5°	1286.8	1291.8	1683.5	2639.3	4729.8	8997.0	13285.6	12862.2	12621.3	11742.8	8034.8
75°	619.9	631.4	794.8	1166.3	1994.1	4644.9	9060.3	8678.7	7389.5	6398.1	4021.1
77.5°	472.8	484.3	617.4	759.3	831.7	1514.9	4487.7	3626.9	2141.1	1710.2	1133.3
80°	365.1	386.7	521.0	583.2	550.1	607.2	1411.0	1110.5	832.9	764.5	561.6
82.5°	285.2	297.9	442.4	442.4	380.3	406.9	656.6	641.5	517.2	466.5	301.7
85°	201.5	226.9	356.2	329.6	249.7	252.3	393.0	376.5	266.2	214.2	117.9
87.5°	90.0	115.4	253.6	215.5	133.1	102.7	161.0	138.2	105.3	81.1	54.5
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°	3018.4	3018.4	3018.4	3018.4	3018.4	3018.4	3018.4	3018.4	3018.4	3018.4	3018.4
2.5°	2998.2	3018.4	3050.1	3069.2	3094.4	3104.7	3114.8	3132.5	3146.5	3142.6	3136.3
5°	3026.0	3060.3	3099.5	3112.2	3112.2	3099.5	3092.0	3093.2	3089.4	3086.9	3079.3
7.5°	3066.6	3113.5	3141.4	3128.7	3089.4	3040.0	2993.1	2965.1	2938.5	2922.1	2927.2
10°	3123.6	3175.6	3176.9	3121.1	3027.3	2919.5	2827.0	2767.4	2710.3	2685.0	2692.6
12.5°	3206.0	3258.0	3213.6	3093.2	2928.4	2759.8	2589.9	2466.9	2356.7	2330.1	2322.4
15°	3294.7	3335.3	3236.4	3033.7	2786.4	2508.8	2223.6	2039.8	1916.8	1895.2	1887.7
17.5°	3372.1	3394.9	3225.1	2927.2	2562.1	2124.7	1792.5	1668.3	1643.0	1655.6	1655.6
20°	3440.6	3432.9	3175.6	2762.4	2208.3	1698.7	1506.0	1504.8	1539.0	1570.6	1573.2
22.5°	3526.7	3467.2	3097.0	2517.7	1786.2	1417.3	1384.4	1417.3	1455.4	1490.8	1494.6
25°	3629.4	3505.2	2991.8	2169.1	1436.3	1286.8	1300.7	1328.5	1352.6	1380.6	1381.8
27.5°	3732.1	3534.4	2843.5	1759.6	1246.2	1203.1	1218.2	1229.7	1236.0	1253.7	1253.7
30°	3851.3	3557.2	2629.2	1409.7	1158.7	1129.5	1120.6	1115.6	1120.6	1144.8	1146.0
32.5°	4000.9	3597.7	2336.4	1209.4	1118.1	1077.6	1032.0	1006.6	1024.3	1067.4	1075.0
35°	4170.8	3645.9	1985.2	1129.5	1104.2	1052.2	968.5	929.2	935.6	974.9	981.2
37.5°	4383.8	3708.0	1639.2	1110.5	1118.1	1049.6	939.4	883.6	855.7	856.9	855.7
40°	4656.3	3770.2	1365.3	1115.6	1148.6	1056.0	925.5	838.0	779.6	782.1	787.3
42.5°	4941.5	3810.7	1191.6	1130.8	1185.3	1064.9	920.3	793.6	742.9	785.9	825.3
45°	5274.9	3799.3	1101.6	1144.8	1213.2	1068.7	901.3	788.5	746.7	876.0	949.5
47.5°	5657.7	3749.8	1050.9	1151.1	1220.8	1067.4	887.4	805.0	778.4	1002.8	1086.4
50°	6073.6	3672.5	1010.4	1140.9	1217.0	1062.3	902.7	825.3	791.0	1030.6	1095.3
52.5°	6528.7	3601.5	968.5	1118.1	1198.0	1047.1	921.6	816.4	755.6	949.5	998.9
55°	7067.5	3585.0	921.6	1078.8	1166.3	1030.6	911.4	788.5	716.3	841.8	872.2
57.5°	7683.6	3687.7	860.8	1030.6	1123.2	997.7	887.4	773.4	702.4	765.7	782.1
60°	8465.7	3914.6	796.2	980.0	1069.9	948.3	865.8	777.1	706.1	754.3	758.1
62.5°	9076.7	4118.8	737.9	917.8	998.9	888.6	843.0	780.9	717.5	769.5	763.1
65°	9298.6	4018.7	665.5	825.3	898.8	822.8	811.3	783.5	717.5	778.4	764.5
67°	8843.5	3540.7	597.1	732.7	803.7	764.5	780.9	773.4	704.8	777.1	753.0
67.5°	8626.7	3372.1	579.3	717.5	778.4	746.7	773.4	768.2	701.0	774.6	746.7
70°	7114.3	2418.8	489.4	602.2	651.6	658.0	726.4	735.3	670.6	727.6	677.0
72.5°	5062.0	1513.7	422.2	466.5	526.1	562.8	663.0	690.9	630.0	632.6	590.8
75°	2505.0	812.6	376.5	360.1	409.5	469.0	578.1	630.0	570.5	527.3	513.4
77.5°	845.6	460.2	318.2	290.3	318.2	376.5	479.2	550.1	503.3	446.2	437.3
80°	437.3	334.7	248.5	233.2	251.0	291.5	375.2	457.7	429.7	432.3	356.2
82.5°	272.5	204.1	178.7	177.5	190.2	223.1	276.4	371.4	368.9	315.7	229.4
85°	126.7	117.9	114.1	117.9	121.7	126.7	180.0	264.9	280.2	169.9	150.9
87.5°	53.2	52.0	45.6	49.4	54.5	53.2	72.2	112.8	157.2	106.5	97.6
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)