

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: P145119

Luminaire Tested: **LDRL-SL3-E01-E-7030**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P145119  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33702)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: LDRL-SL3-E01-E-7030  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(1) LIGHTBARS WITH AccuLED OPTICS - TYPE 3 W/ SPILL LIGHT CONTROL  
Light Source: (21) 3000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2711.5 lumens  
Efficiency: N/A  
Efficacy: 109.8 lumens/watt  
Luminous Opening: Rectangular (W 0.17' x L: 1' x H: 0')  
IES Classification: Type III - Short - Semi-Cutoff  
BUG Rating: B1 - U0 - G1

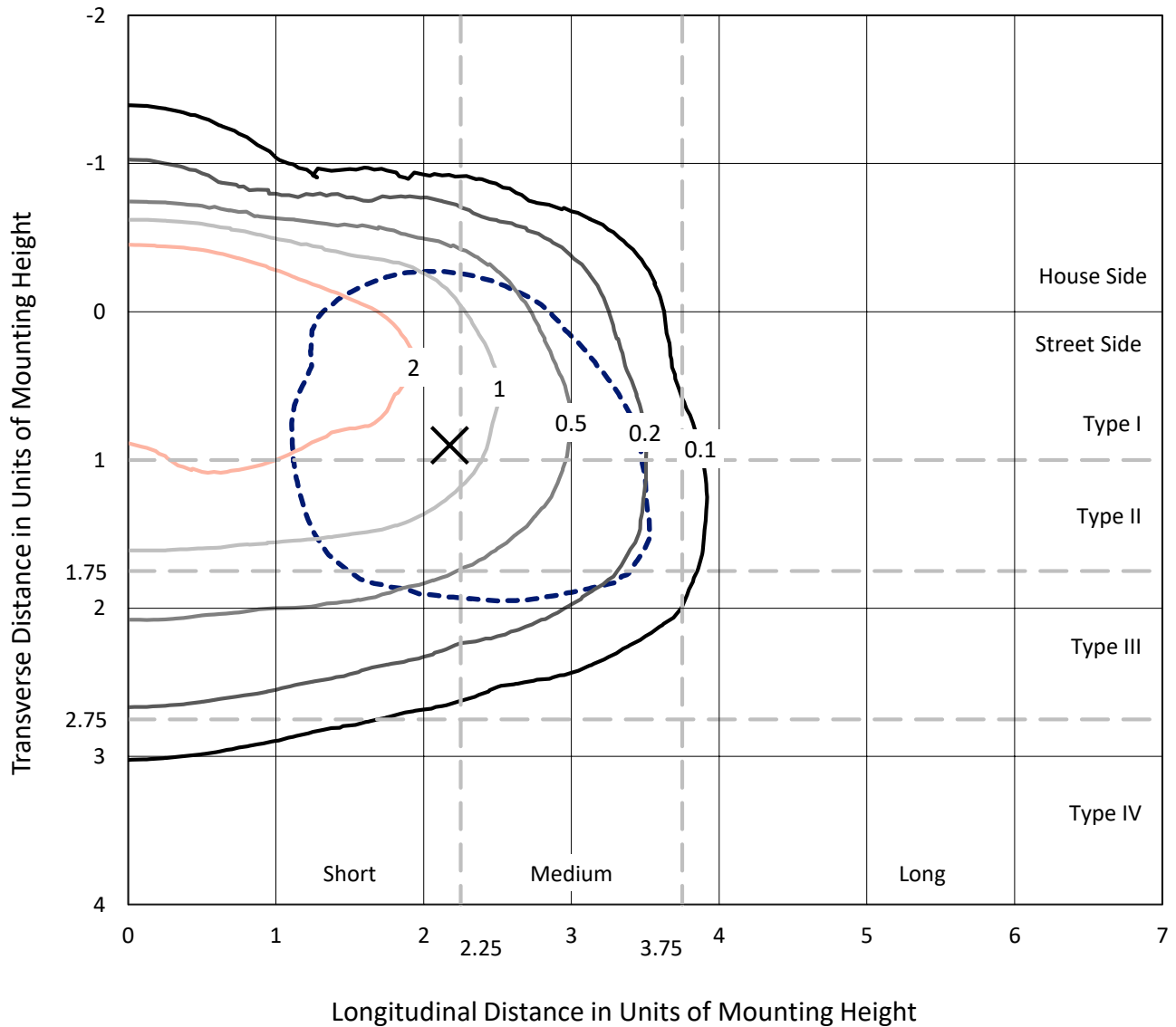
Input Watts (W): 24.7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

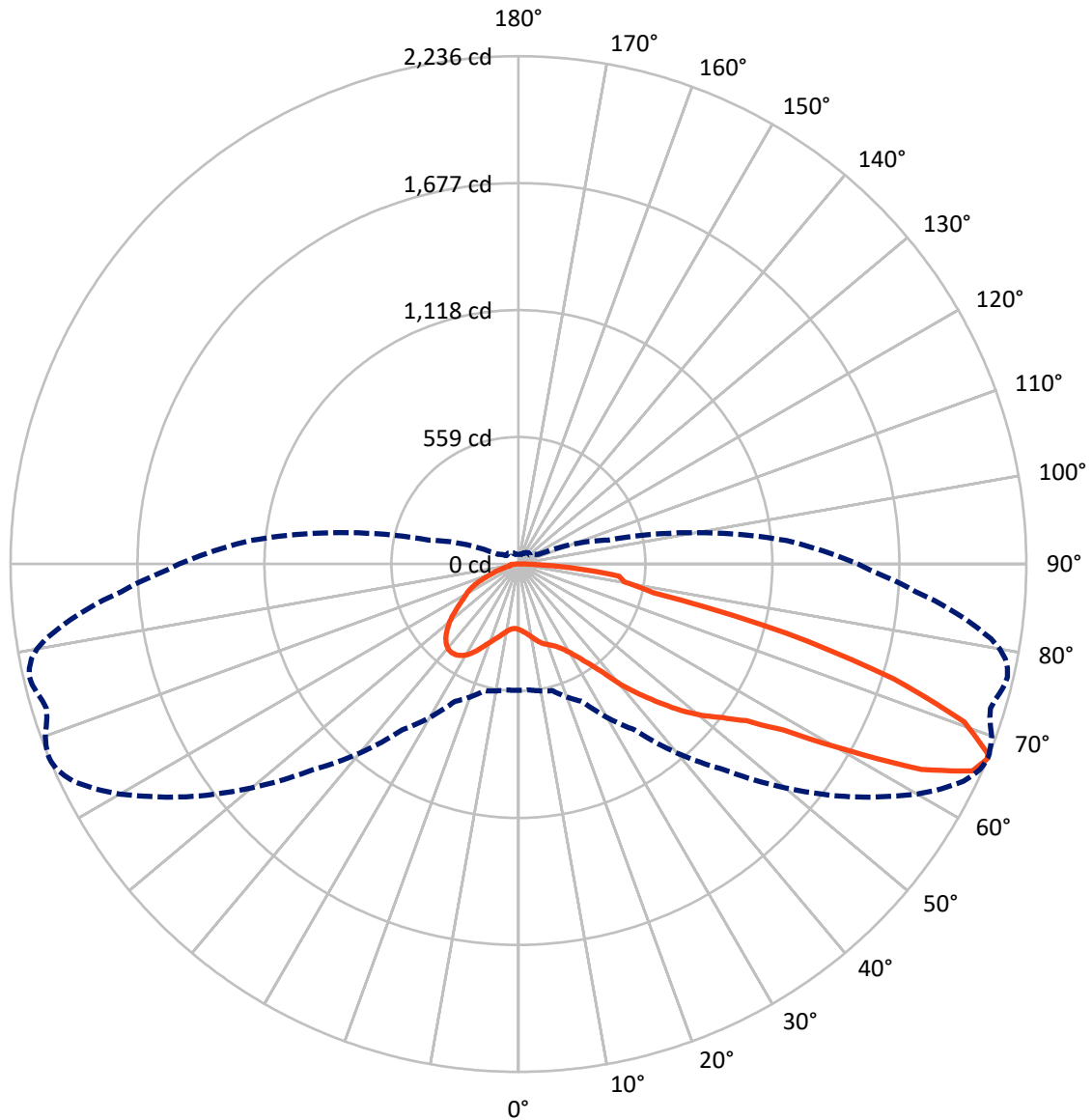
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.7 fc  
 Type III - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 67.5-Deg Lateral    - - - Horizontal Cone Through 67-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	642.1	0.0	642.1
	% Fixture	23.7	0.0	23.7
<b>Street Side</b>	Lumens	2069.4	0.0	2069.4
	% Fixture	76.3	0.0	76.3
<b>Total</b>	Lumens	2711.5	0.0	2711.5
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	28.8	1.1
10°-20°	98.6	3.6
20°-30°	175.5	6.5
30°-40°	255.6	9.4
40°-50°	393.9	14.5
50°-60°	576.8	21.3
60°-70°	766.0	28.2
70°-80°	361.1	13.3
80°-90°	55.2	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°	2711.5	100.0
0°-180°	2711.5	100.0



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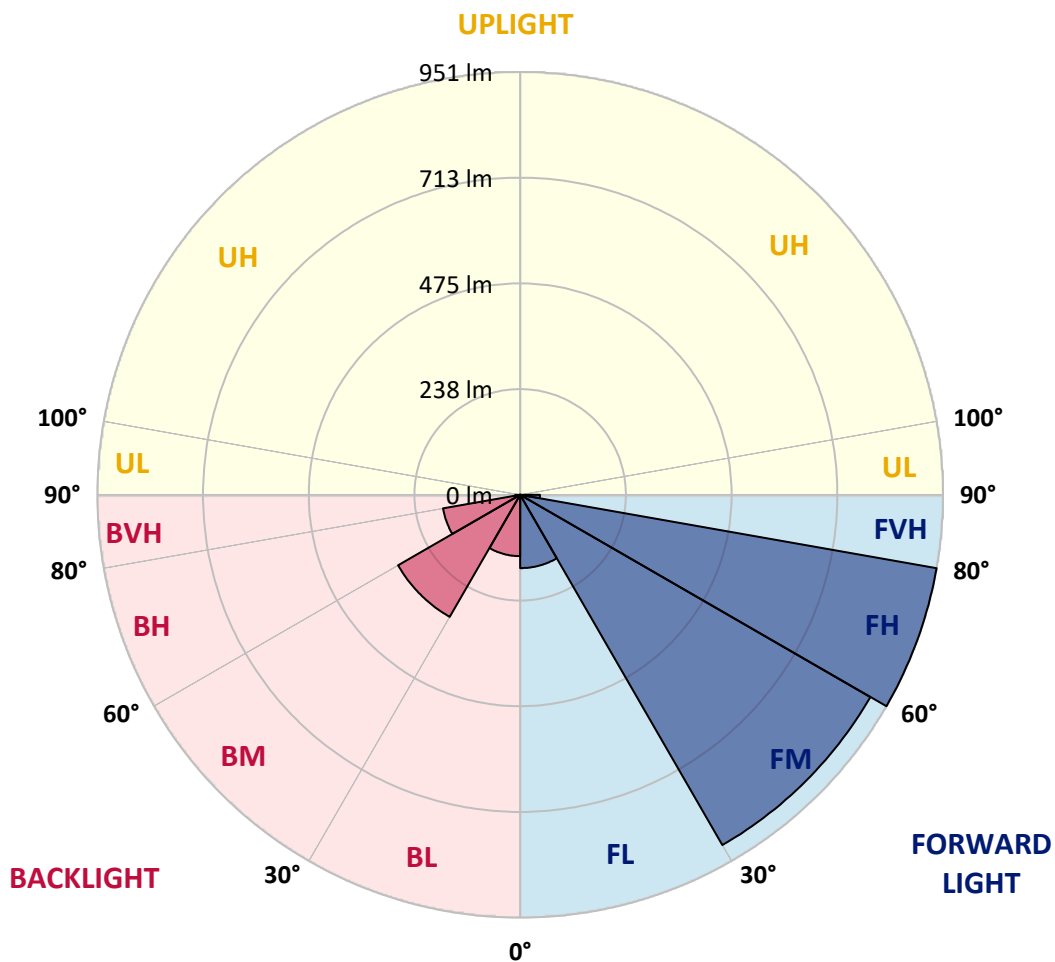
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	164.8	6.1			
FM	(30°-60°)	909.3	33.5			
FH	(60°-80°)	950.8	35.1			G1/1800
FVH	(80°-90°)	44.5	1.6			G1/100
BL	(0°-30°)	138.0	5.1	B1/500		
BM	(30°-60°)	317.1	11.7	B1/1000		
BH	(60°-80°)	176.3	6.5	B1/500		G1/500
BVH	(80°-90°)	10.7	0.4			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G1**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	60°	61°	62°	64°
0°	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4
2.5°	302.9	301.6	301.8	302.3	300.5	299.6	297.6	296.3	296.1	295.9	295.2
5°	320.6	319.3	319.9	318.4	314.9	312.5	308.3	306.2	305.8	305.4	304.5
7.5°	339.0	337.4	335.6	333.9	330.1	326.2	320.8	317.5	317.1	316.6	316.0
10°	361.0	358.6	357.1	352.0	345.4	340.1	334.7	331.2	331.0	330.5	329.4
12.5°	385.6	383.1	380.3	373.6	363.3	355.5	349.1	347.1	345.4	345.6	344.5
15°	410.1	407.4	403.7	395.1	381.6	369.9	361.7	358.8	358.9	358.0	358.6
17.5°	430.7	428.4	423.1	412.1	396.4	380.3	369.9	368.6	369.0	368.8	369.4
20°	444.3	442.8	434.8	421.6	403.9	386.2	375.6	375.6	375.8	376.5	377.8
22.5°	452.5	450.3	439.7	421.2	403.7	388.9	380.7	382.5	383.6	384.2	386.2
25°	457.0	454.3	439.9	415.4	397.5	390.9	388.4	392.9	394.8	395.7	399.0
27.5°	457.0	453.8	437.5	408.1	390.4	396.9	403.0	410.8	412.1	414.8	418.7
30°	451.9	449.4	433.8	402.6	388.5	408.3	426.5	435.5	438.6	441.7	446.6
32.5°	446.4	444.3	432.0	405.5	398.8	432.0	462.5	474.8	476.6	479.1	484.3
35°	446.1	445.3	440.1	424.2	429.6	475.5	516.8	525.2	530.3	531.6	533.8
37.5°	449.9	451.4	455.9	454.3	474.0	540.2	587.8	604.6	608.7	606.5	608.5
40°	458.9	462.5	479.5	500.5	541.8	618.3	684.6	704.0	708.4	707.1	706.6
42.5°	487.2	492.1	517.1	562.1	612.3	699.3	774.5	795.3	796.8	797.5	792.8
45°	531.6	534.3	567.6	624.9	688.7	786.4	864.2	887.4	886.5	882.8	879.4
47.5°	582.0	587.6	627.5	696.9	767.6	867.0	955.0	977.7	979.7	976.4	970.0
50°	627.8	632.2	677.2	759.5	837.2	934.0	1031.5	1054.4	1054.0	1055.8	1057.7
52.5°	664.0	668.0	710.8	801.4	888.3	990.3	1089.3	1117.4	1121.8	1124.7	1128.4
55°	682.6	686.8	726.3	818.7	919.4	1045.2	1155.9	1196.3	1203.8	1210.4	1216.4
57.5°	683.0	688.5	724.7	817.4	935.5	1094.4	1244.2	1316.7	1327.3	1344.1	1364.7
60°	671.9	679.5	712.0	805.6	953.9	1156.7	1389.6	1528.4	1549.2	1578.6	1605.1
62.5°	642.8	650.5	679.5	775.4	975.5	1236.5	1599.6	1803.1	1847.5	1880.0	1932.5
65°	597.0	604.3	628.8	725.6	958.3	1299.5	1756.2	2000.2	2045.5	2086.3	2147.8
67°	556.0	556.8	577.4	668.4	891.4	1280.0	1787.6	2026.5	2068.4	2109.7	2181.1
67.5°	541.6	545.6	561.7	649.4	866.0	1265.5	1775.2	2012.3	2052.8	2096.9	2169.8
70°	437.9	439.0	454.5	518.1	687.2	1049.3	1594.5	1830.5	1858.3	1922.8	1994.4
72.5°	267.1	265.2	270.2	317.3	452.3	726.7	1276.7	1507.0	1545.0	1600.0	1648.4
75°	147.0	155.8	161.8	194.5	254.1	427.3	869.3	1090.4	1146.1	1178.8	1188.5
77.5°	89.9	89.1	91.9	125.5	208.4	292.3	480.2	639.7	670.8	680.1	644.1
80°	42.7	44.4	43.8	51.7	101.0	246.6	335.7	410.8	426.5	435.5	447.2
82.5°	23.4	24.3	27.6	30.9	39.8	106.1	289.7	378.9	389.5	404.8	422.0
85°	14.6	15.3	21.2	22.3	24.5	32.7	120.7	221.4	230.3	260.9	270.5
87.5°	6.0	6.6	11.5	10.4	12.4	11.5	36.5	56.3	59.7	63.6	70.5
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):**

	65°	66°	67°	67.5°	68°	69°	70°	71°	72°	73°	74°
0°	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4
2.5°	295.4	295.2	294.5	294.3	294.6	294.6	294.3	293.7	293.6	293.4	293.0
5°	304.1	303.8	303.2	302.9	302.7	302.7	302.1	301.6	301.0	300.3	300.1
7.5°	314.6	314.6	314.4	313.8	313.3	312.5	312.0	311.5	310.9	310.5	310.0
10°	328.3	329.0	327.7	327.3	327.2	326.1	325.9	325.3	325.0	324.1	324.1
12.5°	344.5	343.8	343.6	342.9	342.9	342.3	342.1	342.0	341.6	340.9	340.7
15°	358.0	358.0	357.9	357.5	357.9	357.5	356.9	357.3	356.8	356.9	356.4
17.5°	369.0	369.7	369.5	369.7	369.5	369.5	369.9	369.9	370.3	369.5	369.7
20°	378.1	379.2	379.8	379.4	379.8	380.0	380.9	381.2	381.8	382.1	382.1
22.5°	387.6	389.1	390.2	390.2	390.9	391.6	393.3	393.7	394.9	394.8	395.7
25°	401.0	403.3	404.1	405.2	406.1	407.4	409.4	410.3	410.8	412.1	413.6
27.5°	421.4	424.3	424.9	426.2	428.5	429.3	431.5	432.4	434.4	437.1	437.7
30°	449.4	453.0	453.2	454.7	457.4	458.3	460.1	462.5	464.2	466.9	467.1
32.5°	487.4	491.0	490.5	493.2	493.0	495.8	495.2	498.9	500.3	501.8	505.8
35°	538.0	537.6	540.3	541.3	540.7	542.9	542.5	544.2	545.6	545.6	550.0
37.5°	610.8	610.3	609.9	606.1	605.2	605.4	604.6	606.1	603.7	603.7	608.5
40°	708.6	705.3	702.7	700.2	697.6	694.1	691.2	690.5	686.5	686.3	684.5
42.5°	793.5	790.4	788.6	783.7	781.1	780.5	773.4	771.4	770.3	771.1	769.2
45°	882.7	879.4	872.4	870.2	869.5	865.7	864.6	859.6	858.2	860.7	859.8
47.5°	974.5	969.8	966.0	963.4	962.5	959.2	954.5	958.5	956.5	955.0	952.3
50°	1057.1	1051.8	1051.8	1047.2	1048.0	1045.8	1040.9	1042.0	1036.3	1038.5	1037.0
52.5°	1126.3	1126.7	1128.5	1123.4	1124.3	1124.3	1122.7	1117.4	1118.9	1118.1	1121.6
55°	1214.4	1220.4	1217.1	1218.0	1219.1	1224.3	1227.9	1224.8	1219.7	1223.7	1234.8
57.5°	1368.4	1373.9	1377.1	1379.7	1383.9	1386.3	1406.0	1408.8	1402.9	1415.0	1439.8
60°	1636.2	1642.8	1652.6	1665.6	1668.3	1684.9	1695.2	1707.2	1711.6	1722.0	1748.7
62.5°	1958.2	1973.0	1974.8	1991.3	2004.1	1988.5	1992.6	2007.4	1990.6	2013.6	2014.7
65°	2169.0	2190.6	2191.3	2197.3	2202.1	2187.5	2180.9	2174.3	2158.4	2157.5	2173.4
67°	2205.2	2224.9	2233.1	2236.1	2235.3	2227.8	2217.1	2198.1	2182.7	2174.0	2180.5
67.5°	2195.0	2214.3	2225.8	2228.6	2228.8	2221.5	2211.6	2190.9	2176.5	2166.6	2173.6
70°	2026.9	2072.2	2091.9	2081.7	2087.6	2087.6	2087.2	2068.2	2061.1	2051.6	2047.9
72.5°	1685.3	1716.7	1741.8	1728.4	1730.1	1742.5	1739.6	1741.6	1721.1	1718.9	1685.1
75°	1207.3	1217.3	1208.9	1218.4	1167.3	1149.0	1117.9	1072.6	1060.8	1042.0	985.7
77.5°	641.4	630.0	607.6	605.7	584.7	568.5	548.4	535.2	502.0	483.5	441.3
80°	453.0	458.5	467.1	472.2	477.0	480.6	473.1	452.1	424.3	393.3	363.9
82.5°	432.7	440.2	445.3	447.9	446.1	440.2	423.1	403.0	365.9	339.0	307.3
85°	272.9	278.9	268.5	266.3	270.9	234.0	213.7	197.3	159.8	148.7	131.3
87.5°	73.3	77.3	77.5	75.1	73.6	64.8	57.4	50.8	42.0	39.5	32.0
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):**

	75°	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°
0°	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4
2.5°	293.0	292.8	292.8	292.3	291.9	291.7	291.5	291.0	290.6	290.6	290.4
5°	299.9	299.6	299.0	298.8	298.1	297.8	297.0	296.7	296.1	295.7	295.6
7.5°	309.8	308.9	307.8	308.0	306.9	306.3	306.0	305.2	304.7	304.1	304.0
10°	323.0	322.8	321.7	322.0	320.0	321.0	319.1	319.3	318.2	317.1	316.9
12.5°	339.8	339.6	338.5	337.2	336.8	337.0	335.9	336.1	334.8	334.5	334.1
15°	355.8	355.5	354.9	354.0	353.5	353.3	352.9	352.6	351.5	351.5	350.2
17.5°	369.7	369.9	369.2	368.4	368.1	367.5	367.3	367.3	366.4	365.5	365.7
20°	382.0	382.3	382.3	381.8	382.0	381.6	381.4	381.8	380.9	380.5	380.0
22.5°	395.7	395.7	395.8	396.2	396.8	396.9	396.9	396.6	396.0	395.8	394.8
25°	414.7	413.9	414.8	415.2	415.2	416.1	415.8	415.9	416.1	415.6	415.0
27.5°	438.6	437.9	439.7	441.0	440.8	441.3	442.4	441.1	441.9	442.4	441.1
30°	468.0	469.8	471.1	472.0	471.7	473.3	473.8	473.7	473.1	474.0	474.0
32.5°	505.4	504.5	507.8	509.8	510.0	509.6	510.6	511.7	510.7	512.2	511.5
35°	550.0	550.6	551.3	553.5	554.4	552.9	554.4	555.7	555.3	555.5	556.2
37.5°	607.6	608.5	607.7	607.9	607.6	614.5	615.6	616.7	615.4	614.3	617.6
40°	687.4	687.4	687.2	689.6	685.6	689.9	688.7	691.8	695.1	693.2	698.2
42.5°	765.9	770.3	770.7	767.2	770.1	774.9	774.9	776.9	779.8	776.9	781.6
45°	856.0	861.5	860.6	866.4	862.0	867.5	868.4	865.9	872.2	873.0	871.2
47.5°	954.3	955.4	955.5	957.6	958.5	962.9	962.7	967.4	966.0	958.7	961.2
50°	1038.5	1041.2	1042.7	1044.0	1048.5	1051.6	1055.8	1056.6	1055.5	1053.3	1051.3
52.5°	1122.7	1129.3	1133.5	1144.8	1151.9	1157.6	1164.5	1167.1	1165.8	1165.3	1157.2
55°	1235.4	1251.1	1275.4	1291.1	1308.3	1318.3	1326.4	1330.4	1327.5	1328.9	1312.3
57.5°	1447.7	1484.6	1505.7	1532.6	1562.9	1575.5	1579.0	1593.2	1577.5	1561.8	1549.2
60°	1763.1	1797.1	1835.7	1863.2	1873.5	1908.4	1891.9	1873.5	1856.7	1824.1	1787.4
62.5°	2047.9	2091.8	2111.5	2137.2	2130.3	2127.4	2116.4	2087.0	2051.0	2002.6	1953.7
65°	2188.4	2213.0	2225.3	2233.7	2225.8	2205.6	2169.4	2125.9	2074.4	2011.7	1947.4
67°	2194.1	2205.4	2209.4	2201.4	2183.8	2152.2	2106.6	2045.0	1981.6	1909.8	1837.5
67.5°	2184.7	2192.2	2194.2	2181.6	2160.8	2126.6	2077.9	2012.1	1944.7	1870.2	1797.5
70°	2057.6	2052.1	2034.4	2017.0	1952.0	1906.2	1821.2	1751.1	1657.5	1589.0	1511.4
72.5°	1671.6	1646.6	1629.4	1552.7	1474.1	1428.7	1337.3	1253.5	1168.2	1103.0	1055.3
75°	938.4	920.1	872.4	831.9	767.0	707.7	665.1	611.8	560.6	530.3	508.0
77.5°	424.0	371.7	335.7	290.3	234.5	188.5	139.9	129.3	110.3	105.6	95.2
80°	330.8	293.4	246.2	194.2	137.0	92.1	67.6	57.4	53.9	51.7	50.6
82.5°	276.0	227.4	191.4	135.9	87.0	58.5	44.0	39.8	37.3	35.4	33.8
85°	118.0	93.3	76.9	55.0	39.1	30.9	27.0	24.7	22.3	20.3	19.0
87.5°	27.6	21.2	19.4	16.4	15.5	15.3	15.2	14.4	13.5	12.4	11.1
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-SL3-E01-E-7030

**CANDELA DISTRIBUTION (continued):**

	86°	87°	88°	89°	90°	95°	105°	115°	125°	135°	145°
0°	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4	288.4
2.5°	290.3	290.1	289.7	289.2	289.2	288.4	286.1	284.4	282.6	281.5	280.4
5°	295.2	295.0	294.1	293.6	293.2	291.7	287.7	284.6	281.3	278.9	277.1
7.5°	303.4	302.9	302.1	301.8	300.7	298.8	293.0	288.6	283.9	280.0	276.9
10°	316.7	315.8	314.7	313.6	314.0	311.1	304.3	297.9	291.0	285.0	280.8
12.5°	333.0	333.0	332.5	331.7	330.5	327.2	318.0	310.5	302.1	294.6	291.5
15°	350.2	349.3	348.4	347.3	347.1	342.7	334.5	325.9	317.1	310.7	307.1
17.5°	364.2	364.6	363.3	363.0	362.6	358.2	349.4	341.8	335.4	328.6	322.8
20°	379.2	378.5	378.1	377.6	377.4	373.7	366.8	362.1	356.4	346.2	330.8
22.5°	395.3	394.4	394.8	393.7	393.5	390.9	385.8	384.3	375.9	354.4	327.7
25°	416.1	414.5	415.0	415.0	415.2	412.8	412.3	409.7	388.5	352.4	315.3
27.5°	441.0	441.7	441.7	441.5	440.2	441.0	443.5	434.8	392.9	341.8	296.7
30°	473.3	473.7	474.0	475.3	472.6	477.3	480.4	452.5	389.6	327.2	273.3
32.5°	512.6	511.1	511.8	512.6	513.5	518.4	516.6	461.4	380.0	307.3	244.2
35°	555.9	558.6	559.3	561.0	562.8	570.3	549.3	463.3	365.2	280.6	207.1
37.5°	620.3	624.7	624.7	630.6	627.1	636.2	578.5	458.9	342.7	243.5	165.3
40°	701.6	703.6	705.7	706.4	704.6	703.5	597.7	448.1	311.1	196.9	120.9
42.5°	784.6	783.8	784.0	785.3	780.4	759.7	609.6	429.3	271.8	147.0	86.8
45°	873.9	870.8	869.9	867.3	862.9	819.5	616.3	402.8	220.1	103.4	68.1
47.5°	960.8	957.0	951.2	944.0	935.6	867.5	615.6	368.4	168.8	74.0	60.1
50°	1050.0	1043.2	1030.6	1023.7	1009.4	915.2	611.4	330.3	121.5	61.2	56.3
52.5°	1151.9	1139.9	1128.2	1114.3	1090.7	973.8	605.0	287.3	88.6	56.1	53.7
55°	1303.9	1284.2	1265.0	1236.1	1213.3	1052.4	594.2	241.1	70.0	54.1	52.2
57.5°	1513.4	1479.8	1455.5	1416.6	1380.1	1161.1	582.7	199.1	62.5	53.5	51.5
60°	1749.2	1698.6	1653.3	1605.5	1563.8	1296.8	576.7	166.2	60.8	54.1	51.7
62.5°	1897.2	1837.5	1780.9	1722.4	1662.5	1361.6	550.6	143.6	61.6	56.4	53.2
65°	1878.6	1812.6	1751.1	1679.8	1623.4	1300.4	484.1	121.5	62.8	60.6	57.2
67°	1752.9	1689.0	1618.8	1549.0	1494.2	1184.1	408.6	102.3	64.3	65.4	61.6
67.5°	1719.3	1647.3	1576.6	1512.5	1453.1	1148.1	388.9	97.5	64.7	66.7	63.0
70°	1433.8	1376.8	1294.0	1246.5	1203.6	930.7	290.1	75.8	65.8	72.3	70.0
72.5°	1003.2	948.1	904.8	878.8	853.8	676.2	204.0	60.5	64.1	75.4	73.1
75°	506.7	494.1	479.0	470.6	470.9	393.1	122.9	51.5	60.3	72.3	66.3
77.5°	100.1	97.5	98.6	108.0	106.3	121.1	61.0	43.7	51.3	55.7	47.7
80°	48.4	46.8	45.3	44.9	44.0	42.2	38.4	36.4	41.6	36.7	31.6
82.5°	31.4	29.6	28.9	27.4	27.6	30.0	33.4	34.9	33.8	25.4	21.4
85°	17.7	17.5	17.2	17.5	18.3	23.9	35.8	32.7	27.2	17.9	16.1
87.5°	10.6	10.0	10.2	10.4	10.8	17.7	28.3	23.6	17.4	9.3	9.5
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):**

	155°	165°	175°	180°
0°	288.4	288.4	288.4	288.4
2.5°	280.2	279.5	279.5	279.3
5°	275.6	274.6	274.4	274.4
7.5°	274.9	273.5	273.3	272.7
10°	278.2	277.7	277.8	277.3
12.5°	288.6	289.3	290.1	290.1
15°	304.5	304.0	304.9	304.0
17.5°	316.2	311.5	310.4	309.8
20°	316.6	306.7	303.4	302.9
22.5°	305.2	290.6	285.1	284.2
25°	286.1	267.6	260.7	259.9
27.5°	261.9	241.3	231.1	230.7
30°	232.9	208.4	195.5	193.4
32.5°	197.5	168.4	154.7	150.3
35°	156.5	126.8	114.0	113.6
37.5°	116.9	93.7	85.5	85.1
40°	85.7	73.6	70.5	70.0
42.5°	70.0	65.0	63.8	63.2
45°	62.7	60.6	59.9	59.4
47.5°	58.3	57.0	56.4	56.4
50°	54.8	54.4	54.1	54.1
52.5°	52.4	52.2	51.9	51.7
55°	50.4	49.7	49.9	49.7
57.5°	49.1	48.0	48.0	48.0
60°	48.4	46.4	46.4	46.6
62.5°	48.6	45.5	45.3	45.3
65°	50.1	44.9	43.8	44.0
67°	51.9	44.4	42.2	42.0
67.5°	52.4	44.0	41.6	41.5
70°	54.6	42.9	38.9	38.5
72.5°	55.0	41.3	36.2	35.8
75°	51.1	39.1	34.0	33.1
77.5°	39.8	33.6	30.7	30.7
80°	27.9	25.8	21.9	21.7
82.5°	20.5	19.4	16.1	15.7
85°	15.0	14.1	11.9	11.9
87.5°	9.3	9.0	7.7	7.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)