

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: P196311

Luminaire Tested: **NAV-AF-03-D-UNV-T3**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196311
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (p24135)
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-T3
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18534.9 lumens
Efficiency: N/A
Efficacy: 111.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B3 - 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

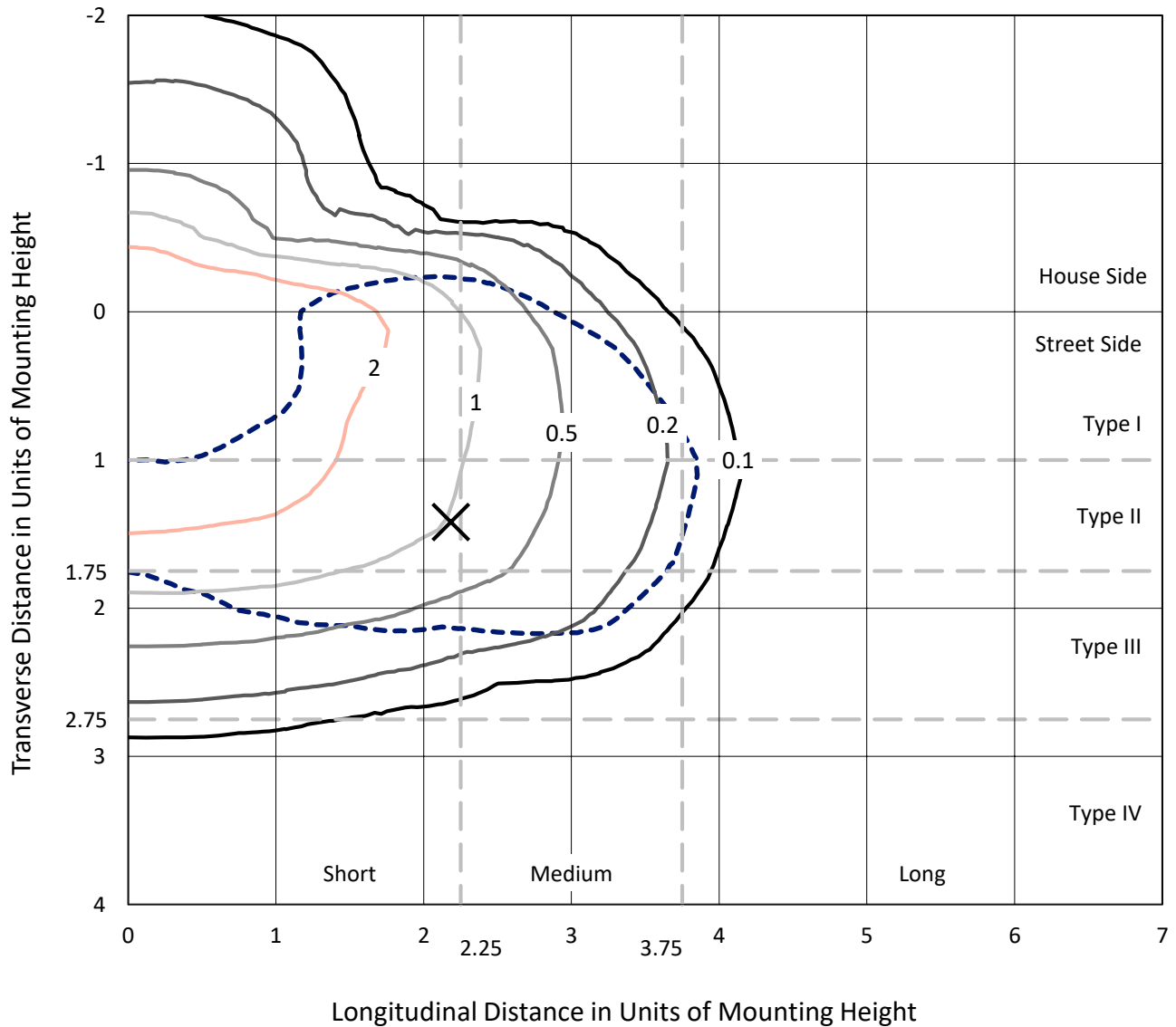


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

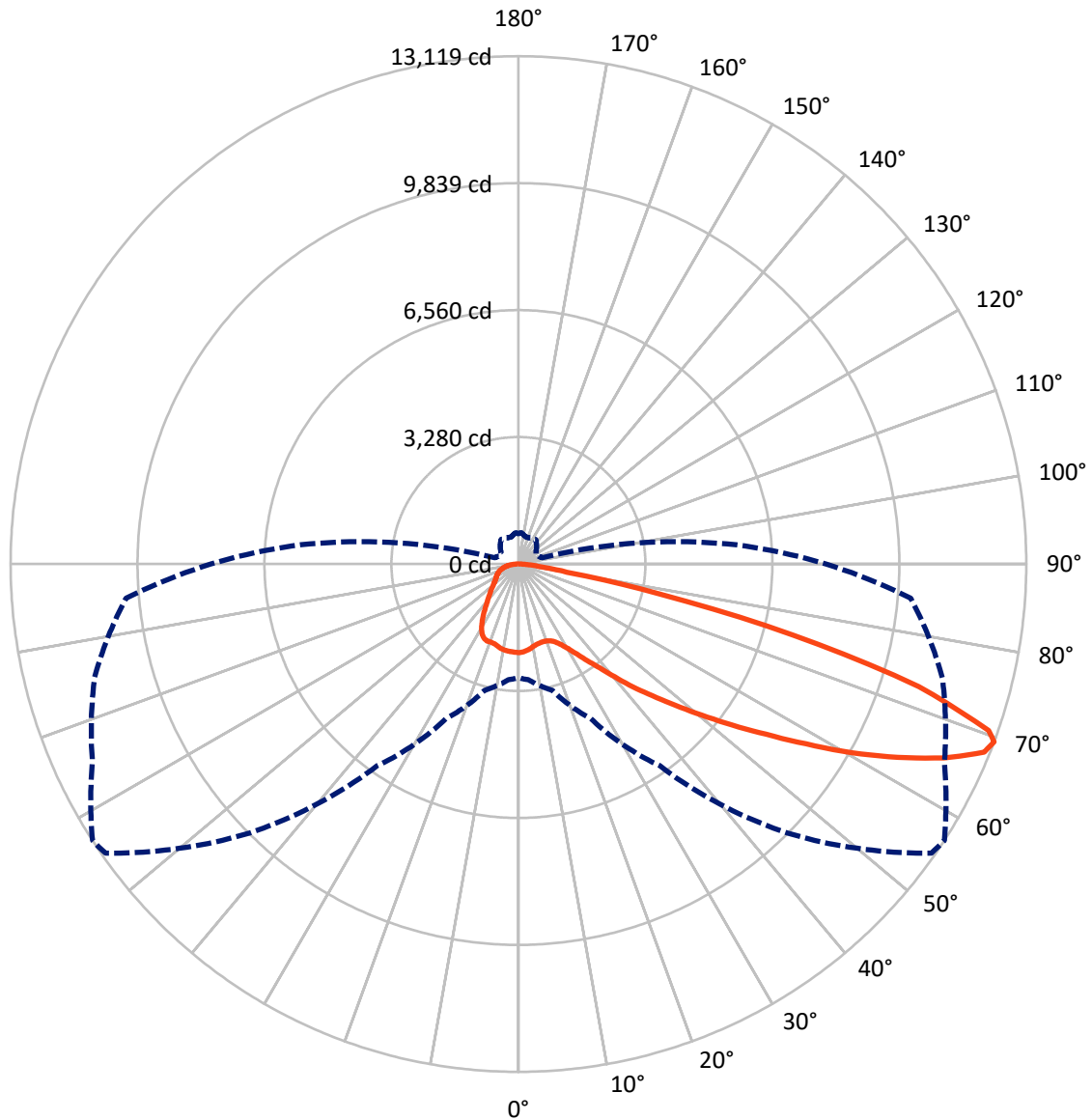


Based on 25 foot mounting height. Maximum calculated value = 3.7 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	4090.0	0.0	4090.0
	% Fixture	22.1	0.0	22.1
Street Side	Lumens	14444.9	0.0	14444.9
	% Fixture	77.9	0.0	77.9
Total	Lumens	18534.9	0.0	18534.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.4	1.2
10°-20°	609.6	3.3
20°-30°	1014.1	5.5
30°-40°	1655.9	8.9
40°-50°	2794.9	15.1
50°-60°	4347.6	23.5
60°-70°	5178.9	27.9
70°-80°	2412.7	13.0
80°-90°	306.9	1.7
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°	18534.9	100.0
0°-180°	18534.9	100.0



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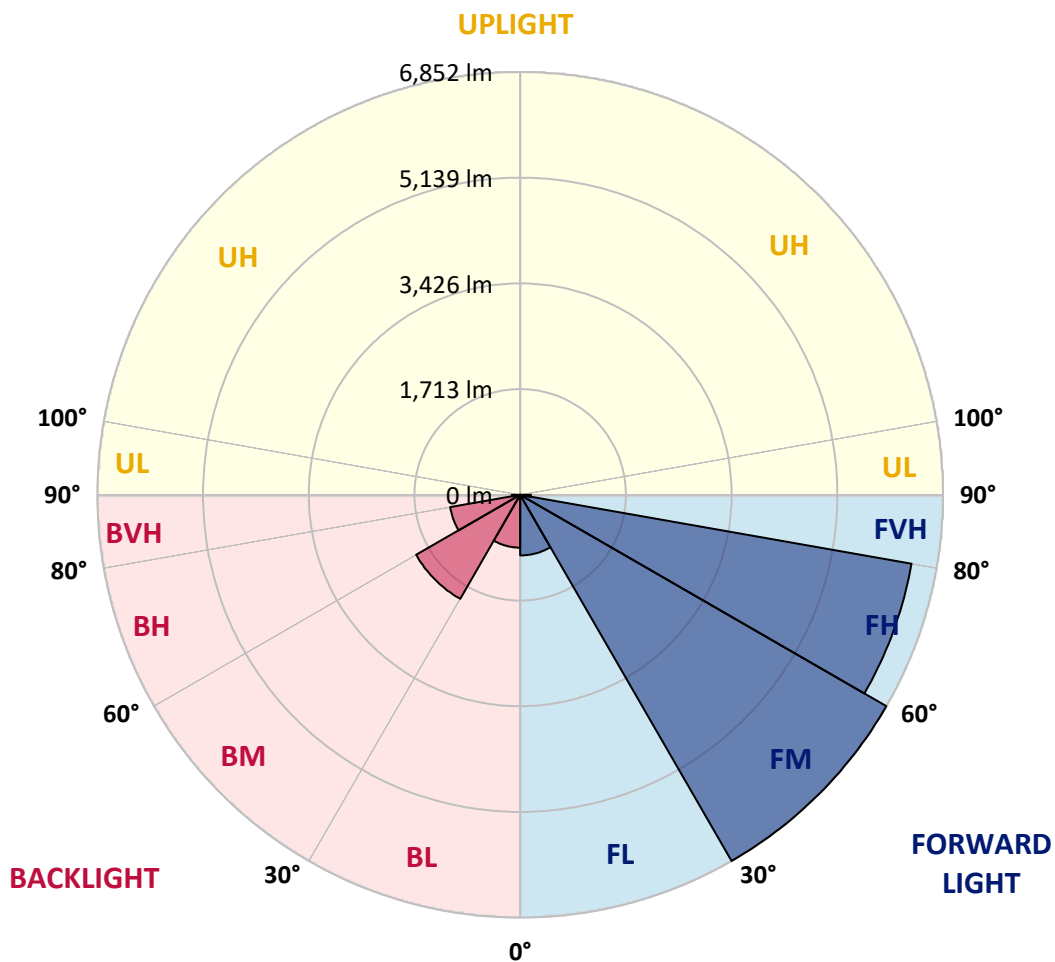
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	981.6	5.3			
FM	(30°-60°)	6851.8	37.0			
FH	(60°-80°)	6439.0	34.7			G3/7500
FVH	(80°-90°)	172.5	0.9			G2/225
BL	(0°-30°)	856.5	4.6	B2/1000		
BM	(30°-60°)	1946.6	10.5	B2/2500		
BH	(60°-80°)	1152.5	6.2	B3/2500		G3/2500
BVH	(80°-90°)	134.4	0.7			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
0°	2290.2	2290.2	2290.2	2290.2	2290.2	2290.2	2290.2	2290.2	2290.2	2290.2	2290.2
2.5°	2277.1	2277.1	2283.0	2283.0	2283.0	2280.7	2273.5	2276.0	2271.2	2267.6	2261.6
5°	2230.9	2233.2	2240.4	2242.7	2246.3	2247.4	2247.4	2246.3	2247.4	2247.4	2243.8
7.5°	2166.7	2169.2	2177.5	2182.2	2192.9	2202.3	2207.1	2207.1	2213.1	2217.8	2219.0
10°	2127.6	2127.6	2132.3	2132.3	2140.6	2145.4	2160.8	2159.7	2176.2	2191.7	2198.8
12.5°	2122.8	2122.8	2120.5	2112.2	2107.4	2106.3	2121.7	2124.1	2148.9	2176.2	2189.3
15°	2138.3	2138.3	2131.1	2114.5	2096.7	2088.5	2103.9	2108.6	2135.9	2167.9	2188.1
17.5°	2188.1	2187.0	2171.5	2138.3	2107.4	2094.4	2099.1	2103.9	2128.8	2165.6	2190.4
20°	2298.5	2298.5	2265.2	2204.8	2151.4	2120.5	2113.3	2116.9	2134.7	2169.2	2201.2
22.5°	2491.9	2495.5	2436.2	2336.4	2245.1	2179.8	2151.4	2154.8	2163.2	2196.4	2232.0
25°	2776.7	2767.2	2682.9	2541.7	2399.3	2287.8	2229.6	2233.2	2233.2	2264.1	2300.8
27.5°	3078.1	3080.4	2959.4	2807.5	2620.1	2454.0	2361.4	2360.2	2359.0	2388.7	2427.8
30°	3418.6	3419.8	3279.8	3104.1	2889.4	2677.0	2538.1	2537.0	2526.3	2563.1	2614.2
32.5°	3791.3	3790.0	3627.5	3429.3	3190.8	2949.9	2769.5	2768.4	2760.0	2809.9	2871.6
35°	4204.1	4204.1	4042.8	3798.3	3540.8	3272.7	3063.8	3062.6	3067.4	3135.0	3193.1
37.5°	4701.4	4712.0	4517.5	4220.8	3939.6	3653.6	3410.3	3403.2	3367.6	3481.5	3577.7
40°	5219.9	5249.6	5047.9	4701.4	4397.6	4102.1	3833.9	3829.2	3798.3	3919.3	4074.8
42.5°	5781.2	5848.8	5624.5	5271.0	4939.8	4620.7	4351.3	4338.2	4219.6	4408.3	4651.6
45°	6516.9	6560.8	6235.6	5915.2	5603.2	5238.9	4918.6	4848.5	4729.8	4972.0	5287.5
47.5°	7017.6	6996.3	6793.3	6578.6	6378.0	6029.2	5536.7	5447.7	5303.0	5623.4	5971.1
50°	7328.5	7344.0	7230.0	7219.4	7208.6	6965.4	6234.5	6127.7	5960.3	6340.0	6745.8
52.5°	7533.8	7463.8	7484.0	7726.0	8019.1	7902.8	7023.6	6904.9	6732.9	7112.6	7570.6
55°	7448.4	7355.8	7542.1	8019.1	8708.6	8734.7	7889.8	7767.6	7620.5	7933.7	8562.6
57.5°	7094.8	7141.0	7435.3	8098.6	9179.7	9479.9	8885.4	8760.8	8471.3	8789.2	9504.7
60°	6597.5	6691.3	7141.0	7972.9	9509.6	10060.1	9978.2	9895.1	9396.8	9622.3	10494.4
62.5°	6063.5	6156.1	6709.1	7758.1	9361.2	10573.9	11050.9	10999.9	10418.4	10424.4	11122.1
65°	5274.5	5312.5	5877.3	7171.9	8949.4	11037.8	12124.8	12079.7	11395.1	11109.0	11297.8
67.5°	3983.5	4030.9	4494.8	5661.3	7696.4	10786.3	12982.7	12975.6	11982.4	11363.0	10880.0
69°	2941.6	2999.8	3378.3	4395.2	6363.8	9827.5	13023.1	13119.1	12141.4	11336.9	10174.0
70°	2152.5	2219.0	2569.0	3488.7	5300.6	8769.0	12677.7	12884.3	12080.8	11172.0	9623.4
72.5°	914.9	937.4	1109.5	1574.6	2688.8	5287.5	10384.1	10818.3	10910.9	10010.3	7518.4
75°	573.2	580.2	647.9	808.1	1196.1	2187.0	6724.6	7316.7	8146.1	7766.3	5033.6
77.5°	431.9	437.8	477.0	556.5	742.9	816.4	3119.6	3720.1	4665.8	4568.5	2504.9
80°	331.0	334.6	360.7	404.7	523.3	511.5	1012.2	1272.0	1947.2	1718.3	886.4
82.5°	259.8	261.1	283.6	292.0	365.5	344.1	507.9	566.0	786.8	653.9	433.1
85°	230.2	233.7	256.4	213.6	233.7	207.7	278.9	302.6	417.7	393.9	163.8
87.5°	117.4	123.4	214.8	182.7	117.4	98.5	122.2	131.8	169.7	183.9	79.5
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°	2290.2	2290.2	2290.2	2290.2	2290.2	2290.2	2290.2	2290.2	2290.2	2290.2	2290.2
2.5°	2262.9	2264.1	2267.6	2273.5	2283.0	2294.9	2309.1	2323.4	2331.7	2337.6	2335.3
5°	2243.8	2245.1	2252.2	2262.9	2274.7	2292.5	2316.3	2334.1	2347.2	2355.4	2354.2
7.5°	2220.1	2223.7	2237.9	2249.8	2266.4	2280.7	2299.7	2316.3	2329.4	2337.6	2336.4
10°	2202.3	2205.9	2223.7	2239.1	2253.4	2255.7	2252.2	2247.4	2246.3	2252.2	2249.8
12.5°	2194.0	2201.2	2217.8	2228.5	2222.6	2200.0	2173.9	2163.2	2159.7	2171.5	2172.6
15°	2196.4	2202.3	2216.6	2209.5	2177.5	2139.5	2125.2	2133.6	2140.6	2147.8	2148.9
17.5°	2202.3	2205.9	2209.5	2183.4	2138.3	2113.3	2108.6	2100.3	2078.9	2067.1	2065.8
20°	2213.1	2217.8	2211.8	2170.3	2130.0	2096.7	2039.8	1988.7	1940.1	1914.0	1903.3
22.5°	2249.8	2253.4	2235.6	2195.3	2133.6	2025.5	1910.5	1822.6	1747.9	1707.5	1692.1
25°	2322.2	2328.1	2303.2	2252.2	2090.8	1902.2	1739.5	1620.9	1527.2	1478.5	1465.5
27.5°	2449.1	2455.1	2427.8	2294.9	1991.2	1737.2	1540.3	1422.7	1342.0	1300.5	1294.5
30°	2639.0	2647.3	2622.4	2293.8	1839.3	1527.2	1345.6	1276.7	1230.5	1202.1	1200.8
32.5°	2902.4	2933.3	2831.2	2253.4	1651.8	1314.8	1198.5	1174.8	1152.1	1133.2	1133.2
35°	3237.1	3309.5	3037.8	2169.2	1445.3	1169.9	1116.6	1094.0	1065.6	1045.5	1043.0
37.5°	3637.0	3749.7	3184.9	2019.6	1267.3	1100.0	1066.7	1030.0	984.9	945.7	936.2
40°	4186.3	4212.5	3257.3	1776.4	1134.4	1062.0	1020.5	974.3	917.3	873.4	868.6
42.5°	4738.1	4652.7	3243.1	1515.3	1058.4	1027.7	973.0	922.0	870.9	834.2	834.2
45°	5365.9	5037.2	3135.0	1253.0	989.6	988.5	929.1	880.5	841.3	814.1	808.1
47.5°	5966.3	5382.5	2948.8	1059.7	918.4	949.3	900.6	861.5	825.9	799.7	795.0
50°	6694.9	5782.3	2750.6	924.3	849.7	914.9	888.7	868.6	834.2	789.1	784.4
52.5°	7418.7	6249.9	2597.5	822.4	789.1	887.6	895.9	898.3	866.2	778.5	772.5
55°	8195.9	6749.4	2436.2	742.9	739.3	874.5	912.5	910.1	894.7	780.8	771.3
57.5°	8935.2	7251.4	2195.3	687.0	700.1	861.5	916.1	878.1	850.8	792.7	777.2
60°	9547.5	7666.7	1841.6	647.9	666.9	835.3	892.3	835.3	789.1	790.3	776.0
62.5°	9845.3	7783.0	1408.5	602.8	639.5	792.7	857.9	803.3	760.7	795.0	786.8
65°	9618.7	7451.9	1003.9	561.3	606.4	742.9	837.8	776.0	746.3	818.8	809.3
67.5°	8804.6	6550.1	728.5	524.5	574.3	691.8	799.7	751.2	732.1	836.6	815.2
69°	7939.6	5655.4	631.3	503.1	551.8	664.5	774.9	738.1	721.5	811.6	780.8
70°	7220.5	4966.0	582.7	490.1	532.8	649.1	755.9	729.8	710.7	781.9	745.2
72.5°	5177.2	3209.8	490.1	450.9	482.9	614.7	714.3	698.9	670.4	706.0	682.3
75°	3127.9	1675.5	416.5	410.6	430.8	567.2	665.7	646.7	618.3	621.7	609.9
77.5°	1436.9	773.7	348.8	363.1	376.1	507.9	606.4	585.0	558.9	549.4	550.6
80°	630.1	452.1	292.0	309.7	316.8	456.8	542.3	518.5	490.1	541.1	502.0
82.5°	340.5	262.3	227.8	239.7	259.8	397.5	471.1	440.3	413.0	480.6	388.0
85°	137.7	134.1	154.3	166.1	180.3	286.0	393.9	361.9	328.7	294.3	287.1
87.5°	59.3	64.0	75.9	80.7	96.2	178.0	264.6	231.4	232.6	199.4	195.8
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)