

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: P163816

Luminaire Tested: **LDRL-SL4-E04-E-7030-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P163816  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33728)  
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-7030-HSS  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL AND HOUSE SIDE SHIELD  
Light Source: (84) 3000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7210.9 lumens  
Efficiency: N/A  
Efficacy: 74.2 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.1')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B0 - U0 - G2

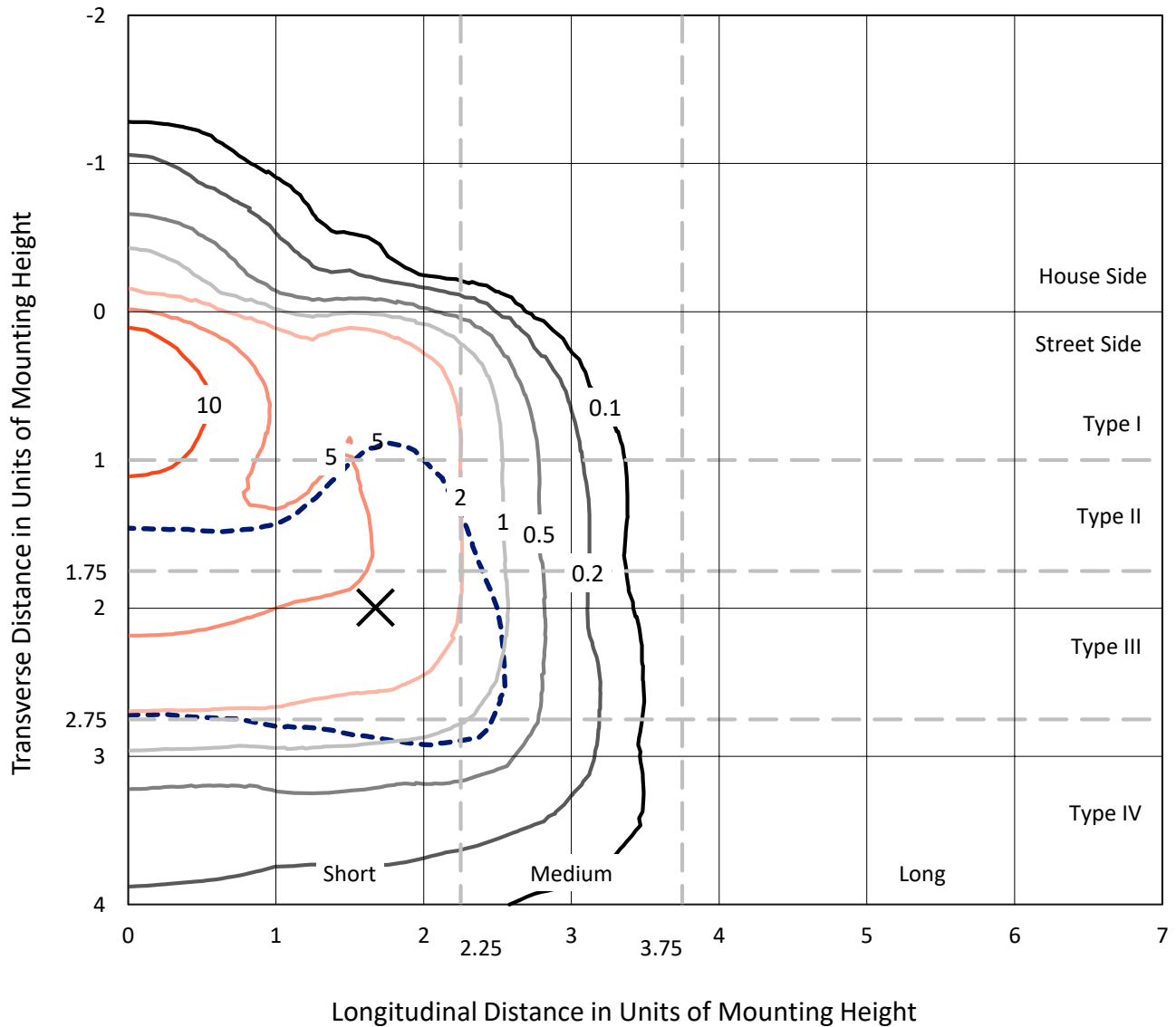
Input Watts (W): 97.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



REPORT NUMBER: P163816  
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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

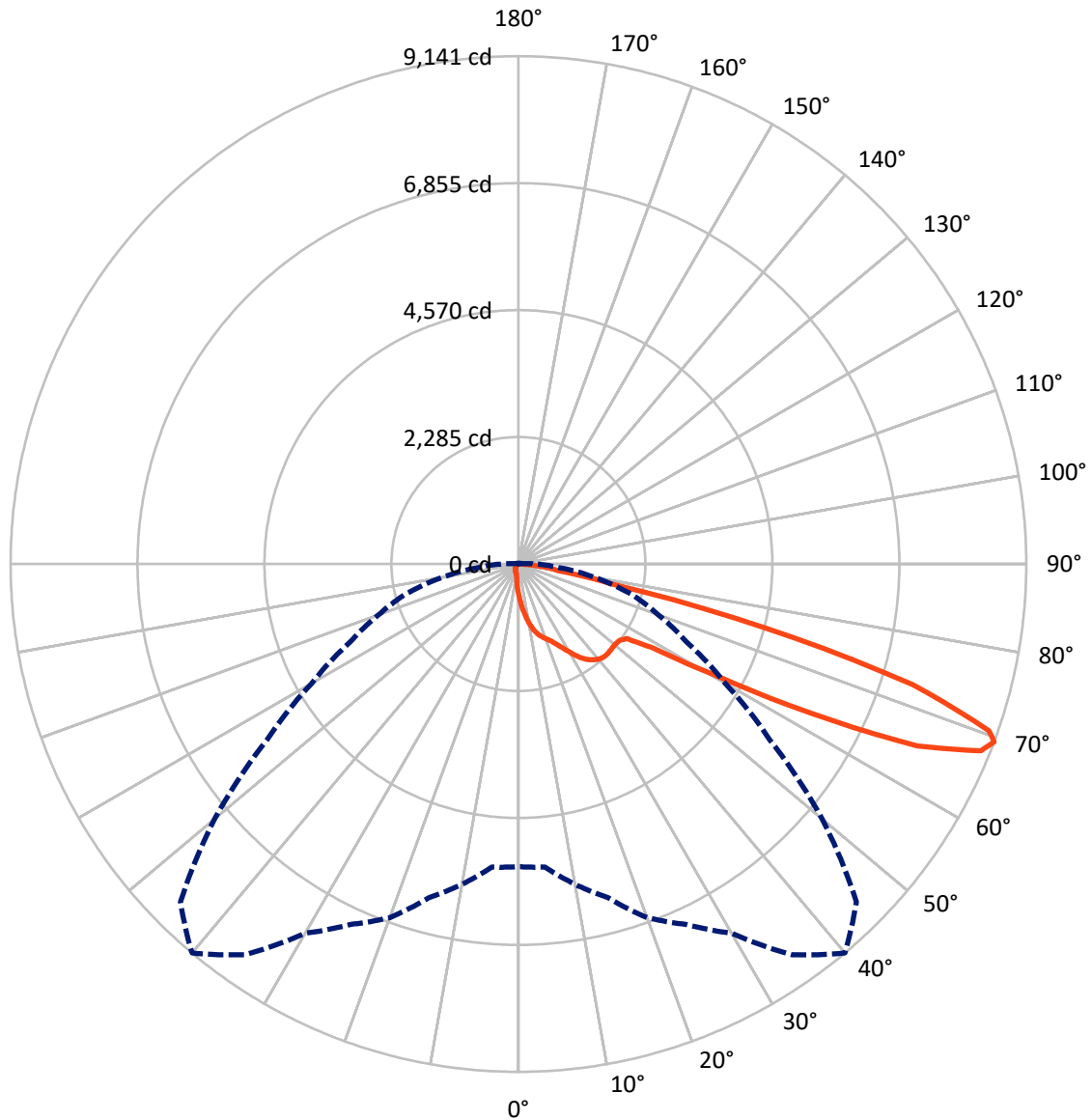


Based on 10 foot mounting height. Maximum calculated value = 16.1 fc  
 Type IV - Short - Semi-Cutoff

REPORT NUMBER: P163816

CATALOG NUMBER: LDRL-SL4-E04-E-7030-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 40-Deg Lateral    - - - Horizontal Cone Through 69-Deg Vertical

REPORT NUMBER: P163816

CATALOG NUMBER: LDRL-SL4-E04-E-7030-HSS

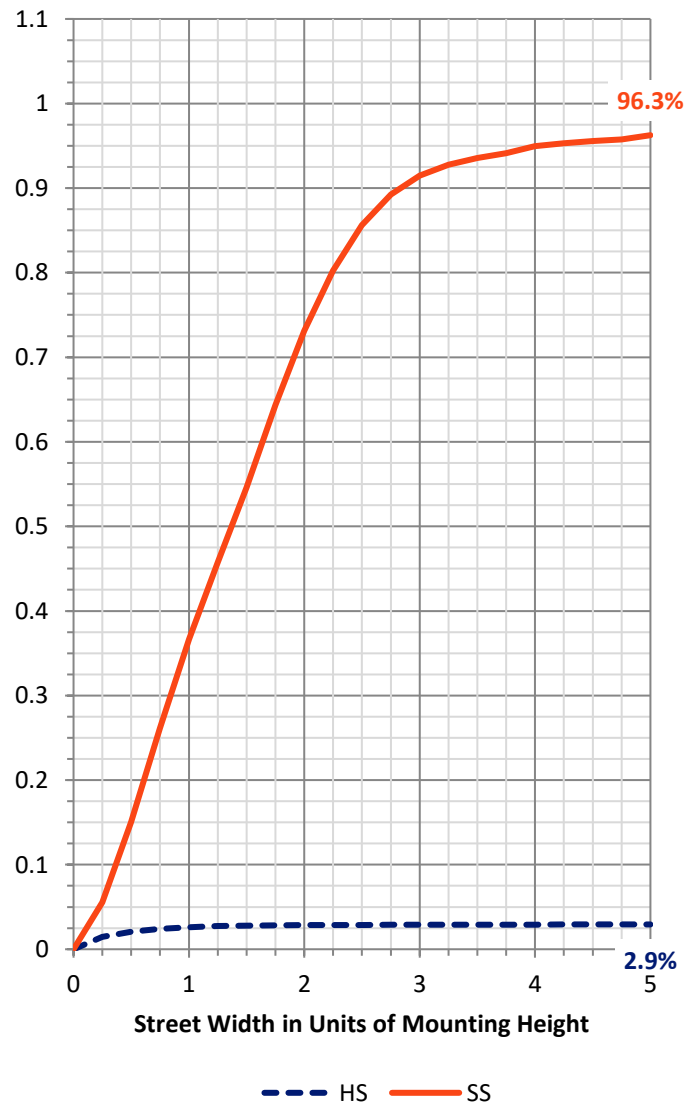
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	214.7	0.0	214.7
	% Fixture	3.0	0.0	3.0
<b>Street Side</b>	Lumens	6996.2	0.0	6996.2
	% Fixture	97.0	0.0	97.0
<b>Total</b>	Lumens	7210.9	0.0	7210.9
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	56.0	0.8
10°-20°	193.0	2.7
20°-30°	369.3	5.1
30°-40°	614.2	8.5
40°-50°	831.2	11.5
50°-60°	1299.9	18.0
60°-70°	2672.5	37.1
70°-80°	1075.4	14.9
80°-90°	99.5	1.4
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°	7210.9	100.0
0°-180°	7210.9	100.0



REPORT NUMBER: P163816

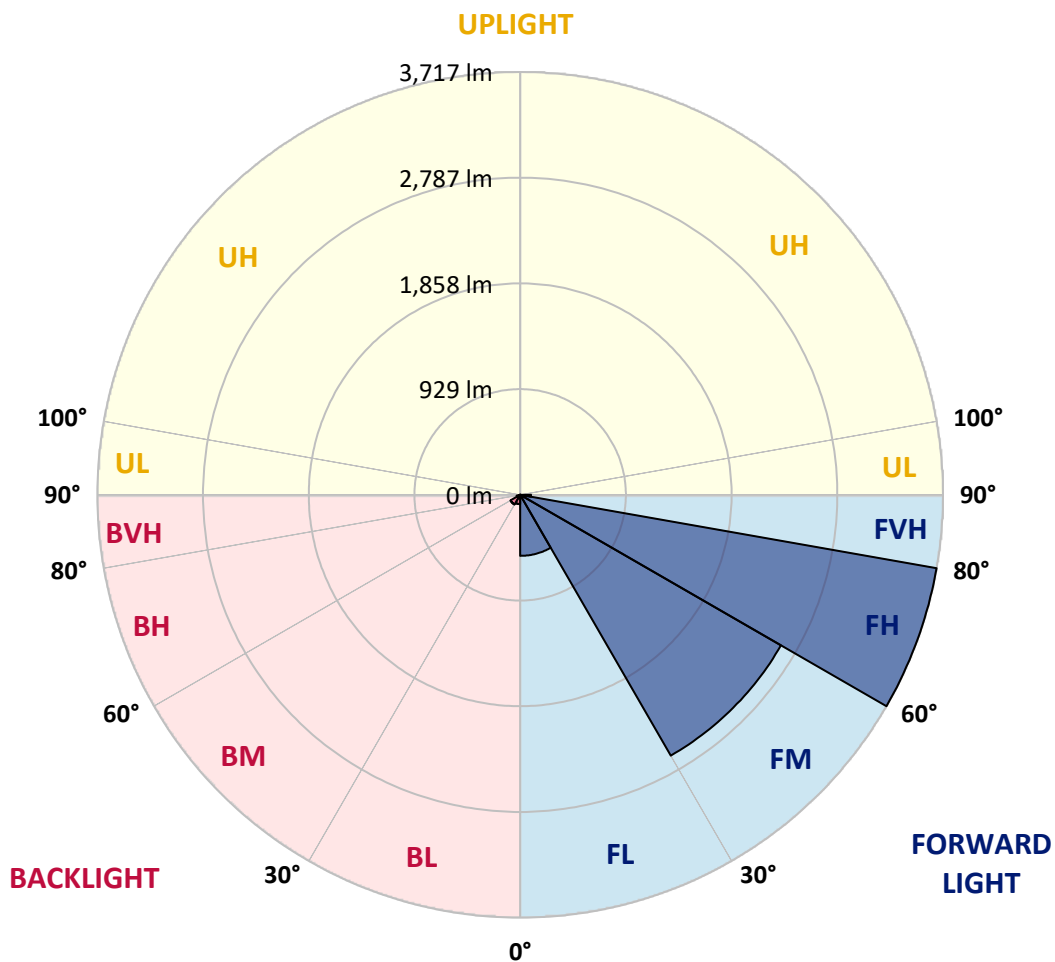
CATALOG NUMBER: LDRL-SL4-E04-E-7030-HSS

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	536.6	7.4			
FM (30°-60°)	2647.2	36.7			
FH (60°-80°)	3716.5	51.5			G2/5000
FVH (80°-90°)	95.8	1.3			G1/100
BL (0°-30°)	81.7	1.1	B0/110		
BM (30°-60°)	98.0	1.4	B0/220		
BH (60°-80°)	31.3	0.4	B0/110		G0/110
BVH (80°-90°)	3.7	0.1			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B0-U0-G2**

Type IV Short





REPORT NUMBER: P163816

CATALOG NUMBER: LDRL-SL4-E04-E-7030-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	544.6	544.6	544.6	544.6	544.6	544.6	544.6	544.6	544.6	544.6	544.6
2.5°	726.4	718.2	708.8	708.8	696.9	696.9	689.8	671.0	668.6	658.0	647.3
5°	927.3	920.2	908.4	897.8	888.3	871.8	859.9	837.5	812.7	789.1	767.8
7.5°	1123.3	1119.8	1098.6	1095.0	1079.7	1052.5	1028.9	995.8	953.2	920.2	881.2
10°	1305.3	1297.0	1292.3	1272.2	1249.8	1220.2	1183.6	1143.4	1093.8	1041.9	986.3
12.5°	1449.4	1444.7	1423.4	1415.1	1391.5	1362.0	1315.9	1263.9	1214.3	1147.0	1082.1
15°	1556.9	1548.6	1534.4	1521.4	1493.1	1467.1	1424.6	1367.9	1307.6	1234.4	1156.4
17.5°	1646.7	1631.3	1627.7	1607.7	1578.1	1547.4	1500.2	1448.2	1377.3	1304.1	1219.1
20°	1767.2	1745.9	1738.8	1709.3	1675.0	1632.5	1578.1	1513.2	1438.8	1358.4	1271.0
22.5°	1908.9	1893.6	1878.2	1852.2	1808.5	1748.2	1669.1	1598.2	1503.7	1415.1	1320.6
25°	2109.7	2096.8	2071.9	2036.5	1982.1	1910.1	1814.4	1710.4	1599.4	1486.0	1375.0
27.5°	2304.6	2292.8	2275.1	2247.9	2186.5	2107.4	1989.2	1857.0	1716.4	1579.4	1456.5
30°	2487.7	2477.1	2459.4	2432.2	2377.9	2299.9	2166.4	2024.6	1849.9	1690.4	1542.7
32.5°	2685.0	2681.5	2661.4	2622.4	2575.1	2470.0	2324.7	2172.3	1995.1	1810.8	1638.4
35°	2908.3	2881.1	2862.1	2823.2	2742.9	2630.7	2460.6	2294.0	2107.4	1918.3	1725.8
37.5°	3097.3	3071.3	3047.7	2998.1	2900.0	2757.1	2564.5	2381.4	2188.9	1996.3	1800.3
40°	3235.5	3222.4	3194.1	3129.1	3019.3	2849.2	2641.3	2441.6	2247.9	2054.2	1860.5
42.5°	3338.3	3318.2	3286.2	3218.9	3089.0	2895.2	2672.0	2466.5	2275.1	2089.7	1899.5
45°	3376.0	3359.5	3329.9	3256.7	3116.1	2908.3	2670.8	2459.4	2276.3	2100.3	1925.4
47.5°	3353.6	3337.0	3311.1	3242.5	3104.4	2892.9	2649.5	2439.3	2264.5	2103.8	1949.1
50°	3279.1	3269.7	3249.6	3191.8	3067.7	2863.4	2630.7	2428.6	2262.1	2121.5	1982.1
52.5°	3272.1	3266.1	3241.4	3183.5	3057.1	2853.9	2628.3	2434.6	2282.2	2144.0	2005.8
55°	3998.6	3914.7	3726.8	3567.4	3305.2	2993.3	2747.6	2530.3	2367.3	2232.6	2135.7
57.5°	5683.0	5557.8	5310.9	5007.4	4404.9	3813.1	3339.4	2996.8	2828.0	2766.5	2803.1
60°	6472.1	6449.6	6410.7	6266.5	5958.3	5449.1	4882.1	4269.1	4023.3	4002.1	4076.5
62.5°	6846.5	6832.4	6844.2	6826.5	6730.8	6582.0	6419.0	6154.3	5911.0	5753.9	5420.8
65°	7019.0	7028.5	7095.8	7149.0	7160.7	7199.8	7319.1	7648.6	7889.6	7484.4	6559.5
67.5°	6580.8	6636.3	6791.0	6984.8	7211.5	7431.2	7785.6	8480.2	8975.2	8499.1	7185.6
69°	5448.0	5475.1	5853.1	6218.1	6772.2	7159.6	7673.5	8584.2	9140.5	8603.1	7136.0
70°	4289.2	4313.9	4719.1	5215.2	6152.0	6650.4	7322.6	8408.2	8985.8	8464.9	6880.8
72.5°	1934.9	1899.5	2042.4	2308.1	3326.4	4117.8	5293.2	6812.3	7413.6	6781.6	5147.9
75°	1351.3	1336.0	1351.3	1352.6	1510.8	1949.1	2459.4	3692.6	4566.8	3940.6	2459.4
77.5°	1046.6	1036.0	1025.4	1013.5	1032.5	1156.4	1206.1	1310.0	1701.0	1608.9	937.9
80°	828.1	818.6	844.6	836.3	836.3	850.5	841.1	802.1	728.9	675.7	604.8
82.5°	385.1	387.5	387.5	420.5	506.7	591.8	619.0	580.0	515.1	438.3	353.2
85°	36.6	41.4	69.7	107.5	213.8	241.0	242.1	200.8	200.8	158.3	127.6
87.5°	0.0	1.2	1.2	1.2	10.6	29.5	24.8	7.1	3.5	3.5	5.9
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: P163816

CATALOG NUMBER: LDRL-SL4-E04-E-7030-HSS

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	544.6	544.6	544.6	544.6	544.6	544.6	544.6	544.6	544.6	544.6	544.6
2.5°	628.5	624.9	610.7	596.5	583.5	569.3	556.3	543.4	529.2	518.6	505.6
5°	734.8	708.8	679.2	650.9	622.5	593.0	562.3	535.1	506.7	480.8	455.9
7.5°	842.3	791.5	751.3	700.5	654.4	608.4	565.8	522.1	482.0	444.2	408.7
10°	933.2	871.8	809.2	744.2	678.1	616.6	557.6	505.6	452.4	406.3	362.6
12.5°	1007.6	929.6	852.9	771.4	696.9	619.0	545.7	483.1	420.5	368.6	323.7
15°	1075.0	985.2	893.0	798.6	704.0	615.5	533.9	455.9	392.2	333.1	282.3
17.5°	1129.3	1026.5	922.6	816.2	714.7	610.7	518.6	437.1	362.6	301.2	251.6
20°	1176.5	1069.1	956.8	837.5	721.8	609.5	505.6	413.4	336.6	271.7	223.2
22.5°	1220.2	1112.8	992.3	864.7	732.4	608.4	493.8	395.7	314.2	249.2	200.8
25°	1269.8	1156.4	1030.0	893.0	751.3	613.0	486.7	381.6	294.1	228.0	183.1
27.5°	1325.4	1206.1	1075.0	928.5	776.1	622.5	484.3	366.2	276.4	207.9	168.9
30°	1403.3	1265.1	1119.8	963.9	798.6	633.1	482.0	356.7	258.7	192.5	154.8
32.5°	1471.8	1323.0	1169.5	1000.5	823.3	643.8	480.8	343.7	242.1	177.2	144.1
35°	1543.9	1376.2	1212.0	1036.0	844.6	655.6	479.6	334.3	226.8	161.8	133.5
37.5°	1606.5	1421.0	1245.0	1066.6	868.2	666.2	480.8	326.0	212.6	148.8	124.0
40°	1659.7	1467.1	1281.7	1095.0	893.0	682.7	482.0	317.8	198.5	137.0	115.7
42.5°	1706.9	1510.8	1320.6	1126.9	921.4	701.7	489.0	310.7	186.6	126.4	107.5
45°	1743.5	1551.0	1363.2	1171.8	967.4	732.4	502.1	305.9	174.9	116.9	100.4
47.5°	1781.3	1610.1	1435.2	1242.7	1034.8	780.8	524.5	304.8	165.4	109.8	94.5
50°	1833.3	1669.1	1499.0	1314.7	1096.2	830.4	551.7	305.9	153.6	102.7	88.6
52.5°	1871.1	1729.4	1581.7	1440.0	1242.7	981.6	656.8	327.2	147.7	96.9	81.5
55°	2094.3	2069.6	2073.1	2096.8	1944.3	1670.3	1098.6	472.5	173.6	109.8	80.3
57.5°	2953.1	3040.6	3091.4	3090.2	2838.5	2354.3	1475.4	607.2	193.7	127.6	95.6
60°	4082.4	4016.3	3922.9	3692.6	3358.3	2687.4	1650.2	653.2	167.8	101.6	87.4
62.5°	5080.6	4693.2	4349.4	3976.1	3537.9	2803.1	1685.7	649.7	146.5	76.8	61.5
65°	5703.1	5006.2	4450.9	3983.2	3467.0	2706.2	1594.7	596.5	124.0	62.6	50.8
67.5°	5851.9	4837.2	4051.7	3455.2	2896.4	2106.2	1170.6	448.9	96.9	52.0	44.9
69°	5527.1	4299.8	3357.1	2680.3	2107.4	1397.4	724.1	283.5	74.4	47.3	41.4
70°	5084.1	3739.8	2734.6	2151.0	1560.4	981.6	506.7	199.6	60.2	43.7	37.8
72.5°	3270.9	1964.4	1344.2	935.6	643.8	391.0	198.5	89.8	46.0	36.6	30.7
75°	1268.7	726.4	526.8	400.4	313.0	217.4	120.5	57.9	38.9	30.7	23.6
77.5°	624.9	478.4	391.0	268.2	155.9	96.9	65.0	44.9	31.9	22.4	15.3
80°	493.8	328.4	196.1	121.7	92.1	69.7	49.6	36.6	23.6	14.2	10.6
82.5°	252.8	138.2	101.6	82.7	68.5	54.4	40.2	26.0	15.3	9.4	8.3
85°	79.1	57.9	52.0	50.8	47.3	38.9	28.4	16.5	9.4	5.9	5.9
87.5°	5.9	8.3	10.6	8.3	9.4	8.3	10.6	7.1	4.7	4.7	3.5
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: P163816

CATALOG NUMBER: LDRL-SL4-E04-E-7030-HSS

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	544.6	544.6	544.6	544.6	544.6	544.6	544.6	544.6	544.6	544.6	544.6
2.5°	496.1	482.0	469.0	460.7	445.3	439.4	433.5	431.2	420.5	422.9	413.4
5°	433.5	408.7	389.8	370.9	353.2	340.2	329.5	316.6	305.9	301.2	291.8
7.5°	376.8	345.0	320.1	300.0	278.8	262.2	248.1	238.6	229.1	219.7	215.0
10°	327.2	292.9	264.6	244.5	224.5	210.3	199.6	192.5	186.6	183.1	181.9
12.5°	281.2	248.1	222.1	204.4	189.0	181.9	177.2	173.6	172.4	171.3	171.3
15°	245.7	212.6	192.5	179.5	172.4	168.9	167.8	165.4	163.0	161.8	161.8
17.5°	212.6	187.8	173.6	166.5	163.0	160.7	158.3	155.9	153.6	152.3	152.3
20°	190.2	170.1	163.0	158.3	154.8	152.3	148.8	146.5	145.3	144.1	142.9
22.5°	172.4	159.4	154.8	151.2	146.5	142.9	140.6	138.2	135.8	134.7	133.5
25°	159.4	151.2	147.7	142.9	138.2	134.7	131.1	127.6	125.2	124.0	121.7
27.5°	150.0	144.1	139.4	133.5	128.7	125.2	121.7	118.2	115.7	113.4	112.2
30°	141.8	135.8	129.9	125.2	119.3	115.7	111.1	107.5	106.3	104.0	101.6
32.5°	133.5	127.6	121.7	115.7	109.8	105.1	102.7	98.1	95.6	94.5	92.1
35°	124.0	118.2	111.1	106.3	100.4	95.6	92.1	88.6	86.2	83.9	82.7
37.5°	115.7	108.7	101.6	95.6	91.0	86.2	82.7	79.1	76.8	74.4	73.2
40°	106.3	99.2	92.1	86.2	81.5	78.0	74.4	70.9	68.5	67.3	67.3
42.5°	98.1	89.8	82.7	78.0	74.4	69.7	66.1	62.6	61.5	60.2	61.5
45°	89.8	81.5	75.6	70.9	67.3	62.6	59.0	56.7	55.5	56.7	57.9
47.5°	82.7	74.4	68.5	65.0	61.5	57.9	54.4	52.0	52.0	54.4	56.7
50°	75.6	67.3	62.6	60.2	56.7	53.1	48.4	47.3	48.4	50.8	53.1
52.5°	68.5	59.0	55.5	54.4	50.8	47.3	43.7	42.5	43.7	46.0	44.9
55°	61.5	52.0	50.8	49.6	46.0	41.4	37.8	37.8	37.8	36.6	34.3
57.5°	59.0	46.0	44.9	43.7	40.2	35.4	33.1	30.7	29.5	26.0	24.8
60°	61.5	41.4	41.4	38.9	35.4	30.7	27.2	23.6	21.3	18.9	18.9
62.5°	49.6	37.8	36.6	34.3	29.5	24.8	21.3	17.7	16.5	15.3	15.3
65°	40.2	34.3	31.9	28.4	24.8	20.1	16.5	14.2	13.0	13.0	14.2
67.5°	36.6	30.7	27.2	23.6	20.1	15.3	13.0	11.8	11.8	13.0	13.0
69°	34.3	28.4	24.8	21.3	17.7	14.2	11.8	11.8	11.8	11.8	13.0
70°	31.9	27.2	23.6	20.1	15.3	11.8	10.6	10.6	11.8	11.8	13.0
72.5°	24.8	21.3	20.1	16.5	11.8	10.6	9.4	10.6	10.6	11.8	11.8
75°	18.9	15.3	15.3	13.0	9.4	8.3	8.3	9.4	9.4	10.6	10.6
77.5°	13.0	10.6	10.6	9.4	8.3	7.1	7.1	8.3	9.4	9.4	10.6
80°	9.4	8.3	7.1	8.3	7.1	5.9	7.1	8.3	8.3	9.4	9.4
82.5°	7.1	7.1	7.1	7.1	5.9	5.9	7.1	7.1	8.3	9.4	9.4
85°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1	8.3	8.3
87.5°	3.5	3.5	3.5	4.7	4.7	5.9	5.9	5.9	5.9	7.1	7.1
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: P163816

CATALOG NUMBER: LDRL-SL4-E04-E-7030-HSS

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	544.6	544.6	544.6	544.6
2.5°	411.1	409.9	405.2	406.3
5°	288.3	281.2	285.8	284.7
7.5°	211.5	210.3	209.0	211.5
10°	180.7	180.7	179.5	180.7
12.5°	170.1	170.1	170.1	170.1
15°	161.8	161.8	160.7	160.7
17.5°	152.3	152.3	152.3	151.2
20°	142.9	141.8	141.8	141.8
22.5°	132.3	131.1	131.1	131.1
25°	121.7	120.5	120.5	120.5
27.5°	111.1	109.8	108.7	108.7
30°	100.4	99.2	98.1	98.1
32.5°	89.8	88.6	87.4	87.4
35°	80.3	80.3	79.1	78.0
37.5°	72.0	72.0	72.0	72.0
40°	66.1	67.3	67.3	67.3
42.5°	62.6	63.8	65.0	66.1
45°	60.2	62.6	63.8	63.8
47.5°	59.0	60.2	61.5	61.5
50°	54.4	53.1	53.1	53.1
52.5°	43.7	41.4	40.2	38.9
55°	31.9	30.7	28.4	28.4
57.5°	22.4	22.4	21.3	21.3
60°	17.7	17.7	16.5	17.7
62.5°	15.3	15.3	15.3	15.3
65°	14.2	14.2	14.2	14.2
67.5°	14.2	14.2	14.2	14.2
69°	13.0	13.0	13.0	13.0
70°	13.0	13.0	13.0	13.0
72.5°	11.8	11.8	11.8	11.8
75°	10.6	11.8	11.8	11.8
77.5°	10.6	10.6	10.6	10.6
80°	9.4	9.4	10.6	10.6
82.5°	9.4	9.4	9.4	9.4
85°	8.3	8.3	9.4	9.4
87.5°	7.1	7.1	8.3	8.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)