

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: P196167

Luminaire Tested: **NAV-AF-03-D-UNV-SL4-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196167
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-03-D-UNV-SL4-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15094.7 lumens
Efficiency: N/A
Efficacy: 90.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

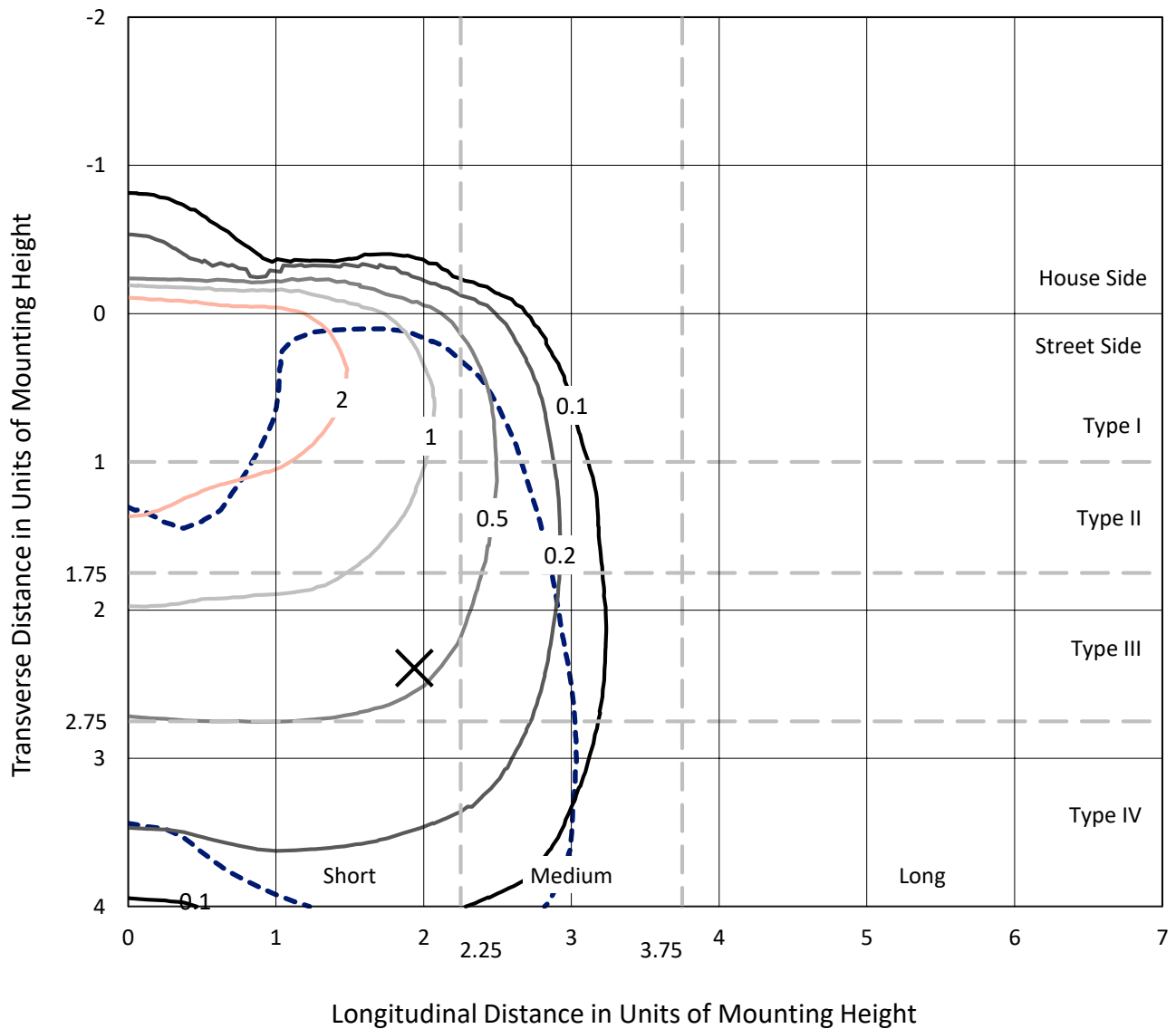
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

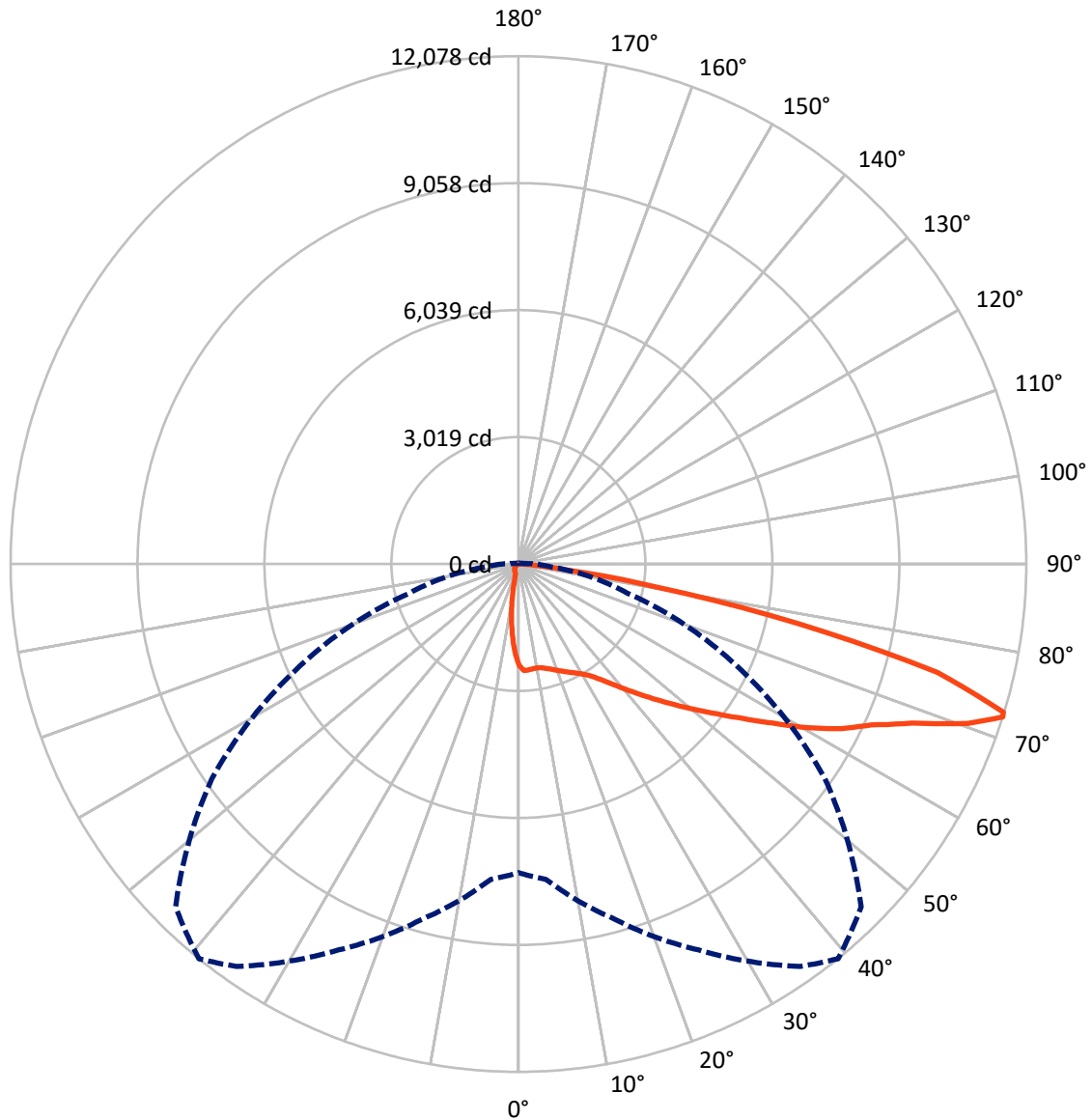
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.1 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	989.3	0.0	989.3
	% Fixture	6.6	0.0	6.6
Street Side	Lumens	14105.4	0.0	14105.4
	% Fixture	93.4	0.0	93.4
Total	Lumens	15094.7	0.0	15094.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	196.5	1.3
10°-20°	475.8	3.2
20°-30°	790.1	5.2
30°-40°	1259.3	8.3
40°-50°	2078.7	13.8
50°-60°	3139.2	20.8
60°-70°	4089.3	27.1
70°-80°	2763.2	18.3
80°-90°	302.6	2.0
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°	15094.7	100.0
0°-180°	15094.7	100.0



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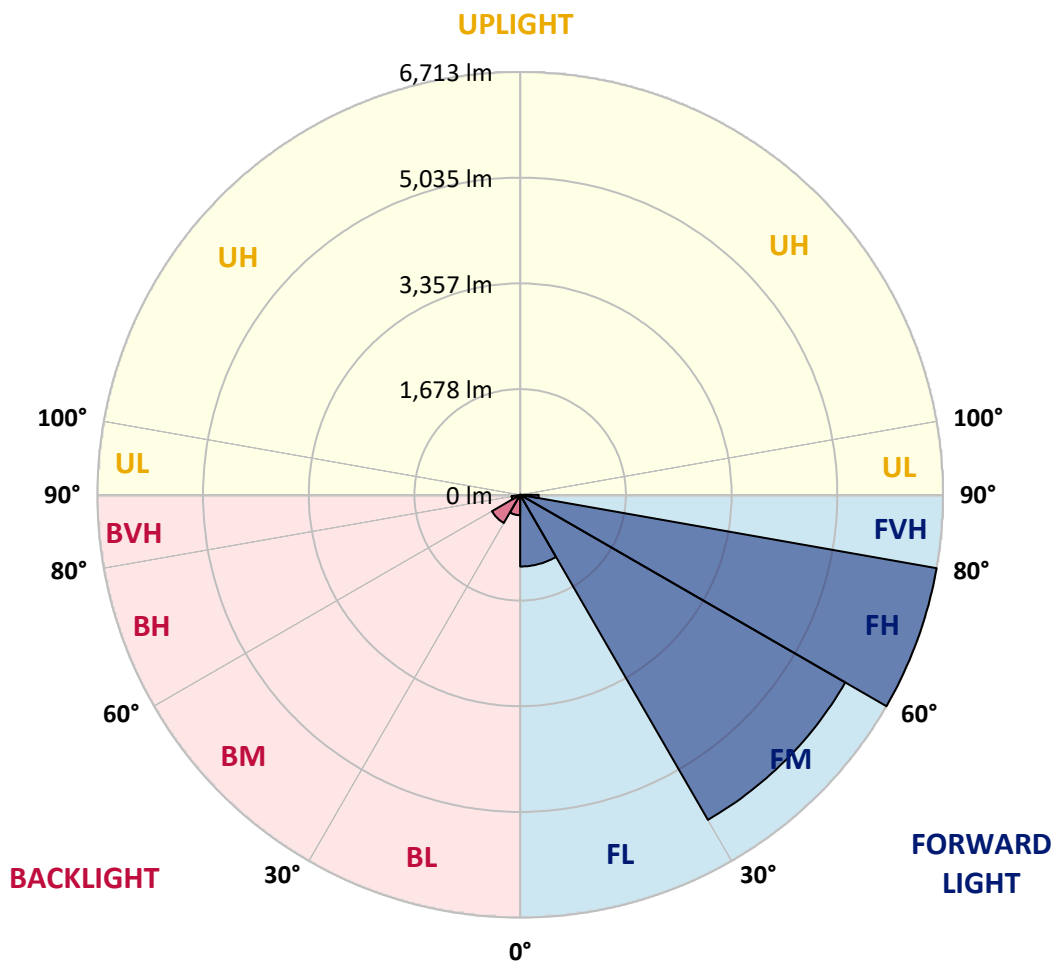
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1138.5	7.5			
FM	(30°-60°)	5959.6	39.5			
FH	(60°-80°)	6713.4	44.5			G3/7500
FVH	(80°-90°)	293.9	1.9			G3/500
BL	(0°-30°)	323.9	2.1	B1/500		
BM	(30°-60°)	517.6	3.4	B1/1000		
BH	(60°-80°)	139.1	0.9	B1/500		G1/500
BVH	(80°-90°)	8.7	0.1			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	2416.0	2416.0	2416.0	2416.0	2416.0	2416.0	2416.0	2416.0	2416.0	2416.0	2416.0
2.5°	2572.6	2577.4	2571.5	2560.8	2545.3	2535.9	2522.8	2494.4	2458.8	2427.9	2392.3
5°	2592.8	2595.2	2588.1	2567.9	2544.2	2531.1	2514.5	2483.6	2446.9	2404.1	2340.1
7.5°	2598.7	2597.6	2589.3	2564.3	2527.5	2510.9	2482.5	2444.4	2406.5	2367.3	2295.0
10°	2596.4	2596.4	2590.4	2566.7	2525.2	2509.7	2477.7	2437.4	2389.9	2350.7	2273.6
12.5°	2588.1	2592.8	2589.3	2576.2	2545.3	2533.4	2505.0	2464.7	2419.6	2379.2	2297.3
15°	2598.7	2605.9	2613.0	2608.2	2590.4	2579.8	2553.7	2512.2	2475.3	2432.6	2344.8
17.5°	2641.5	2656.9	2673.5	2674.7	2655.7	2636.8	2607.1	2564.3	2528.7	2489.6	2394.6
20°	2722.2	2734.0	2764.8	2770.8	2732.8	2705.5	2664.0	2614.2	2578.6	2545.3	2441.0
22.5°	2842.0	2855.1	2880.0	2871.6	2807.6	2775.6	2723.3	2666.4	2629.6	2610.6	2494.4
25°	3023.5	3027.1	3033.0	2996.2	2890.7	2855.1	2791.0	2726.9	2697.2	2694.9	2570.3
27.5°	3237.1	3241.9	3215.7	3133.9	2983.2	2936.9	2864.6	2806.4	2792.1	2809.9	2666.4
30°	3481.6	3482.7	3410.4	3277.5	3090.0	3039.0	2964.2	2900.2	2913.2	2957.1	2789.8
32.5°	3732.0	3720.2	3620.4	3447.1	3236.0	3174.2	3110.2	3046.1	3084.1	3173.1	2970.1
35°	3961.0	3956.3	3838.8	3637.1	3425.9	3371.2	3325.0	3257.3	3319.1	3463.8	3215.7
37.5°	4190.0	4186.4	4052.4	3842.3	3659.6	3620.4	3586.1	3533.8	3634.6	3847.1	3544.5
40°	4442.8	4436.8	4271.9	4070.2	3931.3	3910.0	3889.8	3867.3	4039.3	4334.8	3953.9
42.5°	4754.9	4728.8	4504.5	4318.2	4230.4	4236.3	4237.5	4260.1	4529.4	4915.1	4436.8
45°	5113.2	5055.1	4738.2	4583.9	4559.1	4594.7	4630.3	4724.0	5100.2	5583.2	4970.8
47.5°	5460.9	5367.2	5007.7	4870.0	4921.0	4994.6	5080.0	5262.8	5741.0	6282.0	5455.0
50°	5759.9	5663.9	5274.6	5160.7	5323.2	5432.5	5584.3	5860.8	6417.4	6873.0	5759.9
52.5°	5994.9	5919.0	5557.1	5481.1	5769.4	5919.0	6157.4	6520.6	7055.8	7262.2	5973.5
55°	6168.2	6130.1	5827.5	5838.3	6265.5	6481.4	6778.1	7188.7	7594.5	7564.8	6133.7
57.5°	6364.0	6334.3	6111.2	6259.5	6862.4	7141.2	7484.1	7814.0	7986.1	7808.1	6290.3
60°	6564.5	6574.0	6455.3	6769.8	7600.4	7908.9	8208.0	8289.9	8321.9	8054.9	6455.3
62.5°	6716.4	6756.7	6767.4	7320.3	8357.5	8620.9	8750.3	8692.1	8685.1	8385.9	6442.2
65°	6890.8	6996.5	7172.0	7924.4	9045.7	9219.0	9311.5	9395.8	9217.8	8484.5	5808.6
67.5°	7192.3	7358.4	7753.5	8664.8	9840.8	10097.1	10359.3	10270.3	9297.3	7484.1	4425.0
70°	7598.1	7800.9	8498.7	9632.0	10919.5	11349.0	11568.6	10200.4	7893.5	5171.4	2334.2
72°	7341.7	7525.6	8728.9	10125.6	11683.6	12077.6	11528.2	8897.4	5722.0	2680.6	782.0
72.5°	7092.5	7282.4	8655.4	10119.6	11759.6	12061.0	11266.0	8383.6	5063.4	2086.1	538.7
75°	4921.0	5160.7	7420.1	9096.8	10619.3	10288.1	8619.8	5076.4	1834.6	358.3	178.0
77.5°	2544.2	2729.2	4500.9	6428.0	7401.0	6778.1	5094.3	2202.4	507.9	189.9	117.4
80°	1577.1	1668.4	2105.1	3167.2	3844.8	3363.0	2247.5	890.0	325.1	112.7	93.7
82.5°	816.4	886.4	1325.4	1278.0	1420.4	1180.7	829.5	745.2	200.5	70.0	96.2
85°	268.2	284.8	814.1	849.7	607.5	408.2	367.9	710.7	58.1	45.1	81.8
87.5°	35.6	41.5	286.0	486.5	299.0	185.2	220.8	250.4	20.2	25.0	22.5
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°	2416.0	2416.0	2416.0	2416.0	2416.0	2416.0	2416.0	2416.0	2416.0	2416.0	2416.0
2.5°	2368.5	2353.1	2304.5	2255.8	2200.1	2149.0	2108.6	2082.5	2094.4	2055.2	2061.1
5°	2300.9	2261.7	2154.9	2039.9	1915.3	1799.0	1706.4	1637.5	1624.5	1565.2	1567.6
7.5°	2235.7	2171.5	1998.3	1808.5	1601.9	1434.7	1282.8	1149.9	1102.4	1053.7	1025.3
10°	2200.1	2112.2	1866.6	1590.1	1299.4	1053.7	840.1	672.8	602.8	551.8	526.8
12.5°	2210.7	2094.4	1768.1	1391.9	1009.9	697.8	474.6	352.4	309.7	286.0	277.6
15°	2246.3	2098.0	1679.1	1198.5	734.6	422.5	278.9	238.6	235.0	233.7	232.6
17.5°	2279.5	2101.6	1585.4	996.8	491.2	269.3	224.2	220.8	220.8	220.8	220.8
20°	2313.9	2102.7	1482.2	785.5	322.7	220.8	211.2	208.9	211.2	211.2	211.2
22.5°	2354.3	2111.1	1382.4	580.2	238.6	207.7	201.7	200.5	201.7	201.7	200.5
25°	2404.1	2128.9	1274.5	415.3	215.9	199.4	193.4	192.2	193.4	192.2	192.2
27.5°	2470.6	2152.6	1148.7	297.9	206.4	191.1	185.2	185.2	185.2	183.9	183.9
30°	2556.0	2181.0	980.2	235.0	197.0	182.7	178.0	178.0	176.8	175.6	175.6
32.5°	2678.3	2227.4	796.3	212.4	186.3	172.1	167.4	168.5	167.4	166.1	164.9
35°	2851.5	2299.7	614.7	200.5	175.6	161.4	156.6	156.6	156.6	154.3	154.3
37.5°	3097.1	2410.1	460.4	188.6	164.9	150.7	144.7	144.7	143.6	141.2	142.4
40°	3400.9	2548.9	333.5	178.0	154.3	138.8	134.1	131.8	129.3	126.9	126.9
42.5°	3766.4	2684.2	250.4	167.4	143.6	129.3	123.4	121.0	116.3	114.0	112.7
45°	4175.8	2827.7	207.7	154.3	131.8	118.7	114.0	109.1	103.2	99.6	98.5
47.5°	4521.1	2915.6	185.2	141.2	119.9	108.0	103.2	96.2	89.0	86.6	86.6
50°	4728.8	2878.8	166.1	128.2	108.0	97.3	91.3	81.8	77.1	74.8	73.6
52.5°	4845.0	2769.6	150.7	117.4	97.3	85.4	77.1	68.8	66.5	64.0	64.0
55°	4924.6	2611.8	134.1	106.8	87.8	74.8	65.3	59.3	57.0	55.8	54.6
57.5°	5000.5	2419.6	118.7	97.3	78.4	66.5	55.8	53.4	48.7	47.5	47.5
60°	5023.0	2154.9	104.4	86.6	70.0	58.1	48.7	45.1	40.3	39.2	39.2
62.5°	4735.9	1714.7	92.6	73.6	61.7	49.8	42.8	38.0	33.2	33.2	33.2
65°	3957.5	1164.1	79.5	64.0	54.6	42.8	36.8	30.9	28.4	28.4	28.4
67.5°	2756.5	649.1	67.6	54.6	46.2	35.6	30.9	26.1	25.0	26.1	26.1
70°	1242.4	257.5	57.0	45.1	38.0	29.7	26.1	22.5	25.0	25.0	25.0
72°	372.6	137.7	47.5	36.8	30.9	26.1	22.5	21.4	23.7	25.0	25.0
72.5°	276.5	123.4	45.1	35.6	30.9	25.0	21.4	21.4	23.7	25.0	25.0
75°	142.4	84.3	34.4	26.1	22.5	20.2	17.8	20.2	23.7	23.7	23.7
77.5°	111.5	68.8	28.4	20.2	19.0	17.8	16.6	19.0	21.4	21.4	21.4
80°	104.4	45.1	22.5	19.0	16.6	15.4	15.4	16.6	19.0	20.2	20.2
82.5°	105.6	36.8	20.2	17.8	15.4	14.2	14.2	15.4	17.8	19.0	19.0
85°	67.6	25.0	17.8	15.4	14.2	13.1	13.1	14.2	16.6	17.8	17.8
87.5°	22.5	19.0	15.4	14.2	11.9	11.9	11.9	11.9	14.2	15.4	16.6
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)