

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: P196660

Luminaire Tested: **NAV-AF-04-D-UNV-SL4-7030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196660
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
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-SL4-7030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL
LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14831.9 lumens
Efficiency: N/A
Efficacy: 115.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

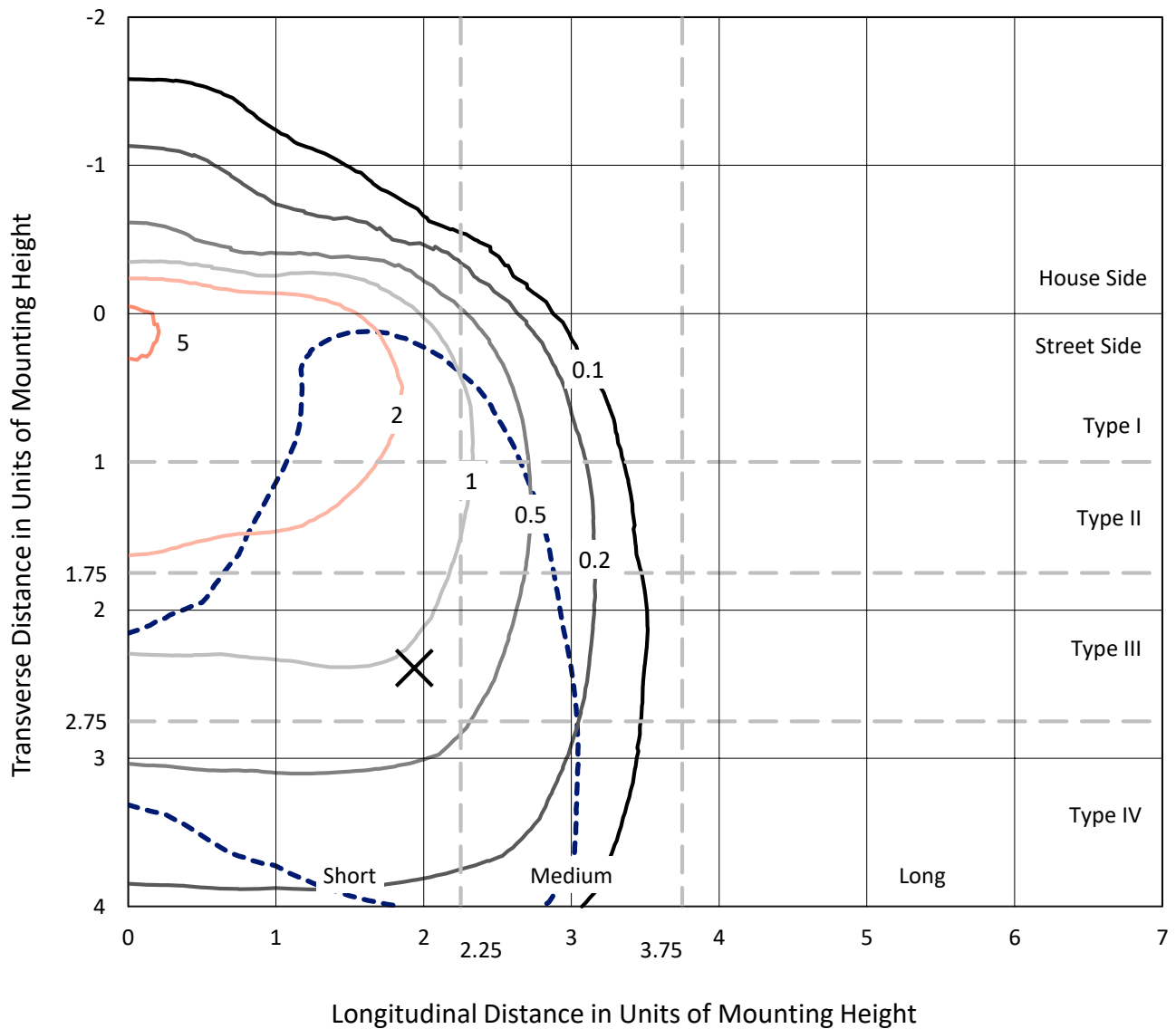
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

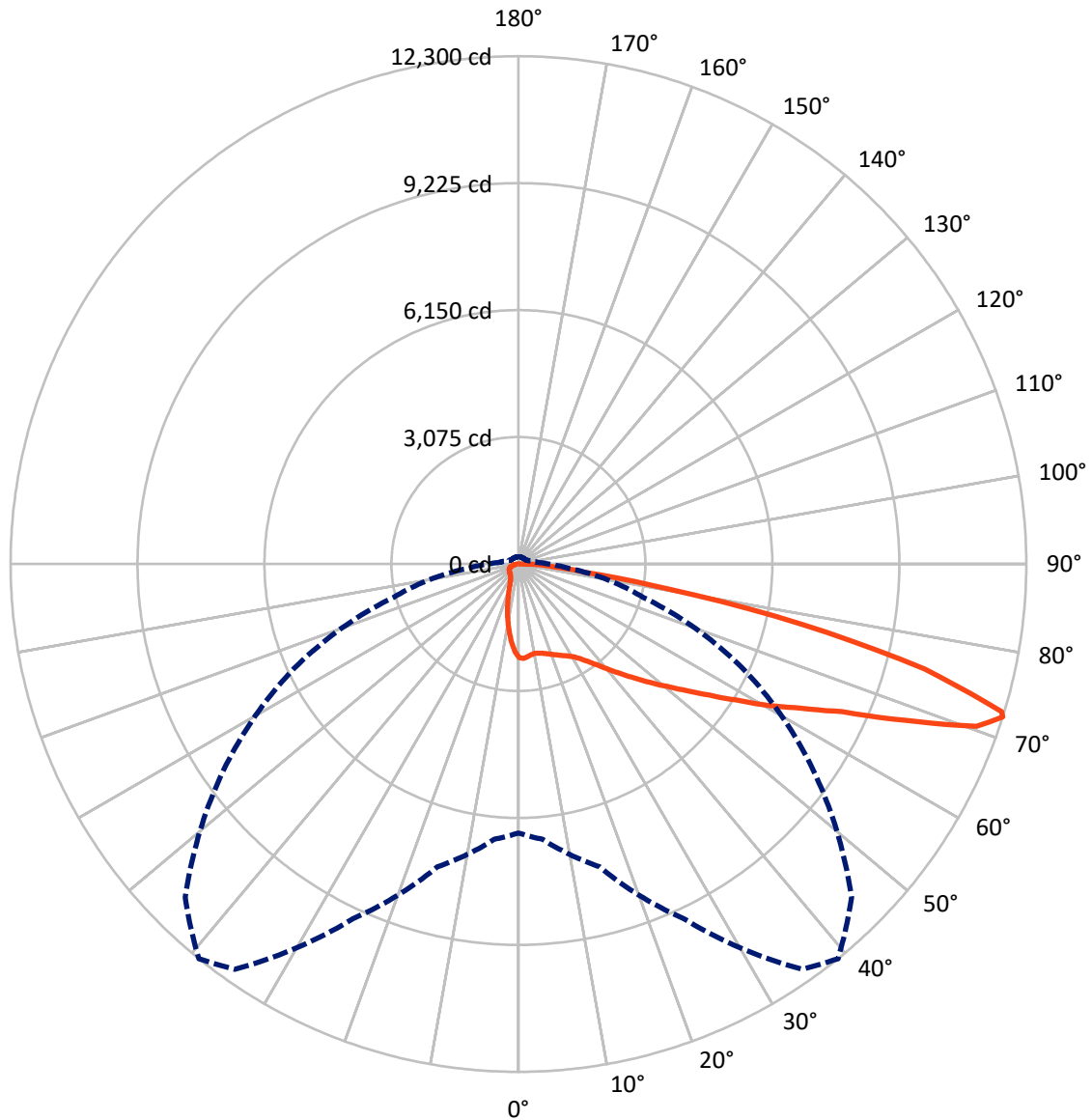
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.7 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	1700.7	0.0	1700.7
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	13131.3	0.0	13131.3
	% Fixture	88.5	0.0	88.5
Total	Lumens	14831.9	0.0	14831.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	194.7	1.3
10°-20°	489.1	3.3
20°-30°	762.2	5.1
30°-40°	1173.6	7.9
40°-50°	1913.3	12.9
50°-60°	2973.0	20.0
60°-70°	3979.2	26.8
70°-80°	2861.7	19.3
80°-90°	485.1	3.3
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°	14831.9	100.0
0°-180°	14831.9	100.0



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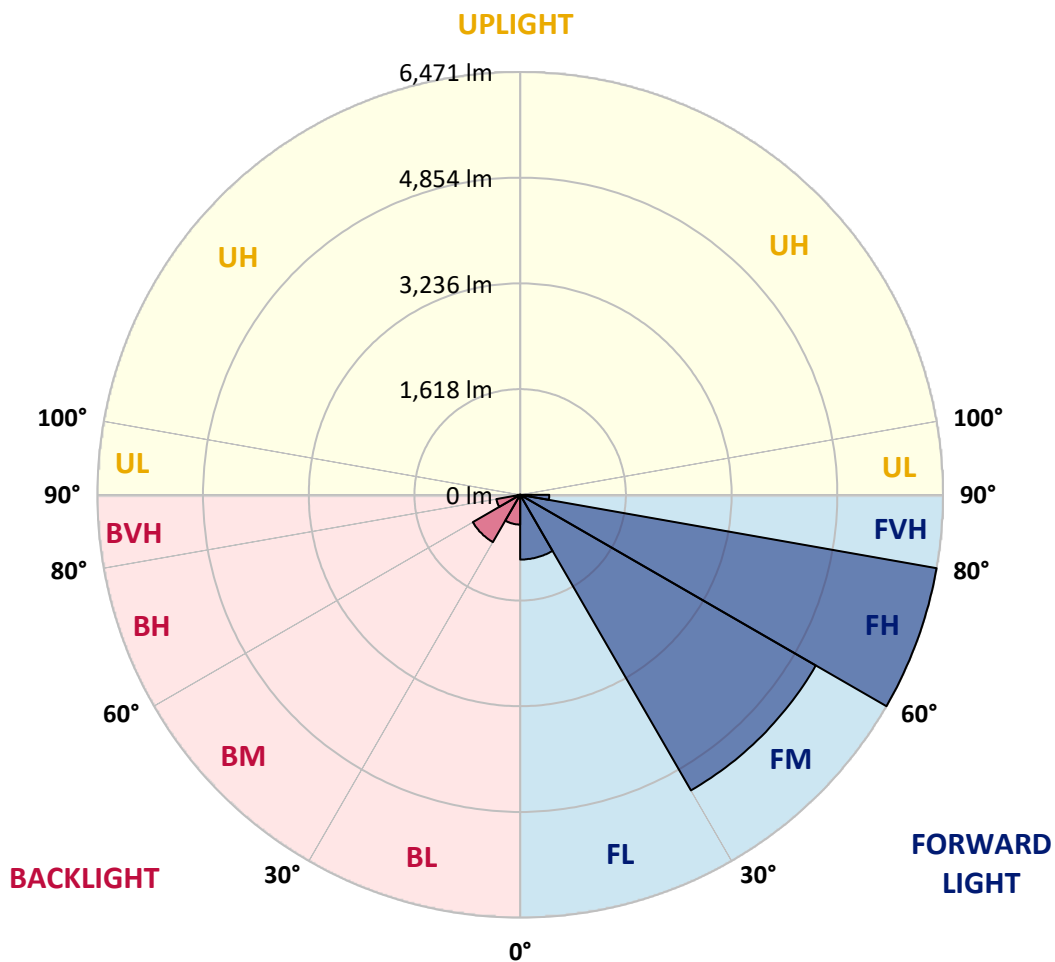
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	990.7	6.7			
FM	(30°-60°)	5224.1	35.2			
FH	(60°-80°)	6471.4	43.6			G3/7500
FVH	(80°-90°)	445.0	3.0			G3/500
BL	(0°-30°)	455.3	3.1	B1/500		
BM	(30°-60°)	835.8	5.6	B1/1000		
BH	(60°-80°)	369.5	2.5	B1/500		G1/500
BVH	(80°-90°)	40.1	0.3			G1/100
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°	2265.1	2265.1	2265.1	2265.1	2265.1	2265.1	2265.1	2265.1	2265.1	2265.1	2265.1
2.5°	2313.9	2314.8	2311.9	2302.9	2295.0	2290.9	2284.1	2272.0	2256.1	2245.2	2236.2
5°	2292.0	2295.0	2293.1	2278.0	2264.1	2256.1	2245.2	2228.3	2207.4	2198.4	2177.5
7.5°	2275.1	2277.1	2271.1	2254.1	2227.2	2217.3	2197.4	2175.5	2156.6	2143.6	2118.7
10°	2263.1	2265.1	2260.1	2243.2	2213.4	2201.3	2177.5	2153.6	2128.7	2112.7	2084.8
12.5°	2246.2	2250.2	2250.2	2242.2	2222.4	2214.3	2190.4	2164.5	2141.6	2124.8	2089.9
15°	2243.2	2248.2	2257.2	2256.1	2250.2	2244.1	2225.3	2199.4	2179.5	2159.6	2116.8
17.5°	2268.1	2279.0	2296.9	2302.9	2299.0	2286.0	2264.1	2240.3	2218.3	2199.4	2146.6
20°	2330.8	2336.8	2363.8	2375.7	2355.7	2336.8	2307.9	2277.1	2257.2	2242.2	2174.5
22.5°	2425.4	2433.4	2455.3	2456.2	2414.4	2391.5	2354.7	2316.9	2297.9	2292.0	2212.3
25°	2576.8	2574.8	2580.7	2555.8	2480.1	2453.3	2408.5	2364.7	2351.7	2363.8	2268.1
27.5°	2757.9	2753.0	2734.1	2669.3	2554.8	2519.9	2466.2	2427.4	2427.4	2455.3	2343.7
30°	2967.1	2962.0	2900.3	2791.8	2643.4	2603.6	2546.9	2506.1	2526.9	2580.7	2446.4
32.5°	3188.0	3170.1	3083.6	2938.2	2769.9	2726.1	2671.3	2629.6	2669.3	2761.0	2593.7
35°	3396.3	3386.2	3279.6	3107.5	2933.2	2896.4	2858.5	2806.8	2870.5	3012.9	2801.7
37.5°	3611.2	3603.3	3472.8	3289.6	3132.4	3107.5	3075.5	3039.7	3142.3	3329.4	3083.6
40°	3851.2	3835.2	3671.0	3487.8	3364.3	3352.4	3335.4	3325.6	3490.8	3769.6	3439.9
42.5°	4123.0	4092.1	3880.1	3705.8	3617.2	3627.2	3618.2	3658.0	3910.9	4277.3	3864.2
45°	4433.6	4371.9	4088.2	3937.8	3897.0	3936.8	3955.7	4057.3	4407.7	4863.7	4338.0
47.5°	4724.4	4644.7	4316.2	4189.6	4212.6	4281.4	4335.1	4514.3	4952.4	5443.2	4821.9
50°	4992.2	4902.6	4560.1	4450.5	4562.1	4659.7	4771.2	5024.1	5531.8	6039.7	5266.0
52.5°	5190.4	5125.6	4804.0	4735.3	4963.3	5092.8	5271.0	5590.6	6117.3	6608.1	5662.3
55°	5343.7	5308.8	5042.0	5061.9	5417.3	5602.5	5818.6	6185.9	6736.6	7117.9	5980.9
57.5°	5520.9	5494.9	5313.9	5456.2	5980.9	6213.9	6468.7	6877.0	7326.0	7567.0	6230.7
60°	5708.0	5708.0	5616.5	5931.1	6685.8	6952.6	7206.5	7524.1	7913.4	7971.2	6332.3
62.5°	5849.4	5886.3	5919.1	6436.9	7354.9	7686.4	7965.2	8269.9	8521.7	8170.3	6093.4
65°	6054.6	6133.2	6318.4	7021.3	8183.3	8617.4	8993.6	9249.6	9014.7	8012.0	5313.9
67.5°	6407.0	6523.6	6917.7	7891.6	9451.7	10101.9	10467.2	10025.2	8918.1	7015.3	4070.2
70°	6724.6	6888.9	7562.9	8995.8	11100.5	11775.5	11607.2	9845.1	7767.0	5142.5	2504.1
72°	6513.5	6692.7	7592.9	9476.6	11981.7	12300.3	11413.1	8724.9	6001.8	3138.3	1234.6
72.5°	6375.2	6561.3	7496.3	9464.7	12005.5	12233.5	11143.4	8279.7	5448.2	2746.0	998.6
75°	5325.8	5485.1	6445.9	8388.4	10579.8	10161.6	8696.1	5358.6	2504.1	887.0	513.7
77.5°	3477.8	3599.3	4444.5	5811.6	7410.6	7008.4	5292.8	2509.0	938.9	538.6	386.3
80°	1747.4	1834.0	2378.6	3055.7	3999.6	3680.0	2443.4	1213.7	628.2	389.3	303.6
82.5°	1215.7	1295.4	1637.8	1560.2	1671.6	1617.9	1149.0	1012.7	470.0	246.0	159.3
85°	1019.5	1102.2	1355.1	1112.1	910.0	829.4	823.4	956.8	310.7	121.5	134.4
87.5°	889.2	1014.6	1118.2	812.5	624.3	550.5	606.4	877.2	98.6	66.7	40.9
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°	2265.1	2265.1	2265.1	2265.1	2265.1	2265.1	2265.1	2265.1	2265.1	2265.1	2265.1
2.5°	2221.3	2218.3	2203.3	2180.5	2163.6	2152.6	2131.6	2130.7	2132.6	2114.7	2121.7
5°	2158.5	2146.6	2107.8	2055.0	2012.2	1971.4	1926.6	1911.6	1898.7	1871.8	1874.8
7.5°	2092.9	2072.0	2004.3	1917.6	1835.0	1759.3	1684.7	1647.8	1619.9	1585.1	1585.1
10°	2054.1	2021.2	1917.6	1791.2	1659.7	1549.2	1437.8	1370.9	1322.2	1277.5	1274.4
12.5°	2052.0	2002.2	1857.9	1683.6	1503.4	1348.1	1195.8	1093.2	1020.6	967.8	962.8
15°	2068.0	1998.3	1808.1	1583.0	1356.1	1154.0	965.8	835.4	742.8	684.0	678.1
17.5°	2081.9	1993.3	1754.3	1477.5	1212.7	966.7	757.7	622.2	534.8	486.9	482.0
20°	2094.8	1982.3	1685.7	1366.1	1054.4	791.6	592.4	482.9	425.1	398.2	395.3
22.5°	2113.7	1972.3	1614.0	1240.5	899.1	644.2	488.8	410.2	379.3	366.3	364.4
25°	2144.6	1973.3	1544.3	1112.1	756.7	536.7	423.2	374.3	357.4	348.4	348.4
27.5°	2189.4	1985.4	1475.5	981.7	636.2	462.9	384.4	355.4	344.5	337.5	335.5
30°	2255.1	2007.2	1402.9	858.2	540.7	412.2	361.4	343.5	334.6	328.6	327.6
32.5°	2350.7	2046.1	1326.2	745.7	467.9	376.4	344.5	333.6	326.5	321.6	320.5
35°	2493.1	2114.7	1251.6	650.2	416.2	350.5	330.5	321.6	317.6	315.6	314.6
37.5°	2702.2	2225.3	1180.9	575.5	382.3	333.6	316.7	311.6	309.6	309.6	309.6
40°	2965.1	2370.6	1117.0	522.7	363.4	320.5	306.7	302.6	302.6	303.6	303.6
42.5°	3284.7	2552.9	1062.3	486.9	352.5	311.6	299.7	297.7	296.7	296.7	297.7
45°	3656.1	2767.9	1028.4	459.0	344.5	306.7	294.7	293.7	289.7	287.8	287.8
47.5°	4029.4	2997.8	1026.5	443.0	334.6	300.7	289.7	289.7	281.8	277.7	278.8
50°	4377.9	3204.0	1048.5	439.1	328.6	291.7	284.7	285.7	274.8	269.9	268.8
52.5°	4658.6	3361.4	1075.3	444.0	328.6	283.7	275.8	280.8	268.8	262.9	261.9
55°	4875.7	3470.8	1085.3	455.1	332.5	276.8	267.8	275.8	266.8	258.8	258.8
57.5°	5031.1	3505.7	1042.5	460.0	338.4	275.8	259.8	274.8	269.9	259.8	259.8
60°	4974.2	3303.6	883.2	441.1	337.5	273.8	253.9	276.8	279.8	268.8	268.8
62.5°	4531.2	2763.9	708.9	398.2	320.5	266.8	246.9	274.8	286.7	282.8	280.8
65°	3688.9	2027.2	549.6	347.5	291.7	252.0	231.9	256.9	270.9	274.8	275.8
67.5°	2599.6	1283.4	427.1	295.6	255.8	230.0	215.0	227.0	231.9	234.0	237.9
70°	1421.8	695.0	339.5	248.9	219.1	208.1	197.1	198.1	196.1	194.2	196.1
72°	713.9	454.0	286.7	216.0	194.2	187.2	182.3	179.1	179.1	176.2	177.2
72.5°	614.4	422.2	276.8	208.1	188.2	182.3	178.2	175.3	174.3	172.3	173.2
75°	409.1	334.6	231.0	174.3	160.3	156.3	158.3	155.3	156.3	154.3	155.3
77.5°	330.5	287.8	196.1	147.4	137.4	131.4	135.4	136.3	138.4	136.3	135.4
80°	276.8	245.0	164.3	121.5	114.5	109.5	111.6	118.4	119.5	113.5	112.5
82.5°	179.1	197.1	129.5	94.6	87.6	85.7	90.5	97.6	99.5	91.6	89.6
85°	150.3	158.3	93.6	64.7	57.8	55.7	65.7	72.6	77.7	69.7	67.7
87.5°	41.8	77.7	45.8	30.8	25.9	25.9	31.9	37.8	44.8	45.8	45.8
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)