

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: P163243

Luminaire Tested: **LDRL-SL2-F02-E-7050-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P163243
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33726)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-SL2-F02-E-7050-HSS
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 2 W/ SPILL LIGHT CONTROL AND HOUSE SIDE SHIELD
Light Source: (14) 5000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3013.1 lumens
Efficiency: N/A
Efficacy: 54.8 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 1' x H: 0.1')
IES Classification: Type II - Short - Non-Cutoff
BUG Rating: B0 - U0 - G1

Input Watts (W): 55
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

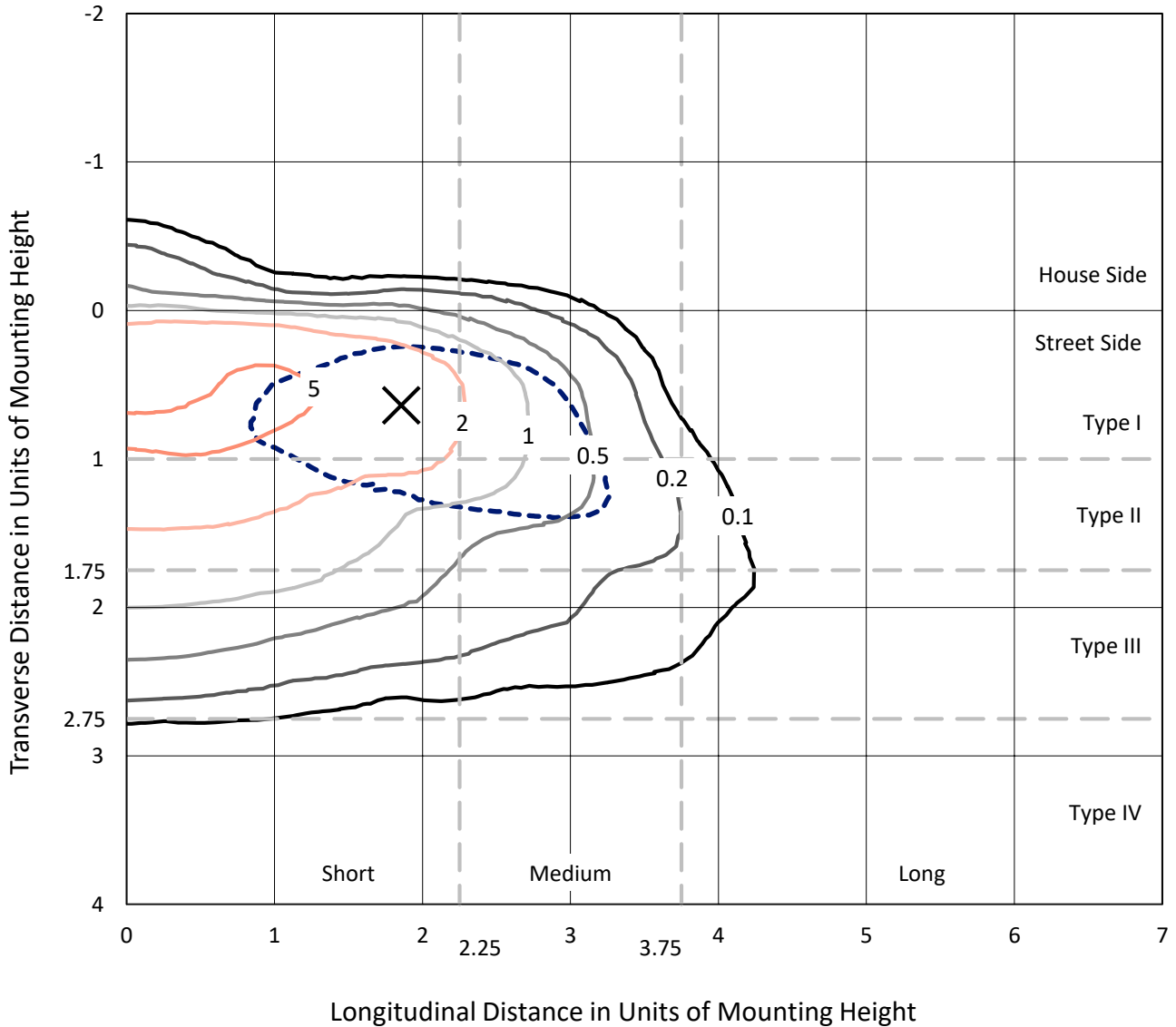


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Iso-Footcandle Lines of Horizontal Illumination

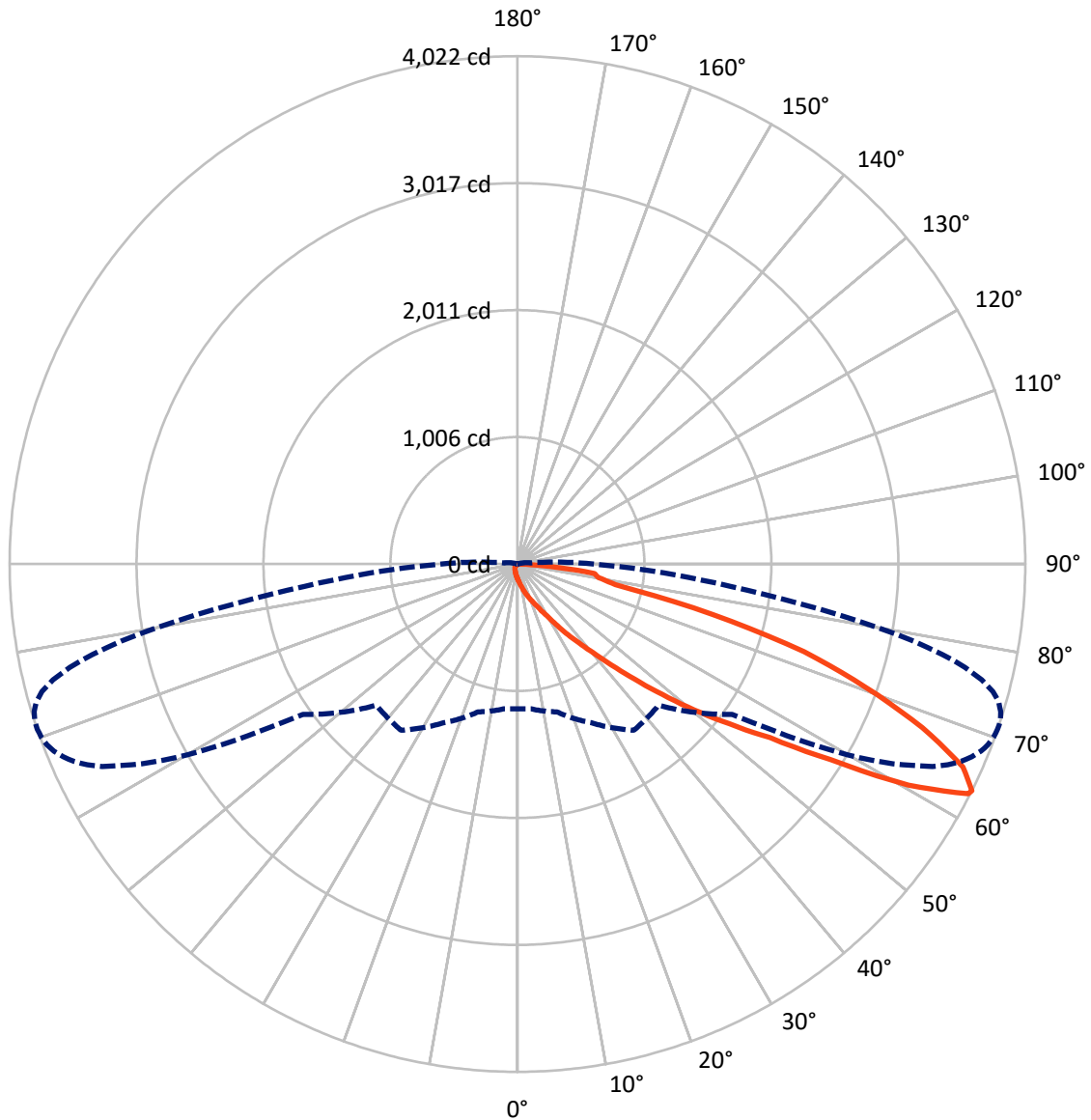
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 6.3 fc
 Type II - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 71-Deg Lateral - - - Horizontal Cone Through 63-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	64.0	0.0	64.0
	% Fixture	2.1	0.0	2.1
Street Side	Lumens	2949.2	0.0	2949.2
	% Fixture	97.9	0.0	97.9
Total	Lumens	3013.1	0.0	3013.1
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	12.8	0.4
10°-20°	49.5	1.6
20°-30°	100.6	3.3
30°-40°	245.9	8.2
40°-50°	549.8	18.2
50°-60°	773.1	25.7
60°-70°	909.2	30.2
70°-80°	328.3	10.9
80°-90°	43.9	1.5
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°	3013.1	100.0
0°-180°	3013.1	100.0



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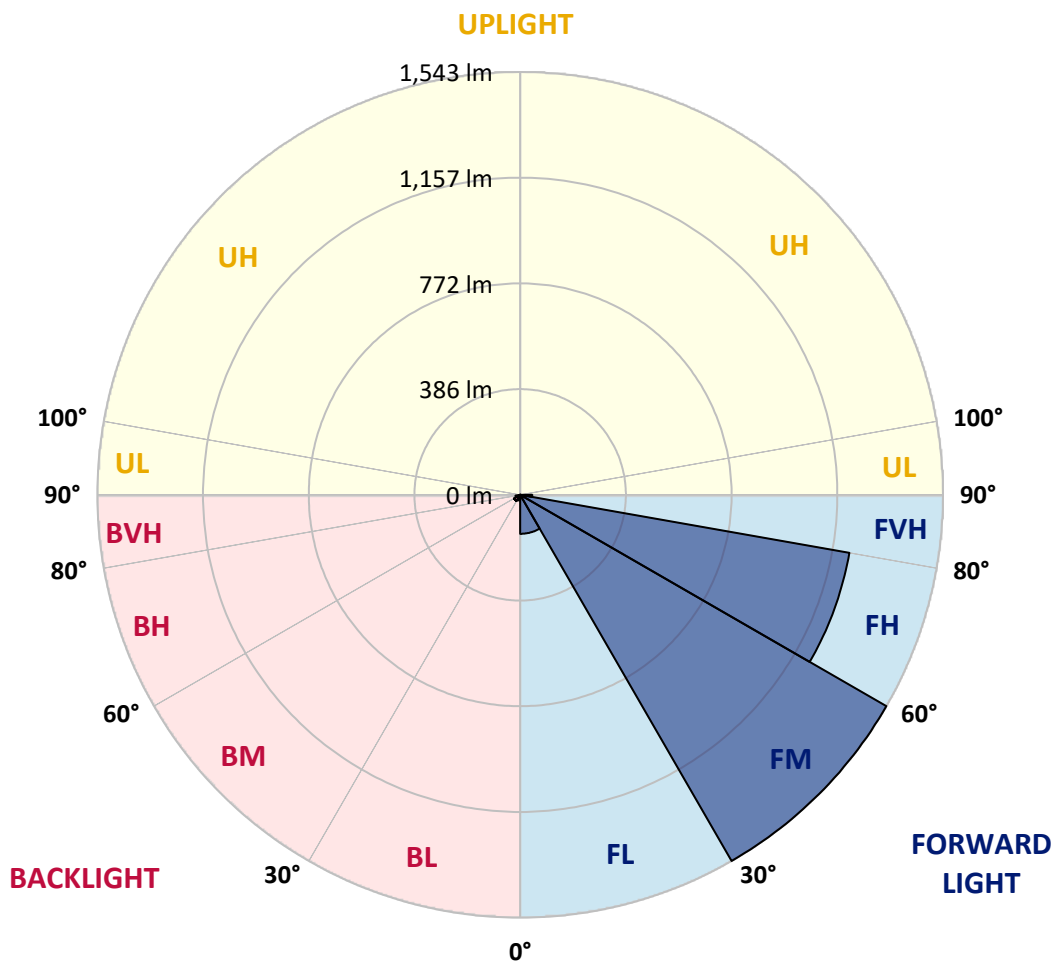
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	142.4	4.7			
FM (30°-60°)	1543.1	51.2			
FH (60°-80°)	1219.9	40.5			G1/1800
FVH (80°-90°)	43.8	1.5			G1/100
BL (0°-30°)	20.6	0.7	B0/110		
BM (30°-60°)	25.8	0.9	B0/220		
BH (60°-80°)	17.5	0.6	B0/110		G0/110
BVH (80°-90°)	0.1	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B0-U0-G1

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	56°	57°	58°	59°
0°	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6
2.5°	151.2	152.8	151.7	149.0	145.7	141.3	137.5	137.5	137.0	135.3	135.8
5°	198.3	198.8	196.7	190.1	184.1	174.7	164.3	163.2	162.1	160.5	160.0
7.5°	244.3	246.5	244.3	237.2	225.1	210.9	194.5	192.8	189.5	189.5	187.3
10°	291.4	291.4	289.2	281.0	270.0	249.8	229.0	226.2	222.4	221.3	218.0
12.5°	324.8	324.8	323.7	319.3	310.6	292.5	267.3	264.6	259.6	258.0	254.2
15°	338.0	338.0	338.5	342.4	342.9	334.7	308.4	306.2	301.3	296.9	295.3
17.5°	346.2	345.6	345.6	351.1	361.0	366.4	349.5	347.3	341.8	339.6	334.2
20°	364.3	363.2	359.9	359.9	369.2	388.4	388.4	387.8	381.8	380.2	377.4
22.5°	391.1	390.0	380.2	371.9	376.3	400.4	422.9	421.8	419.6	417.4	415.7
25°	434.9	431.1	414.1	390.0	386.2	411.9	449.2	451.9	453.6	453.6	454.6
27.5°	501.2	496.3	466.2	421.2	404.3	430.6	478.2	483.7	488.6	489.7	494.6
30°	593.2	584.5	541.2	475.5	436.6	457.9	520.9	526.9	534.1	536.3	543.9
32.5°	744.4	739.5	697.9	599.3	516.0	511.6	580.6	588.3	597.6	601.5	610.8
35°	974.5	975.6	941.6	852.9	737.8	677.6	687.5	694.0	697.3	708.8	713.7
37.5°	1130.6	1133.3	1141.0	1105.9	1023.8	962.4	885.2	892.3	875.3	877.0	877.5
40°	1216.1	1224.8	1269.7	1303.7	1297.1	1261.5	1199.6	1203.5	1171.7	1164.6	1130.0
42.5°	1273.0	1284.5	1356.3	1461.4	1515.1	1547.4	1533.2	1531.6	1506.9	1497.6	1468.6
45°	1308.6	1319.0	1409.4	1564.4	1688.2	1782.5	1821.3	1825.7	1804.9	1795.6	1771.5
47.5°	1307.0	1319.0	1416.0	1602.8	1785.2	1935.8	2045.4	2050.8	2063.4	2055.2	2056.9
50°	1234.7	1246.2	1343.7	1537.6	1756.7	2005.9	2206.4	2223.9	2244.2	2257.9	2264.5
52.5°	1147.0	1155.2	1241.8	1425.8	1635.1	1976.9	2301.7	2331.9	2362.0	2387.7	2405.8
55°	1114.7	1124.0	1191.9	1344.8	1537.6	1855.3	2346.1	2390.5	2433.2	2475.4	2509.9
57.5°	1131.7	1140.5	1189.2	1306.4	1479.5	1727.1	2358.7	2427.7	2497.8	2566.3	2634.2
60°	1194.1	1203.5	1245.1	1342.0	1464.2	1653.2	2309.4	2423.9	2540.5	2660.0	2772.3
62.5°	1169.5	1173.3	1234.7	1404.5	1573.7	1590.2	2130.3	2290.2	2468.2	2652.3	2833.6
63°	1145.9	1150.3	1212.8	1387.5	1607.2	1580.9	2075.0	2243.7	2431.5	2629.8	2827.0
65°	1039.1	1039.7	1087.3	1225.3	1569.9	1597.3	1828.5	1989.5	2205.3	2443.1	2692.3
67.5°	775.7	771.8	817.8	923.0	1232.5	1597.9	1569.4	1659.7	1809.8	2020.7	2244.2
70°	275.0	269.0	343.4	489.2	768.0	1307.0	1348.6	1354.6	1396.3	1510.2	1650.4
72.5°	89.3	90.9	109.5	179.1	353.9	879.7	1221.0	1202.3	1191.4	1190.9	1209.5
75°	35.6	36.2	43.8	79.4	158.8	424.0	1069.2	1079.6	1083.5	1089.0	1095.0
77.5°	17.0	18.6	24.6	44.4	78.9	209.8	765.2	853.4	903.8	942.7	966.3
80°	6.0	7.1	13.7	27.4	36.7	96.4	403.2	486.4	560.4	655.7	737.8
82.5°	0.0	0.0	2.7	19.2	20.3	38.9	165.4	193.9	221.8	287.6	369.2
85°	0.0	0.0	0.0	5.5	6.0	6.6	55.9	67.4	75.6	88.2	101.9
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.6	3.3	8.2	12.6
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):

	60°	61°	62°	64°	65°	66°	67°	68°	69°	70°	71°
0°	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6
2.5°	134.8	134.2	134.2	133.1	132.6	131.5	130.9	129.3	128.7	128.7	128.7
5°	159.4	157.2	156.1	153.4	151.7	151.2	148.4	147.4	145.7	146.2	143.5
7.5°	186.8	183.0	181.3	177.5	176.4	172.5	171.4	168.7	167.1	163.8	162.7
10°	216.9	212.0	209.3	203.2	201.6	198.8	195.5	192.3	189.5	186.3	184.6
12.5°	251.4	247.0	244.8	236.6	232.8	229.0	224.6	220.2	215.8	213.1	209.3
15°	292.0	284.9	282.7	275.0	268.4	263.5	257.4	252.0	248.7	243.2	239.4
17.5°	332.0	324.8	323.2	311.7	304.6	301.3	294.7	287.6	281.6	276.1	270.0
20°	371.9	367.0	362.6	351.7	344.0	338.5	329.7	322.6	317.7	310.0	302.4
22.5°	411.9	407.0	403.7	392.2	385.1	377.4	369.7	362.1	355.0	345.6	336.9
25°	453.0	449.7	448.1	437.7	431.1	424.0	416.3	407.5	398.8	388.4	379.0
27.5°	495.7	496.8	493.5	491.3	484.2	479.3	467.2	461.2	454.6	442.0	430.6
30°	550.0	553.2	552.2	553.8	549.4	546.1	536.8	529.2	521.5	509.4	496.3
32.5°	618.4	622.8	625.0	631.0	628.8	627.8	625.0	614.1	608.6	587.8	582.3
35°	724.1	721.9	731.3	736.2	734.0	732.9	729.6	723.6	717.0	702.2	688.5
37.5°	861.6	863.8	867.1	857.3	850.7	850.1	840.3	834.3	825.0	808.5	792.1
40°	1113.6	1099.9	1084.6	1043.0	1024.9	1014.5	985.5	977.2	961.3	938.9	921.9
42.5°	1441.2	1427.5	1381.5	1311.9	1274.6	1223.2	1199.6	1170.6	1148.1	1111.4	1091.7
45°	1766.6	1727.1	1721.6	1640.6	1594.6	1526.6	1484.4	1435.7	1384.8	1336.5	1301.5
47.5°	2041.0	2032.2	2005.4	1956.1	1913.4	1856.4	1802.2	1727.1	1674.5	1606.1	1543.1
50°	2260.6	2260.1	2250.2	2221.7	2186.2	2140.2	2092.5	2028.9	1969.2	1885.4	1818.1
52.5°	2425.0	2433.7	2437.0	2428.3	2414.6	2374.0	2349.9	2296.8	2246.4	2175.2	2102.3
55°	2545.5	2577.8	2594.3	2612.9	2609.0	2594.8	2593.7	2559.2	2536.2	2479.8	2428.3
57.5°	2694.5	2747.6	2798.6	2888.9	2892.2	2924.0	2940.4	2956.9	2961.2	2938.8	2921.8
60°	2884.0	2992.5	3088.9	3277.8	3327.1	3404.9	3455.3	3510.1	3556.7	3560.5	3559.4
62.5°	3017.7	3184.7	3340.3	3620.8	3716.6	3806.5	3873.8	3927.0	3959.3	3992.1	4007.5
63°	3021.5	3204.5	3369.9	3659.1	3759.9	3845.4	3909.4	3958.7	3992.7	4012.4	4022.3
65°	2928.9	3150.8	3348.0	3636.1	3730.9	3816.9	3850.3	3882.6	3899.0	3906.7	3877.7
67.5°	2482.5	2699.4	2929.5	3251.6	3332.6	3435.6	3463.0	3479.4	3487.1	3485.4	3460.8
70°	1856.4	2038.3	2294.1	2662.2	2769.5	2870.3	2932.7	2959.6	2968.4	2965.6	2928.9
72.5°	1296.0	1402.8	1613.7	2023.5	2169.7	2299.0	2376.2	2416.2	2424.4	2408.0	2374.0
75°	1088.4	1093.9	1141.6	1365.6	1502.5	1640.6	1727.7	1752.9	1736.4	1686.6	1600.0
77.5°	971.7	983.8	983.8	1017.2	1044.0	1082.4	1090.6	1029.3	958.0	866.0	791.5
80°	815.1	857.3	886.9	911.5	914.2	906.6	886.3	851.8	797.0	726.9	649.1
82.5°	495.2	578.5	612.4	739.5	801.9	844.1	840.8	794.8	753.2	680.3	614.1
85°	124.9	134.8	146.2	190.1	213.1	260.2	289.8	303.5	308.4	283.2	256.4
87.5°	12.1	8.2	13.7	10.4	14.8	10.9	14.8	13.7	17.0	18.1	19.7
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):

	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°	82°
0°	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6
2.5°	127.6	127.1	126.5	126.0	125.4	124.9	123.8	123.8	122.7	122.1	121.6
5°	141.9	140.8	140.2	139.1	137.5	136.4	134.8	132.6	130.9	130.4	129.3
7.5°	160.0	157.2	156.1	154.5	152.3	149.0	146.8	145.2	142.4	140.8	137.5
10°	180.2	177.5	174.2	170.9	167.6	163.8	161.0	158.8	154.5	152.3	148.4
12.5°	206.0	201.0	197.2	192.8	188.4	184.1	180.8	174.2	170.4	165.4	162.1
15°	232.3	227.9	223.5	218.0	211.4	204.3	201.0	195.0	190.1	182.4	178.0
17.5°	264.0	255.8	249.2	242.7	236.6	230.1	223.5	214.2	207.1	200.5	191.7
20°	295.3	285.4	278.3	269.5	260.7	250.3	242.7	236.1	226.2	217.5	208.1
22.5°	328.7	318.8	307.3	298.5	286.5	278.3	267.8	256.9	247.0	235.6	224.0
25°	369.2	358.8	345.6	334.2	320.4	308.9	296.3	283.7	271.7	258.6	243.8
27.5°	419.0	408.1	393.9	380.2	362.1	347.8	335.8	318.8	303.5	287.0	270.0
30°	482.1	470.0	452.5	432.8	414.7	398.8	381.8	359.3	342.4	322.6	300.7
32.5°	564.2	550.0	526.4	507.8	485.3	464.5	441.0	418.5	394.4	368.6	343.4
35°	667.7	654.6	627.2	599.8	575.2	550.5	520.9	495.2	461.2	430.0	397.7
37.5°	775.1	751.5	726.4	696.8	666.1	636.5	600.3	564.8	525.9	491.9	451.4
40°	897.8	869.3	848.5	816.7	773.4	731.3	697.9	653.5	604.7	559.3	511.6
42.5°	1066.0	1034.2	996.9	948.7	917.5	868.2	825.0	772.4	708.3	657.3	599.8
45°	1260.4	1217.1	1181.0	1134.4	1096.6	1035.3	984.9	914.8	850.7	783.8	713.7
47.5°	1482.3	1428.6	1376.0	1330.0	1269.7	1209.5	1145.4	1070.9	988.7	915.3	832.1
50°	1737.0	1660.8	1588.0	1528.8	1446.1	1376.5	1307.0	1223.2	1132.2	1047.9	953.1
52.5°	2020.2	1932.0	1835.6	1744.6	1648.8	1559.5	1475.7	1379.3	1277.9	1175.0	1069.2
55°	2362.0	2295.7	2182.3	2066.7	1938.5	1819.1	1711.2	1591.8	1468.6	1333.3	1222.1
57.5°	2897.2	2864.8	2770.1	2654.5	2487.4	2342.3	2159.3	2013.1	1834.5	1648.2	1504.7
60°	3622.4	3582.4	3529.3	3435.6	3303.1	3105.9	2904.3	2677.0	2405.3	2147.3	1902.4
62.5°	4009.1	3994.9	3951.6	3887.0	3763.2	3607.6	3404.4	3154.6	2847.9	2534.5	2222.3
63°	4020.6	4002.6	3965.3	3899.6	3790.6	3639.9	3440.6	3197.9	2897.7	2578.4	2259.6
65°	3865.1	3858.0	3820.1	3748.4	3673.9	3558.9	3404.4	3195.7	2943.7	2641.9	2324.7
67.5°	3427.9	3406.6	3348.5	3326.6	3274.6	3194.6	3076.8	2933.3	2753.1	2515.9	2242.0
70°	2899.3	2867.6	2794.7	2755.8	2692.3	2641.9	2570.1	2467.7	2356.5	2191.1	1986.8
72.5°	2339.0	2273.2	2206.4	2105.1	2016.3	1926.5	1847.1	1774.8	1652.6	1585.8	1430.8
75°	1519.0	1399.5	1285.1	1131.7	993.7	871.5	752.6	692.4	566.9	516.0	443.2
77.5°	720.9	654.0	564.2	494.6	405.9	331.4	270.6	203.2	159.4	124.9	95.3
80°	581.7	525.3	471.1	408.1	341.3	272.3	208.7	156.1	110.7	76.7	54.2
82.5°	518.7	457.4	390.6	347.3	301.8	247.0	202.7	165.4	122.1	89.3	60.8
85°	201.6	169.8	130.9	106.8	83.3	68.5	61.9	42.7	33.4	26.3	20.3
87.5°	17.5	14.2	11.5	7.7	8.2	4.4	4.9	3.3	2.7	2.7	2.2
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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CATALOG NUMBER: LDRL-SL2-F02-E-7050-HSS

CANDELA DISTRIBUTION (continued):

	83°	84°	85°	86°	87°	88°	89°	90°	95°	105°	115°
0°	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6	115.6
2.5°	121.1	120.5	119.9	118.9	118.9	117.8	117.2	116.7	113.9	107.9	103.0
5°	127.1	126.0	124.9	123.2	122.1	120.5	119.4	117.8	111.7	100.2	90.4
7.5°	135.8	133.7	132.0	128.7	127.1	124.9	123.2	120.5	110.7	93.1	79.4
10°	146.2	142.4	139.7	135.8	132.6	129.8	127.1	123.2	109.5	85.5	69.6
12.5°	158.8	154.5	149.0	144.6	140.2	136.4	132.6	127.6	107.9	78.9	61.9
15°	171.4	164.9	161.0	155.0	149.0	143.5	138.0	133.7	108.5	71.8	55.3
17.5°	185.7	179.1	170.9	164.3	157.8	150.6	144.1	135.3	105.7	66.3	50.4
20°	199.4	190.1	182.4	174.2	164.9	156.1	147.9	140.2	103.5	60.8	46.0
22.5°	214.2	203.2	193.4	183.0	171.4	161.6	151.7	141.9	99.7	55.9	42.2
25°	232.3	219.7	205.4	192.8	180.8	168.7	156.1	144.1	95.9	51.5	39.4
27.5°	254.2	237.7	223.5	207.6	190.6	175.3	161.6	148.4	92.0	48.2	36.7
30°	282.1	262.9	242.7	222.4	204.3	186.8	167.6	151.2	88.2	44.9	34.0
32.5°	319.3	295.3	270.6	247.0	223.0	200.5	180.2	158.8	86.0	42.2	31.2
35°	368.6	337.4	307.3	277.7	248.7	221.3	195.0	170.9	86.0	38.9	27.9
37.5°	415.2	379.0	340.7	304.0	269.5	237.7	206.5	177.5	81.6	36.2	25.2
40°	465.6	422.3	377.4	334.2	292.5	253.1	217.5	184.1	77.8	32.9	22.5
42.5°	542.8	488.1	429.5	379.0	329.2	280.4	236.1	196.7	72.8	29.6	19.7
45°	644.2	574.6	505.6	444.2	380.7	321.0	268.4	219.7	71.8	26.8	17.0
47.5°	752.6	670.5	589.4	511.1	436.6	367.0	304.0	245.4	71.8	24.1	14.8
50°	860.6	757.6	671.0	580.1	496.3	414.1	339.1	272.3	72.3	21.9	12.1
52.5°	958.0	848.0	751.0	645.8	553.2	457.9	376.3	298.5	71.2	19.2	9.9
55°	1093.3	964.1	851.8	735.7	627.2	519.8	427.3	338.0	71.8	17.0	8.2
57.5°	1342.6	1190.9	1055.6	903.3	778.4	639.8	527.5	419.0	78.3	14.2	6.0
60°	1700.3	1503.1	1313.0	1127.3	968.4	803.6	657.9	530.2	92.0	11.5	4.4
62.5°	1940.8	1682.7	1456.0	1251.1	1066.5	894.0	735.1	589.9	101.3	9.3	2.7
63°	1965.4	1698.6	1470.8	1259.3	1070.9	898.3	738.4	594.3	101.9	8.8	2.7
65°	2012.0	1726.0	1479.0	1261.0	1066.5	892.3	736.2	593.8	103.0	7.1	2.2
67.5°	1958.8	1683.9	1431.3	1213.9	1028.2	856.7	708.8	571.9	102.4	4.9	1.6
70°	1751.8	1523.9	1302.1	1099.4	930.7	775.7	645.3	521.5	94.2	3.3	1.1
72.5°	1286.2	1131.2	959.2	812.9	701.1	582.3	496.8	391.7	72.8	2.2	0.5
75°	381.3	347.3	292.0	257.4	227.3	187.9	167.1	130.4	37.2	1.1	0.0
77.5°	76.1	69.0	61.9	56.4	53.1	45.5	43.3	35.6	15.3	0.5	0.0
80°	40.0	32.9	27.9	24.6	21.3	17.5	14.8	12.1	2.7	0.0	0.0
82.5°	38.4	25.8	18.6	15.3	13.1	10.4	8.2	6.0	1.6	0.0	0.0
85°	14.2	10.9	8.2	6.6	5.5	4.9	3.8	3.3	0.0	0.0	0.0
87.5°	2.2	1.6	1.6	1.1	1.1	0.5	0.5	0.5	0.0	0.0	0.0
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):

	125°	135°	145°	155°	165°	175°	180°
0°	115.6	115.6	115.6	115.6	115.6	115.6	115.6
2.5°	98.1	93.7	91.5	88.7	88.7	88.2	89.3
5°	81.6	75.6	71.2	67.9	68.5	66.8	67.4
7.5°	69.0	63.0	59.2	57.0	56.4	55.9	55.9
10°	59.7	54.2	50.9	49.3	48.8	48.8	48.8
12.5°	53.1	47.6	44.9	43.8	43.8	43.3	43.3
15°	47.6	43.3	40.5	39.4	39.4	38.9	39.4
17.5°	43.3	38.9	36.7	35.6	35.6	35.1	35.1
20°	39.4	35.6	33.4	31.8	31.8	31.2	31.8
22.5°	36.2	32.3	29.6	28.5	27.9	27.4	27.9
25°	32.9	29.0	26.3	24.6	24.1	24.1	23.5
27.5°	30.1	26.3	23.0	21.3	20.8	20.8	20.3
30°	27.4	23.0	19.7	18.1	17.5	17.5	17.5
32.5°	24.6	19.7	17.0	15.3	14.8	14.8	14.8
35°	21.9	17.0	14.2	12.6	12.1	12.1	12.1
37.5°	18.6	14.2	10.9	9.9	9.3	8.8	8.8
40°	15.9	10.9	8.2	7.1	6.0	6.0	6.0
42.5°	13.1	8.8	6.0	4.4	3.8	3.3	3.8
45°	10.9	6.6	3.8	2.2	1.6	1.6	1.6
47.5°	8.8	4.4	1.6	0.5	0.5	0.5	0.5
50°	6.6	2.7	0.5	0.0	0.0	0.5	0.5
52.5°	4.9	1.6	0.0	0.0	0.0	0.0	0.0
55°	2.7	0.5	0.0	0.0	0.0	0.0	0.0
57.5°	1.6	0.0	0.0	0.0	0.0	0.0	0.0
60°	1.1	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.5	0.0	0.0	0.0	0.0	0.0	0.0
63°	0.5	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.5	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)