

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: P145448

Luminaire Tested: **LDRL-SL4-E04-E-8030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145448
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33703)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-SL4-E04-E-8030
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (84) 3000K CCT, 80 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9729.6 lumens
Efficiency: N/A
Efficacy: 100.1 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

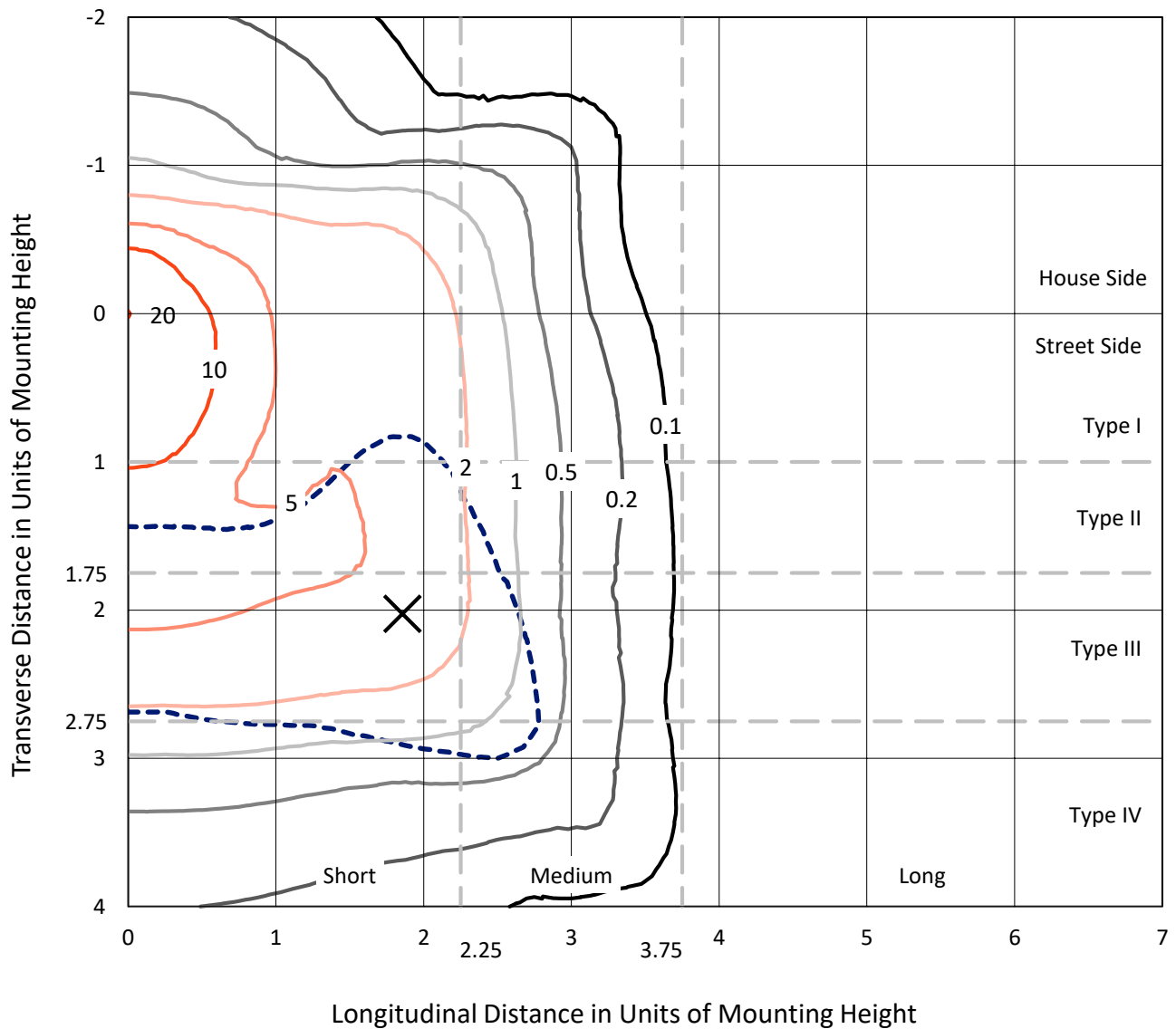
Input Watts (W): 97.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

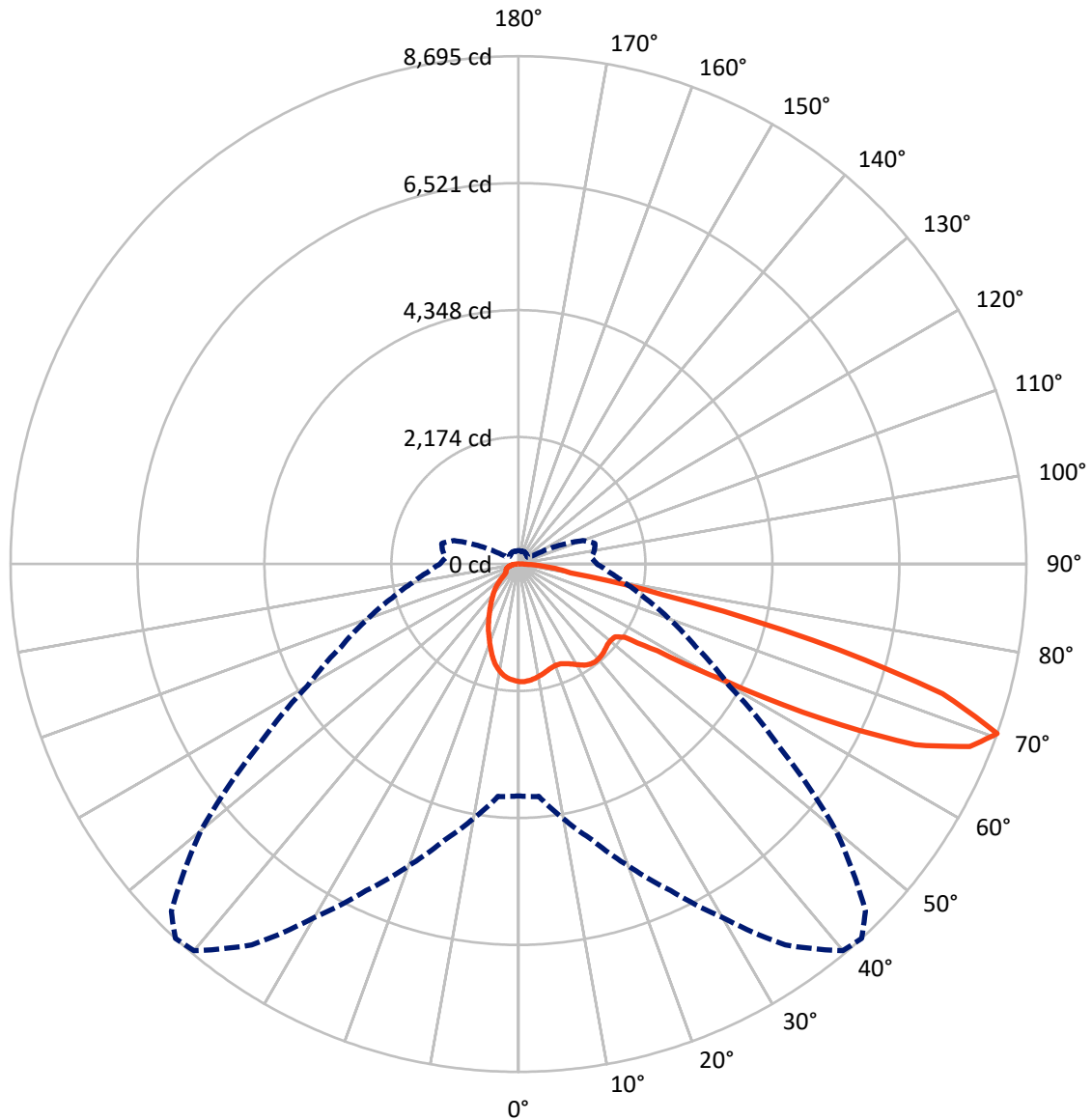
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 20.1 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 42.5-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2101.8	0.0	2101.8
	% Fixture	21.6	0.0	21.6
Street Side	Lumens	7627.8	0.0	7627.8
	% Fixture	78.4	0.0	78.4
Total	Lumens	9729.6	0.0	9729.6
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	187.2	1.9
10°-20°	504.3	5.2
20°-30°	735.6	7.6
30°-40°	938.2	9.6
40°-50°	1095.1	11.3
50°-60°	1674.7	17.2
60°-70°	3035.8	31.2
70°-80°	1349.8	13.9
80°-90°	208.9	2.1
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°	9729.6	100.0
0°-180°	9729.6	100.0

Coefficient of Utilization



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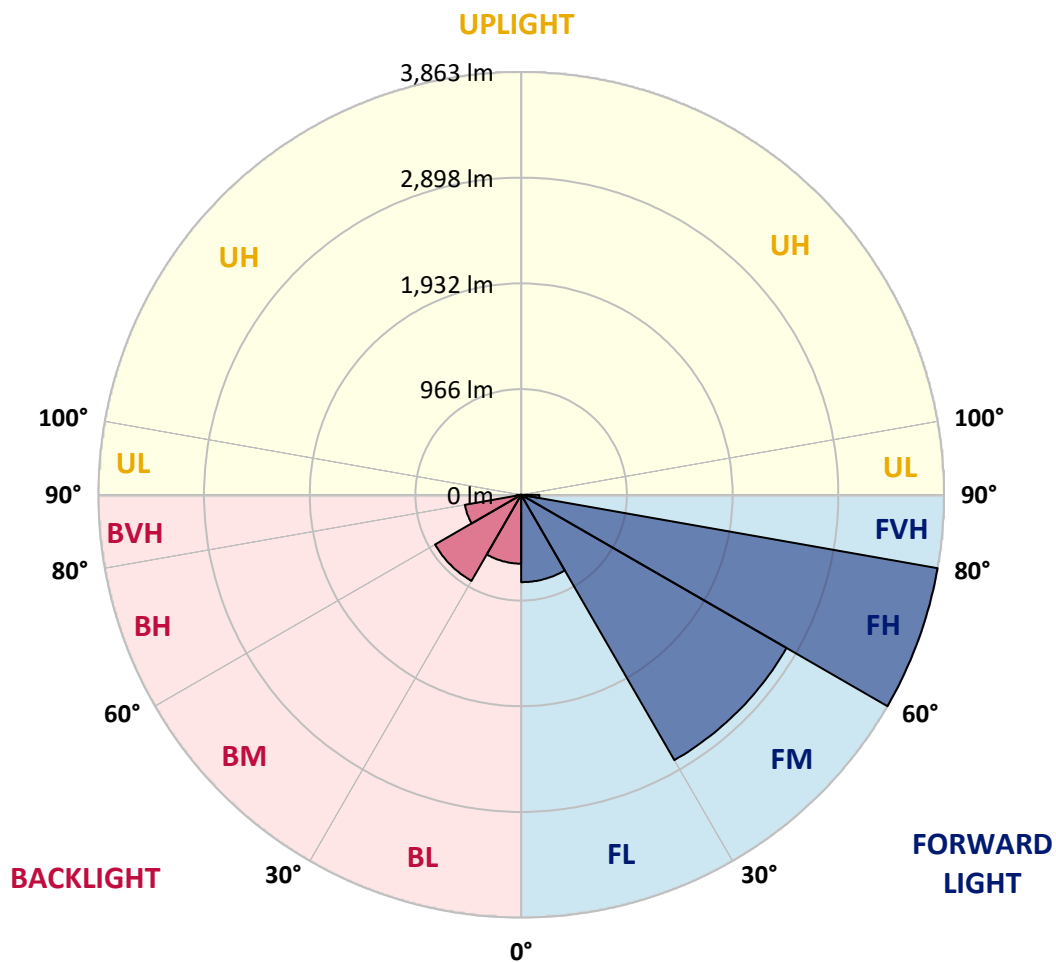
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	798.1	8.2			
FM (30°-60°)	2799.5	28.8			
FH (60°-80°)	3863.4	39.7			G2/5000
FVH (80°-90°)	166.9	1.7			G2/225
BL (0°-30°)	629.1	6.5	B2/1000		
BM (30°-60°)	908.6	9.3	B1/1000		
BH (60°-80°)	522.2	5.4	B2/1000		G2/1000
BVH (80°-90°)	42.0	0.4			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	42.5°	45°
0°	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1
2.5°	2021.5	2019.5	2020.9	2022.2	2022.2	2022.9	2016.8	2017.5	2014.8	2015.5	2016.1
5°	2014.1	2012.1	2013.4	2013.4	2013.4	2012.7	2004.6	2004.0	2000.6	2000.6	1999.2
7.5°	1999.9	1992.5	1996.5	1997.2	1995.9	1992.5	1987.8	1983.0	1981.0	1981.0	1976.3
10°	1978.3	1970.2	1972.2	1973.6	1972.9	1966.2	1964.1	1959.4	1954.0	1952.0	1946.6
12.5°	1950.6	1945.2	1947.9	1947.3	1947.3	1941.2	1937.8	1931.1	1924.3	1920.9	1914.2
15°	1933.1	1926.3	1929.0	1929.0	1926.3	1920.2	1915.5	1903.4	1891.9	1887.8	1879.1
17.5°	1943.9	1937.1	1939.8	1937.8	1933.1	1920.2	1908.1	1888.5	1870.3	1859.5	1848.0
20°	1987.1	1980.3	1982.4	1981.0	1974.3	1953.3	1931.1	1897.3	1863.5	1847.3	1829.8
22.5°	2056.0	2050.6	2053.9	2051.9	2041.1	2014.1	1981.0	1932.4	1881.8	1857.5	1832.5
25°	2157.9	2156.6	2162.0	2155.9	2140.4	2099.8	2051.9	1986.4	1920.2	1889.9	1854.8
27.5°	2280.8	2269.3	2277.4	2272.0	2261.2	2209.9	2145.1	2062.0	1977.6	1937.8	1895.9
30°	2391.5	2381.4	2396.3	2393.6	2377.4	2324.7	2243.0	2145.8	2050.6	1999.9	1952.0
32.5°	2519.8	2507.0	2518.5	2518.5	2494.2	2423.3	2330.1	2218.7	2118.8	2064.7	2007.3
35°	2654.2	2640.7	2651.5	2648.1	2604.9	2511.0	2394.2	2273.4	2163.3	2108.0	2049.2
37.5°	2779.1	2777.1	2779.8	2757.5	2697.4	2577.2	2437.4	2302.4	2185.6	2127.5	2066.1
40°	2904.0	2899.3	2887.8	2848.6	2760.9	2616.4	2459.7	2312.5	2186.9	2126.2	2064.1
42.5°	2982.3	2973.5	2954.0	2900.6	2790.6	2625.8	2453.0	2297.0	2170.7	2108.6	2047.9
45°	3009.3	3000.6	2976.9	2916.8	2791.2	2611.0	2426.6	2265.9	2140.4	2083.6	2022.2
47.5°	2987.1	2981.7	2960.0	2900.0	2769.6	2583.3	2393.6	2234.9	2111.3	2056.0	1998.6
50°	2949.2	2945.9	2927.0	2871.6	2749.4	2566.4	2378.0	2220.0	2103.2	2051.9	1997.9
52.5°	3043.8	3033.6	2999.9	2934.4	2791.9	2596.8	2402.3	2242.3	2122.1	2070.1	2014.8
55°	4205.8	4130.8	3963.4	3649.4	3209.9	2868.9	2581.9	2388.8	2259.2	2208.6	2155.9
57.5°	5531.2	5452.9	5383.3	5143.6	4621.7	3977.6	3398.2	3059.3	2827.0	2804.8	2783.8
60°	6041.6	6066.6	6060.5	5971.4	5704.0	5398.2	4913.4	4513.0	4069.4	4051.2	4077.5
62.5°	6393.4	6414.3	6417.0	6390.0	6302.9	6201.0	6099.7	5971.4	5887.0	5850.5	5614.9
65°	6538.6	6569.0	6635.8	6685.8	6699.9	6735.0	6826.9	7175.9	7467.0	7464.9	7188.8
67.5°	5984.2	6020.7	6273.9	6522.4	6731.0	6972.7	7344.7	7912.6	8350.8	8337.3	8111.1
70°	3971.5	3994.4	4424.5	4892.4	5499.4	6170.6	6983.5	7962.5	8641.8	8695.1	8403.4
72.5°	2436.1	2488.8	2629.2	2818.9	3143.0	3764.9	4973.5	6646.6	7643.2	7593.2	7361.0
75°	1644.8	1647.5	1643.4	1663.7	1681.9	1807.5	2294.3	3654.8	5177.4	5204.4	5104.5
77.5°	1124.2	1139.1	1147.2	1141.8	1160.0	1154.6	1182.9	1252.5	1984.4	2532.6	2327.4
80°	982.4	988.5	997.3	984.4	950.7	931.8	958.1	933.1	879.1	908.1	869.6
82.5°	621.9	640.1	642.1	686.7	752.8	755.5	789.3	764.3	695.4	650.2	594.8
85°	447.0	453.7	465.9	468.6	445.6	426.0	438.2	417.3	376.1	351.8	311.3
87.5°	260.6	267.4	279.5	272.1	249.1	220.8	199.2	171.5	135.7	126.9	112.1
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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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1
2.5°	2016.8	2013.4	2010.7	2009.4	2012.1	2009.4	2006.7	2005.3	2002.6	2003.3	1999.9
5°	1997.9	1993.2	1989.1	1985.7	1988.4	1983.7	1979.7	1977.0	1973.6	1972.9	1969.5
7.5°	1971.6	1964.1	1958.7	1952.7	1945.9	1941.9	1937.1	1932.4	1925.0	1924.3	1922.9
10°	1937.1	1931.1	1920.2	1910.8	1901.3	1891.2	1881.1	1873.7	1864.9	1861.5	1856.8
12.5°	1902.7	1890.5	1877.7	1862.9	1851.4	1835.2	1821.7	1807.5	1794.7	1786.6	1777.8
15°	1862.2	1849.4	1831.1	1816.9	1800.7	1782.5	1765.0	1744.0	1723.1	1710.3	1698.1
17.5°	1827.1	1810.9	1796.0	1775.8	1759.6	1738.6	1712.3	1690.0	1665.0	1644.1	1621.8
20°	1800.1	1781.8	1764.3	1746.0	1726.5	1702.8	1673.8	1642.1	1610.3	1580.6	1547.5
22.5°	1789.3	1760.2	1740.6	1723.8	1703.5	1676.5	1644.1	1604.9	1565.8	1528.0	1489.5
25°	1798.7	1755.5	1725.1	1706.2	1688.0	1660.3	1623.8	1579.3	1533.4	1485.4	1439.5
27.5°	1824.4	1769.7	1726.5	1696.8	1675.8	1648.8	1608.3	1561.7	1509.7	1455.7	1406.4
30°	1861.5	1793.3	1739.3	1696.8	1665.7	1634.6	1590.8	1538.1	1483.4	1426.7	1371.3
32.5°	1902.0	1819.6	1754.8	1698.8	1650.8	1611.7	1565.8	1514.5	1456.4	1396.3	1336.9
35°	1932.4	1838.5	1761.6	1691.4	1629.9	1580.6	1531.3	1481.4	1424.7	1363.9	1304.5
37.5°	1945.2	1846.0	1760.2	1675.8	1600.9	1546.9	1495.6	1445.6	1390.9	1333.5	1278.8
40°	1945.9	1846.0	1752.1	1654.9	1570.5	1511.8	1457.7	1411.2	1359.8	1310.5	1261.9
42.5°	1933.1	1836.5	1737.3	1635.3	1548.2	1482.0	1426.7	1378.7	1337.6	1293.7	1252.5
45°	1910.1	1817.6	1723.8	1624.5	1540.1	1474.6	1415.2	1370.0	1332.8	1293.7	1257.9
47.5°	1892.6	1806.8	1724.4	1640.0	1559.7	1492.2	1428.0	1380.1	1348.4	1317.3	1291.6
50°	1895.9	1810.9	1732.5	1652.2	1573.2	1505.0	1442.9	1401.7	1382.8	1372.7	1366.6
52.5°	1913.5	1827.1	1767.7	1714.3	1688.7	1646.8	1612.4	1581.3	1586.0	1561.7	1530.7
55°	2094.4	2065.4	2133.6	2182.9	2207.2	2249.7	2311.2	2252.4	2244.3	2169.4	1946.6
57.5°	2812.2	2881.0	2985.7	3060.0	3067.4	3054.6	3003.9	2955.3	2876.3	2763.6	2451.6
60°	4016.0	3999.8	3902.6	3772.3	3671.0	3538.0	3404.3	3291.6	3164.6	2991.8	2659.6
62.5°	5282.0	4891.8	4545.4	4250.3	3999.8	3777.7	3575.8	3406.3	3232.1	2983.7	2629.9
65°	6304.3	5553.5	4943.1	4468.4	4095.7	3781.8	3521.1	3287.5	3054.6	2766.9	2423.9
67.5°	7034.8	5843.8	4922.8	4255.1	3732.5	3300.3	2920.9	2654.9	2415.8	2189.7	2035.0
70°	7092.9	5442.1	4164.6	3347.6	2744.7	2236.9	1843.3	1552.9	1345.0	1251.1	1318.0
72.5°	6061.2	4026.2	2769.0	2049.2	1626.5	1264.0	1016.2	812.3	644.8	562.4	573.9
75°	3569.7	1933.1	1247.1	929.1	758.9	606.3	524.6	442.9	390.9	313.3	250.5
77.5°	1359.2	840.6	629.3	522.6	372.7	268.1	211.3	182.3	167.4	165.4	156.6
80°	783.2	616.5	431.4	282.2	206.6	174.9	149.9	128.3	119.5	117.5	120.9
82.5°	494.9	384.2	237.0	181.6	150.6	129.6	108.0	93.9	86.4	83.7	88.5
85°	255.9	192.4	144.5	124.2	115.5	105.3	86.4	72.2	71.6	74.9	86.4
87.5°	94.5	82.4	64.8	56.0	60.1	56.0	40.5	35.1	31.7	41.9	60.8
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):

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1	2012.1
2.5°	1999.9	1998.6	1999.2	1997.9	1997.9	1999.9	1997.2	1995.2	1998.6	1998.6	2000.6
5°	1968.9	1970.2	1970.2	1969.5	1970.9	1974.3	1973.6	1973.6	1979.0	1981.0	1983.7
7.5°	1919.6	1921.6	1922.3	1924.3	1925.0	1929.7	1933.1	1937.1	1945.2	1947.3	1953.3
10°	1852.7	1851.4	1856.1	1855.4	1861.5	1865.6	1868.3	1877.0	1889.2	1895.9	1902.0
12.5°	1773.7	1773.7	1776.4	1777.1	1782.5	1787.9	1791.3	1802.1	1812.2	1821.0	1834.5
15°	1690.0	1687.3	1681.2	1680.6	1682.6	1688.0	1695.4	1703.5	1719.0	1731.9	1743.3
17.5°	1602.2	1594.1	1586.7	1577.3	1576.6	1575.9	1580.0	1586.0	1610.3	1623.2	1639.4
20°	1524.6	1507.0	1489.5	1469.9	1458.4	1453.0	1455.0	1463.1	1486.1	1503.0	1519.9
22.5°	1455.0	1428.7	1401.0	1370.0	1351.1	1339.6	1340.9	1344.3	1361.2	1371.3	1380.1
25°	1395.6	1359.2	1320.7	1280.8	1254.5	1237.0	1236.3	1236.3	1228.9	1230.2	1225.5
27.5°	1355.1	1304.5	1255.2	1208.6	1174.2	1156.6	1133.0	1116.1	1101.2	1081.0	1072.2
30°	1316.0	1264.0	1207.9	1156.6	1115.4	1081.0	1037.1	1000.6	971.6	943.9	920.3
32.5°	1280.8	1226.8	1173.5	1117.4	1060.7	1001.3	943.9	902.1	860.9	818.3	790.0
35°	1249.8	1199.1	1145.8	1082.3	1002.7	925.0	860.2	803.5	754.9	703.6	662.4
37.5°	1232.2	1186.3	1130.9	1044.5	944.6	856.1	783.9	720.4	655.6	594.2	543.5
40°	1223.4	1182.9	1115.4	1006.0	892.6	798.1	717.7	641.4	565.1	492.9	440.2
42.5°	1222.1	1182.9	1092.5	966.9	848.0	746.8	657.0	565.1	472.6	402.4	355.8
45°	1234.3	1181.6	1068.2	931.8	808.2	700.9	592.8	484.8	389.6	328.1	302.5
47.5°	1269.4	1186.3	1049.2	902.1	770.4	650.2	519.9	395.7	314.6	287.0	286.3
50°	1326.1	1207.9	1045.2	880.5	733.3	586.7	434.1	316.7	277.5	276.2	283.6
52.5°	1415.9	1248.4	1055.3	865.6	688.7	504.4	343.7	273.5	266.0	273.5	282.9
55°	1613.7	1320.7	1068.8	839.3	616.5	399.7	282.9	259.3	262.6	271.4	280.2
57.5°	1973.6	1470.6	1083.0	779.8	499.6	307.2	254.5	253.9	259.9	267.4	275.5
60°	2201.8	1655.6	1117.4	692.1	377.4	253.9	243.7	250.5	257.9	263.3	270.1
62.5°	2209.2	1704.2	1135.7	598.2	280.9	232.3	234.3	247.1	255.9	257.9	261.3
65°	2066.8	1612.4	1053.3	486.8	232.9	220.1	227.5	239.0	247.8	249.1	251.8
67.5°	1805.5	1422.0	892.6	367.3	212.0	210.7	218.8	227.5	233.6	239.0	243.1
70°	1359.8	1173.5	717.7	284.9	199.2	197.8	205.9	213.4	218.8	225.5	232.3
72.5°	689.4	812.3	544.2	232.9	181.6	183.0	191.8	198.5	202.6	208.6	215.4
75°	235.0	354.5	344.3	188.4	162.0	167.4	171.5	178.9	185.0	189.1	192.4
77.5°	147.2	153.9	177.6	151.9	143.1	144.5	151.2	158.0	164.7	167.4	168.8
80°	122.9	123.6	124.2	121.5	122.2	126.3	130.3	137.7	144.5	145.8	146.5
82.5°	97.2	104.0	103.3	102.6	106.0	110.1	112.8	115.5	118.2	119.5	121.5
85°	85.7	84.4	85.1	87.1	84.4	81.7	81.0	81.0	85.1	89.8	91.8
87.5°	78.3	66.8	50.0	47.3	47.3	45.9	43.2	43.2	47.3	51.3	53.3
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-SL4-E04-E-8030

CANDELA DISTRIBUTION (continued):

	160°	165°	170°	175°	180°
0°	2012.1	2012.1	2012.1	2012.1	2012.1
2.5°	1999.9	2000.6	1999.9	1999.9	2003.3
5°	1985.1	1987.8	1986.4	1988.4	1990.5
7.5°	1954.7	1961.4	1962.8	1968.2	1966.2
10°	1910.8	1915.5	1922.3	1927.7	1925.6
12.5°	1841.3	1852.7	1862.9	1868.9	1867.6
15°	1752.8	1769.0	1782.5	1787.2	1781.8
17.5°	1658.3	1668.4	1684.6	1688.0	1693.4
20°	1538.8	1538.1	1552.3	1552.3	1549.6
22.5°	1382.8	1392.9	1392.9	1383.5	1378.7
25°	1223.4	1226.8	1216.7	1218.7	1205.9
27.5°	1063.4	1054.7	1046.5	1049.9	1040.5
30°	910.8	891.9	883.8	885.2	875.0
32.5°	764.3	742.0	733.9	723.1	714.4
35°	631.3	596.2	575.3	569.9	575.9
37.5°	501.0	476.0	451.0	432.8	434.8
40°	396.3	370.7	354.5	347.0	345.7
42.5°	327.5	312.6	309.2	309.9	309.9
45°	297.1	297.8	300.5	303.2	303.8
47.5°	291.0	295.1	299.8	303.2	303.8
50°	290.3	294.4	297.8	301.8	303.2
52.5°	289.7	292.4	294.4	296.4	298.4
55°	287.0	288.3	287.6	289.0	291.0
57.5°	280.2	280.9	279.5	280.2	284.3
60°	274.1	274.8	272.1	275.5	276.2
62.5°	266.7	266.0	264.7	266.7	266.7
65°	255.9	251.8	253.2	255.2	255.9
67.5°	243.1	239.0	239.0	240.4	242.4
70°	226.9	224.8	224.8	227.5	230.2
72.5°	208.6	210.0	214.0	218.1	222.1
75°	193.8	197.2	201.2	211.3	217.4
77.5°	174.9	175.6	178.9	189.1	199.9
80°	148.5	147.9	148.5	149.9	151.9
82.5°	117.5	116.1	112.1	113.4	110.7
85°	86.4	84.4	79.7	76.3	75.6
87.5°	50.0	50.0	47.9	45.2	42.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)