

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: P145450

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145450
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
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (84) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11528.1 lumens
Efficiency: N/A
Efficacy: 118.6 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

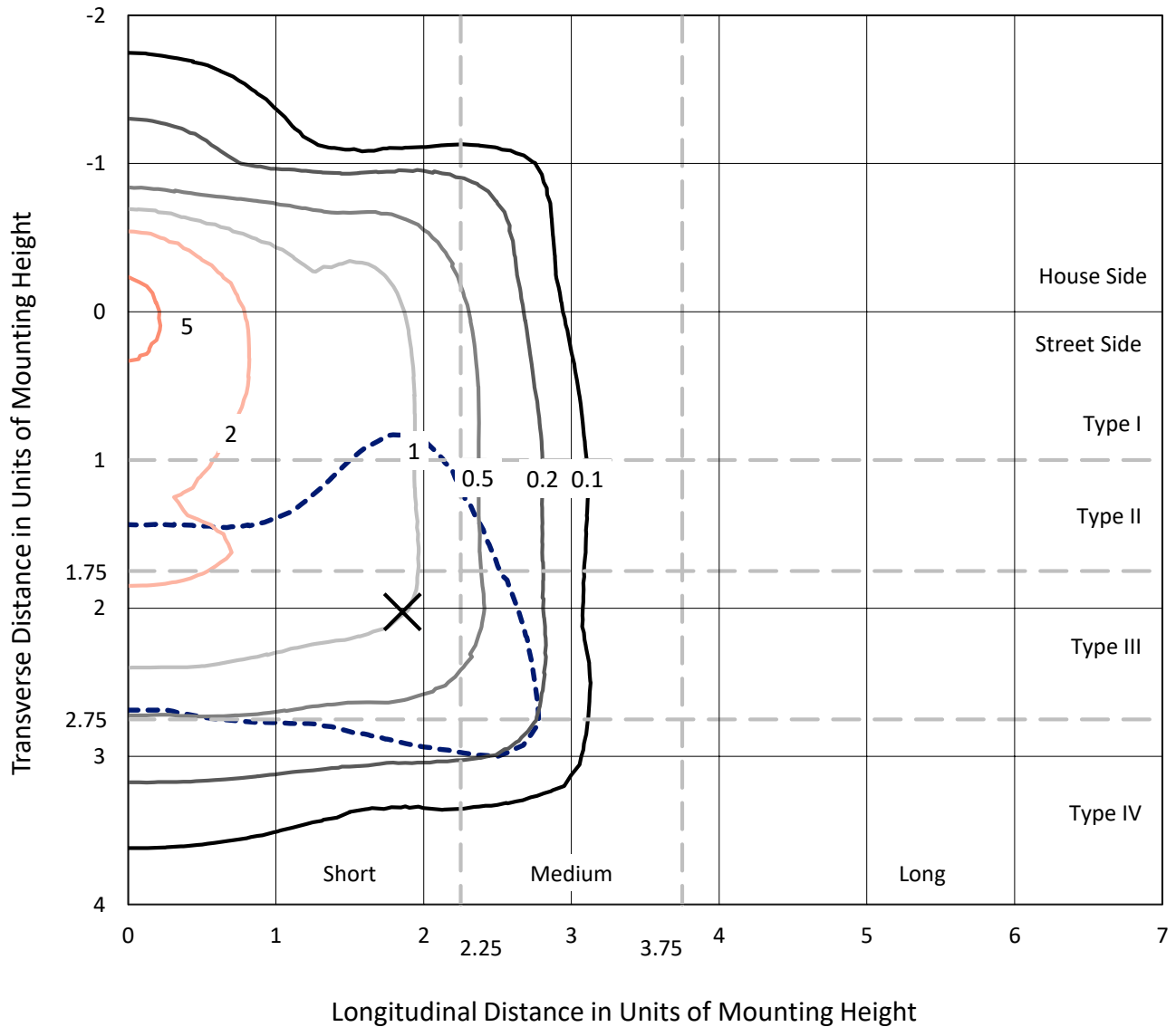
Input Watts (W): 97.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P145450
 CATALOG NUMBER: LDRL-SL4-E04-E

Iso-Footcandle Lines of Horizontal Illumination

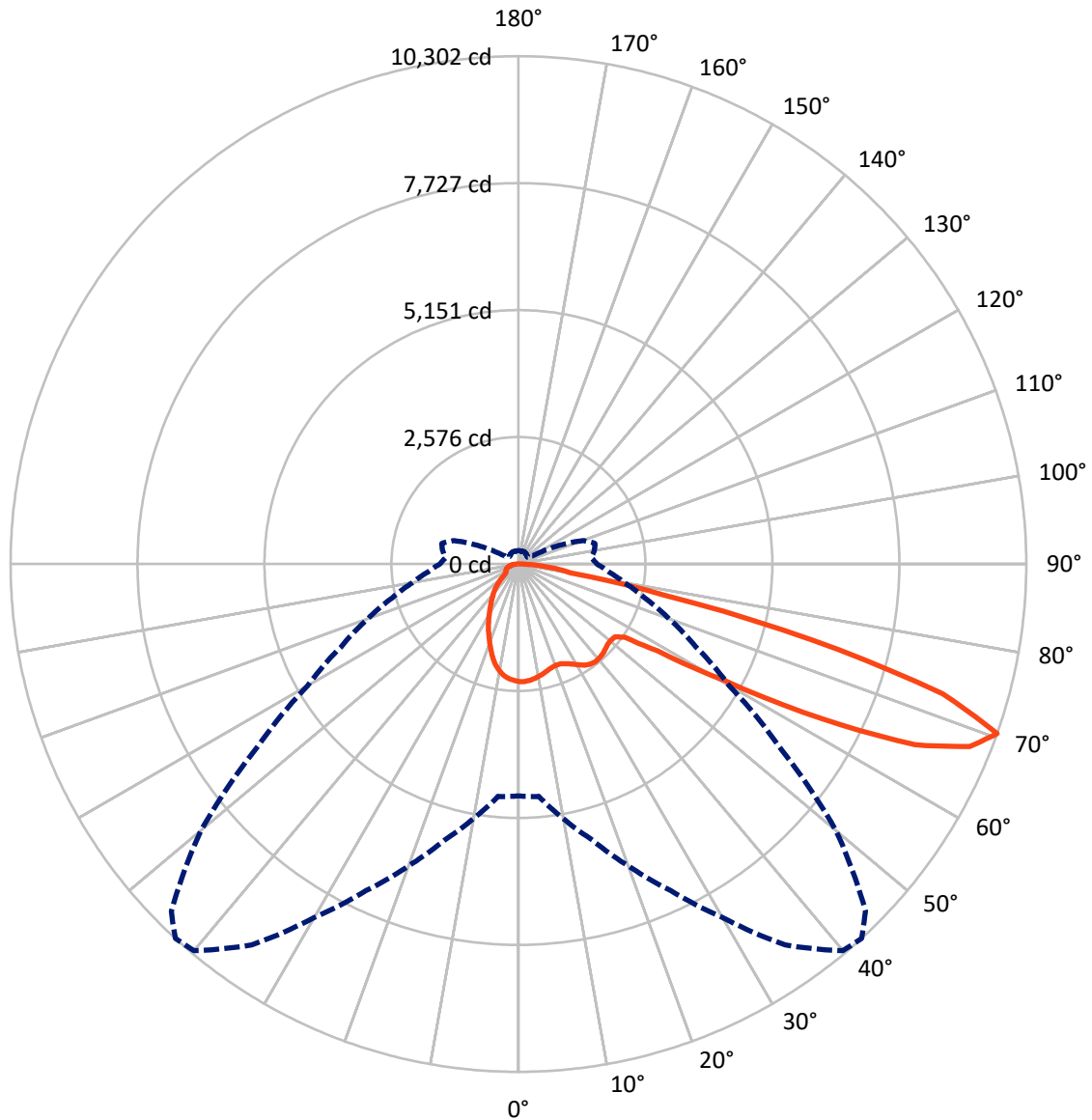
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6 fc
 Type IV - Short - Semi-Cutoff

REPORT NUMBER: P145450
CATALOG NUMBER: LDRL-SL4-E04-E

Luminous Intensity Polar Plot



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

REPORT NUMBER: P145450

CATALOG NUMBER: LDRL-SL4-E04-E

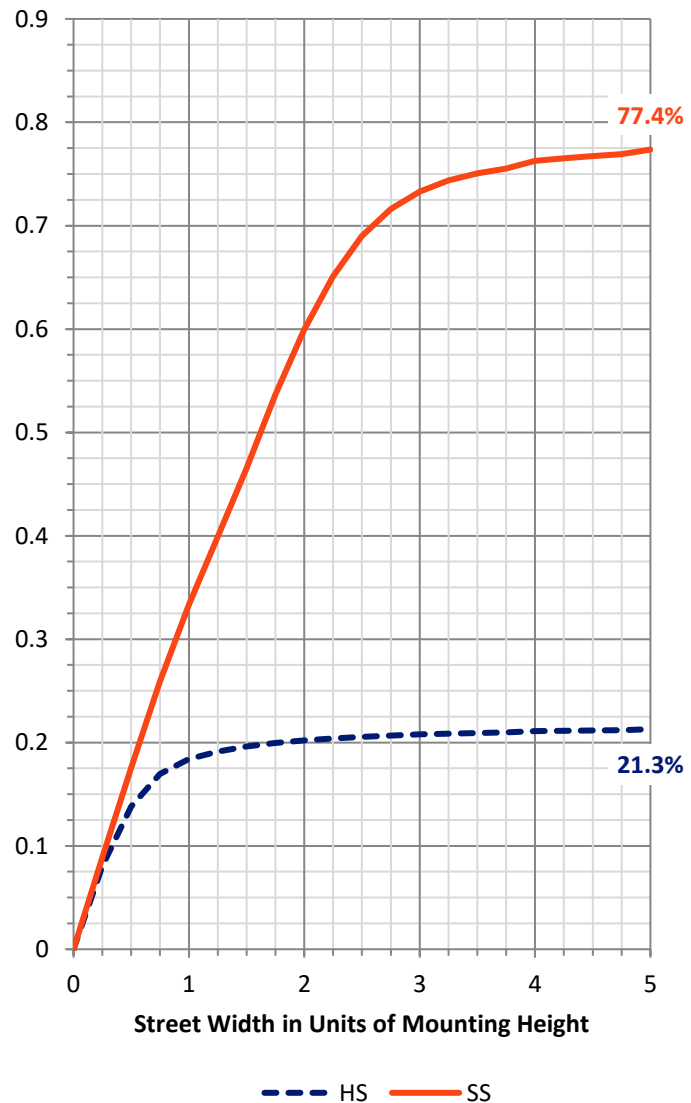
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2490.3	0.0	2490.3
	% Fixture	21.6	0.0	21.6
Street Side	Lumens	9037.8	0.0	9037.8
	% Fixture	78.4	0.0	78.4
Total	Lumens	11528.1	0.0	11528.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.8	1.9
10°-20°	597.5	5.2
20°-30°	871.6	7.6
30°-40°	1111.7	9.6
40°-50°	1297.5	11.3
50°-60°	1984.3	17.2
60°-70°	3596.9	31.2
70°-80°	1599.3	13.9
80°-90°	247.5	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°	11528.1	100.0
0°-180°	11528.1	100.0

Coefficient of Utilization



REPORT NUMBER: P145450

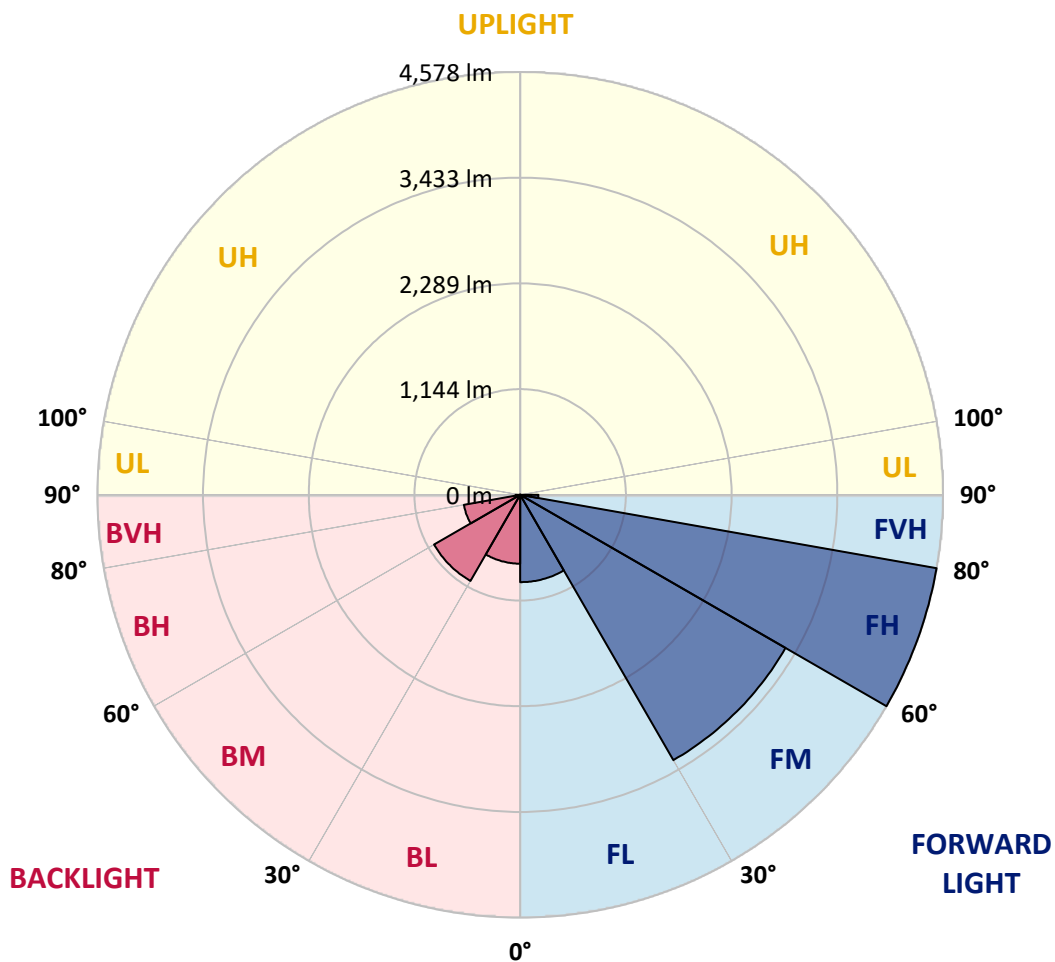
CATALOG NUMBER: LDRL-SL4-E04-E

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	945.6	8.2			
FM	(30°-60°)	3316.9	28.8			
FH	(60°-80°)	4577.6	39.7			G2/5000
FVH	(80°-90°)	197.7	1.7			G2/225
BL	(0°-30°)	745.4	6.5	B2/1000		
BM	(30°-60°)	1076.5	9.3	B2/2500		
BH	(60°-80°)	618.7	5.4	B2/1000		G2/1000
BVH	(80°-90°)	49.8	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





REPORT NUMBER: P145450
 CATALOG NUMBER: LDRL-SL4-E04-E

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	42.5°	45°
0°	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0
2.5°	2395.2	2392.8	2394.4	2396.0	2396.0	2396.8	2389.6	2390.4	2387.2	2388.0	2388.8
5°	2386.4	2384.0	2385.6	2385.6	2385.6	2384.8	2375.2	2374.4	2370.4	2370.4	2368.8
7.5°	2369.6	2360.8	2365.6	2366.4	2364.8	2360.8	2355.2	2349.6	2347.2	2347.2	2341.6
10°	2344.0	2334.4	2336.8	2338.4	2337.6	2329.6	2327.2	2321.6	2315.2	2312.8	2306.4
12.5°	2311.2	2304.8	2308.0	2307.2	2307.2	2300.0	2296.0	2288.0	2280.0	2276.0	2268.0
15°	2290.4	2282.4	2285.6	2285.6	2282.4	2275.2	2269.6	2255.2	2241.6	2236.8	2226.4
17.5°	2303.2	2295.2	2298.4	2296.0	2290.4	2275.2	2260.8	2237.6	2216.0	2203.2	2189.6
20°	2354.4	2346.4	2348.8	2347.2	2339.2	2314.4	2288.0	2248.0	2208.0	2188.8	2168.0
22.5°	2436.0	2429.6	2433.6	2431.2	2418.4	2386.4	2347.2	2289.6	2229.6	2200.8	2171.2
25°	2556.8	2555.2	2561.6	2554.4	2536.0	2488.0	2431.2	2353.6	2275.2	2239.2	2197.6
27.5°	2702.4	2688.8	2698.4	2692.0	2679.2	2618.4	2541.6	2443.2	2343.2	2296.0	2246.4
30°	2833.6	2821.6	2839.2	2836.0	2816.8	2754.4	2657.6	2542.4	2429.6	2369.6	2312.8
32.5°	2985.6	2970.4	2984.0	2984.0	2955.2	2871.2	2760.8	2628.8	2510.4	2446.4	2378.4
35°	3144.8	3128.8	3141.6	3137.6	3086.4	2975.2	2836.8	2693.6	2563.2	2497.6	2428.0
37.5°	3292.8	3290.4	3293.6	3267.2	3196.0	3053.6	2888.0	2728.0	2589.6	2520.8	2448.0
40°	3440.8	3435.2	3421.6	3375.2	3271.2	3100.0	2914.4	2740.0	2591.2	2519.2	2445.6
42.5°	3533.6	3523.2	3500.0	3436.8	3306.4	3111.2	2906.4	2721.6	2572.0	2498.4	2426.4
45°	3565.6	3555.2	3527.2	3456.0	3307.2	3093.6	2875.2	2684.8	2536.0	2468.8	2396.0
47.5°	3539.2	3532.8	3507.2	3436.0	3281.6	3060.8	2836.0	2648.0	2501.6	2436.0	2368.0
50°	3494.4	3490.4	3468.0	3402.4	3257.6	3040.8	2817.6	2630.4	2492.0	2431.2	2367.2
52.5°	3606.4	3594.4	3554.4	3476.8	3308.0	3076.8	2846.4	2656.8	2514.4	2452.8	2387.2
55°	4983.2	4894.4	4696.0	4324.0	3803.2	3399.2	3059.2	2830.4	2676.8	2616.8	2554.4
57.5°	6553.6	6460.8	6378.4	6094.4	5476.0	4712.8	4026.4	3624.8	3349.6	3323.2	3298.4
60°	7158.4	7188.0	7180.8	7075.2	6758.4	6396.0	5821.6	5347.2	4821.6	4800.0	4831.2
62.5°	7575.2	7600.0	7603.2	7571.2	7468.0	7347.2	7227.2	7075.2	6975.2	6932.0	6652.8
65°	7747.2	7783.2	7862.4	7921.6	7938.4	7980.0	8088.8	8502.4	8847.2	8844.8	8517.6
67.5°	7090.4	7133.6	7433.6	7728.0	7975.2	8261.6	8702.4	9375.2	9894.4	9878.4	9610.4
70°	4705.6	4732.8	5242.4	5796.8	6516.0	7311.2	8274.4	9434.4	10239.2	10302.4	9956.8
72.5°	2886.4	2948.8	3115.2	3340.0	3724.0	4460.8	5892.8	7875.2	9056.0	8996.8	8721.6
75°	1948.8	1952.0	1947.2	1971.2	1992.8	2141.6	2718.4	4330.4	6134.4	6166.4	6048.0
77.5°	1332.0	1349.6	1359.2	1352.8	1374.4	1368.0	1401.6	1484.0	2351.2	3000.8	2757.6
80°	1164.0	1171.2	1181.6	1166.4	1126.4	1104.0	1135.2	1105.6	1041.6	1076.0	1030.4
82.5°	736.8	758.4	760.8	813.6	892.0	895.2	935.2	905.6	824.0	770.4	704.8
85°	529.6	537.6	552.0	555.2	528.0	504.8	519.2	494.4	445.6	416.8	368.8
87.5°	308.8	316.8	331.2	322.4	295.2	261.6	236.0	203.2	160.8	150.4	132.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P145450

CATALOG NUMBER: LDRL-SL4-E04-E

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0
2.5°	2389.6	2385.6	2382.4	2380.8	2384.0	2380.8	2377.6	2376.0	2372.8	2373.6	2369.6
5°	2367.2	2361.6	2356.8	2352.8	2356.0	2350.4	2345.6	2342.4	2338.4	2337.6	2333.6
7.5°	2336.0	2327.2	2320.8	2313.6	2305.6	2300.8	2295.2	2289.6	2280.8	2280.0	2278.4
10°	2295.2	2288.0	2275.2	2264.0	2252.8	2240.8	2228.8	2220.0	2209.6	2205.6	2200.0
12.5°	2254.4	2240.0	2224.8	2207.2	2193.6	2174.4	2158.4	2141.6	2126.4	2116.8	2106.4
15°	2206.4	2191.2	2169.6	2152.8	2133.6	2112.0	2091.2	2066.4	2041.6	2026.4	2012.0
17.5°	2164.8	2145.6	2128.0	2104.0	2084.8	2060.0	2028.8	2002.4	1972.8	1948.0	1921.6
20°	2132.8	2111.2	2090.4	2068.8	2045.6	2017.6	1983.2	1945.6	1908.0	1872.8	1833.6
22.5°	2120.0	2085.6	2062.4	2042.4	2018.4	1986.4	1948.0	1901.6	1855.2	1810.4	1764.8
25°	2131.2	2080.0	2044.0	2021.6	2000.0	1967.2	1924.0	1871.2	1816.8	1760.0	1705.6
27.5°	2161.6	2096.8	2045.6	2010.4	1985.6	1953.6	1905.6	1850.4	1788.8	1724.8	1666.4
30°	2205.6	2124.8	2060.8	2010.4	1973.6	1936.8	1884.8	1822.4	1757.6	1690.4	1624.8
32.5°	2253.6	2156.0	2079.2	2012.8	1956.0	1909.6	1855.2	1794.4	1725.6	1654.4	1584.0
35°	2289.6	2178.4	2087.2	2004.0	1931.2	1872.8	1814.4	1755.2	1688.0	1616.0	1545.6
37.5°	2304.8	2187.2	2085.6	1985.6	1896.8	1832.8	1772.0	1712.8	1648.0	1580.0	1515.2
40°	2305.6	2187.2	2076.0	1960.8	1860.8	1791.2	1727.2	1672.0	1611.2	1552.8	1495.2
42.5°	2290.4	2176.0	2058.4	1937.6	1834.4	1756.0	1690.4	1633.6	1584.8	1532.8	1484.0
45°	2263.2	2153.6	2042.4	1924.8	1824.8	1747.2	1676.8	1623.2	1579.2	1532.8	1490.4
47.5°	2242.4	2140.8	2043.2	1943.2	1848.0	1768.0	1692.0	1635.2	1597.6	1560.8	1530.4
50°	2246.4	2145.6	2052.8	1957.6	1864.0	1783.2	1709.6	1660.8	1638.4	1626.4	1619.2
52.5°	2267.2	2164.8	2094.4	2031.2	2000.8	1951.2	1910.4	1873.6	1879.2	1850.4	1813.6
55°	2481.6	2447.2	2528.0	2586.4	2615.2	2665.6	2738.4	2668.8	2659.2	2570.4	2306.4
57.5°	3332.0	3413.6	3537.6	3625.6	3634.4	3619.2	3559.2	3501.6	3408.0	3274.4	2904.8
60°	4758.4	4739.2	4624.0	4469.6	4349.6	4192.0	4033.6	3900.0	3749.6	3544.8	3151.2
62.5°	6258.4	5796.0	5385.6	5036.0	4739.2	4476.0	4236.8	4036.0	3829.6	3535.2	3116.0
65°	7469.6	6580.0	5856.8	5294.4	4852.8	4480.8	4172.0	3895.2	3619.2	3278.4	2872.0
67.5°	8335.2	6924.0	5832.8	5041.6	4422.4	3910.4	3460.8	3145.6	2862.4	2594.4	2411.2
70°	8404.0	6448.0	4934.4	3966.4	3252.0	2650.4	2184.0	1840.0	1593.6	1482.4	1561.6
72.5°	7181.6	4770.4	3280.8	2428.0	1927.2	1497.6	1204.0	962.4	764.0	666.4	680.0
75°	4229.6	2290.4	1477.6	1100.8	899.2	718.4	621.6	524.8	463.2	371.2	296.8
77.5°	1610.4	996.0	745.6	619.2	441.6	317.6	250.4	216.0	198.4	196.0	185.6
80°	928.0	730.4	511.2	334.4	244.8	207.2	177.6	152.0	141.6	139.2	143.2
82.5°	586.4	455.2	280.8	215.2	178.4	153.6	128.0	111.2	102.4	99.2	104.8
85°	303.2	228.0	171.2	147.2	136.8	124.8	102.4	85.6	84.8	88.8	102.4
87.5°	112.0	97.6	76.8	66.4	71.2	66.4	48.0	41.6	37.6	49.6	72.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P145450
 CATALOG NUMBER: LDRL-SL4-E04-E

CANDELA DISTRIBUTION (continued):

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0	2384.0
2.5°	2369.6	2368.0	2368.8	2367.2	2367.2	2369.6	2366.4	2364.0	2368.0	2368.0	2370.4
5°	2332.8	2334.4	2334.4	2333.6	2335.2	2339.2	2338.4	2338.4	2344.8	2347.2	2350.4
7.5°	2274.4	2276.8	2277.6	2280.0	2280.8	2286.4	2290.4	2295.2	2304.8	2307.2	2314.4
10°	2195.2	2193.6	2199.2	2198.4	2205.6	2210.4	2213.6	2224.0	2238.4	2246.4	2253.6
12.5°	2101.6	2101.6	2104.8	2105.6	2112.0	2118.4	2122.4	2135.2	2147.2	2157.6	2173.6
15°	2002.4	1999.2	1992.0	1991.2	1993.6	2000.0	2008.8	2018.4	2036.8	2052.0	2065.6
17.5°	1898.4	1888.8	1880.0	1868.8	1868.0	1867.2	1872.0	1879.2	1908.0	1923.2	1942.4
20°	1806.4	1785.6	1764.8	1741.6	1728.0	1721.6	1724.0	1733.6	1760.8	1780.8	1800.8
22.5°	1724.0	1692.8	1660.0	1623.2	1600.8	1587.2	1588.8	1592.8	1612.8	1624.8	1635.2
25°	1653.6	1610.4	1564.8	1517.6	1486.4	1465.6	1464.8	1464.8	1456.0	1457.6	1452.0
27.5°	1605.6	1545.6	1487.2	1432.0	1391.2	1370.4	1342.4	1322.4	1304.8	1280.8	1270.4
30°	1559.2	1497.6	1431.2	1370.4	1321.6	1280.8	1228.8	1185.6	1151.2	1118.4	1090.4
32.5°	1517.6	1453.6	1390.4	1324.0	1256.8	1186.4	1118.4	1068.8	1020.0	969.6	936.0
35°	1480.8	1420.8	1357.6	1282.4	1188.0	1096.0	1019.2	952.0	894.4	833.6	784.8
37.5°	1460.0	1405.6	1340.0	1237.6	1119.2	1014.4	928.8	853.6	776.8	704.0	644.0
40°	1449.6	1401.6	1321.6	1192.0	1057.6	945.6	850.4	760.0	669.6	584.0	521.6
42.5°	1448.0	1401.6	1294.4	1145.6	1004.8	884.8	778.4	669.6	560.0	476.8	421.6
45°	1462.4	1400.0	1265.6	1104.0	957.6	830.4	702.4	574.4	461.6	388.8	358.4
47.5°	1504.0	1405.6	1243.2	1068.8	912.8	770.4	616.0	468.8	372.8	340.0	339.2
50°	1571.2	1431.2	1238.4	1043.2	868.8	695.2	514.4	375.2	328.8	327.2	336.0
52.5°	1677.6	1479.2	1250.4	1025.6	816.0	597.6	407.2	324.0	315.2	324.0	335.2
55°	1912.0	1564.8	1266.4	994.4	730.4	473.6	335.2	307.2	311.2	321.6	332.0
57.5°	2338.4	1742.4	1283.2	924.0	592.0	364.0	301.6	300.8	308.0	316.8	326.4
60°	2608.8	1961.6	1324.0	820.0	447.2	300.8	288.8	296.8	305.6	312.0	320.0
62.5°	2617.6	2019.2	1345.6	708.8	332.8	275.2	277.6	292.8	303.2	305.6	309.6
65°	2448.8	1910.4	1248.0	576.8	276.0	260.8	269.6	283.2	293.6	295.2	298.4
67.5°	2139.2	1684.8	1057.6	435.2	251.2	249.6	259.2	269.6	276.8	283.2	288.0
70°	1611.2	1390.4	850.4	337.6	236.0	234.4	244.0	252.8	259.2	267.2	275.2
72.5°	816.8	962.4	644.8	276.0	215.2	216.8	227.2	235.2	240.0	247.2	255.2
75°	278.4	420.0	408.0	223.2	192.0	198.4	203.2	212.0	219.2	224.0	228.0
77.5°	174.4	182.4	210.4	180.0	169.6	171.2	179.2	187.2	195.2	198.4	200.0
80°	145.6	146.4	147.2	144.0	144.8	149.6	154.4	163.2	171.2	172.8	173.6
82.5°	115.2	123.2	122.4	121.6	125.6	130.4	133.6	136.8	140.0	141.6	144.0
85°	101.6	100.0	100.8	103.2	100.0	96.8	96.0	96.0	100.8	106.4	108.8
87.5°	92.8	79.2	59.2	56.0	56.0	54.4	51.2	51.2	56.0	60.8	63.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P145450

CATALOG NUMBER: LDRL-SL4-E04-E

CANDELA DISTRIBUTION (continued):

	160°	165°	170°	175°	180°
0°	2384.0	2384.0	2384.0	2384.0	2384.0
2.5°	2369.6	2370.4	2369.6	2369.6	2373.6
5°	2352.0	2355.2	2353.6	2356.0	2358.4
7.5°	2316.0	2324.0	2325.6	2332.0	2329.6
10°	2264.0	2269.6	2277.6	2284.0	2281.6
12.5°	2181.6	2195.2	2207.2	2214.4	2212.8
15°	2076.8	2096.0	2112.0	2117.6	2111.2
17.5°	1964.8	1976.8	1996.0	2000.0	2006.4
20°	1823.2	1822.4	1839.2	1839.2	1836.0
22.5°	1638.4	1650.4	1650.4	1639.2	1633.6
25°	1449.6	1453.6	1441.6	1444.0	1428.8
27.5°	1260.0	1249.6	1240.0	1244.0	1232.8
30°	1079.2	1056.8	1047.2	1048.8	1036.8
32.5°	905.6	879.2	869.6	856.8	846.4
35°	748.0	706.4	681.6	675.2	682.4
37.5°	593.6	564.0	534.4	512.8	515.2
40°	469.6	439.2	420.0	411.2	409.6
42.5°	388.0	370.4	366.4	367.2	367.2
45°	352.0	352.8	356.0	359.2	360.0
47.5°	344.8	349.6	355.2	359.2	360.0
50°	344.0	348.8	352.8	357.6	359.2
52.5°	343.2	346.4	348.8	351.2	353.6
55°	340.0	341.6	340.8	342.4	344.8
57.5°	332.0	332.8	331.2	332.0	336.8
60°	324.8	325.6	322.4	326.4	327.2
62.5°	316.0	315.2	313.6	316.0	316.0
65°	303.2	298.4	300.0	302.4	303.2
67.5°	288.0	283.2	283.2	284.8	287.2
70°	268.8	266.4	266.4	269.6	272.8
72.5°	247.2	248.8	253.6	258.4	263.2
75°	229.6	233.6	238.4	250.4	257.6
77.5°	207.2	208.0	212.0	224.0	236.8
80°	176.0	175.2	176.0	177.6	180.0
82.5°	139.2	137.6	132.8	134.4	131.2
85°	102.4	100.0	94.4	90.4	89.6
87.5°	59.2	59.2	56.8	53.6	50.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)