

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: P163818

Luminaire Tested: **LDRL-SL4-E04-E-7050-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P163818  
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-7050-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) 5000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8101.1 lumens  
Efficiency: N/A  
Efficacy: 83.3 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

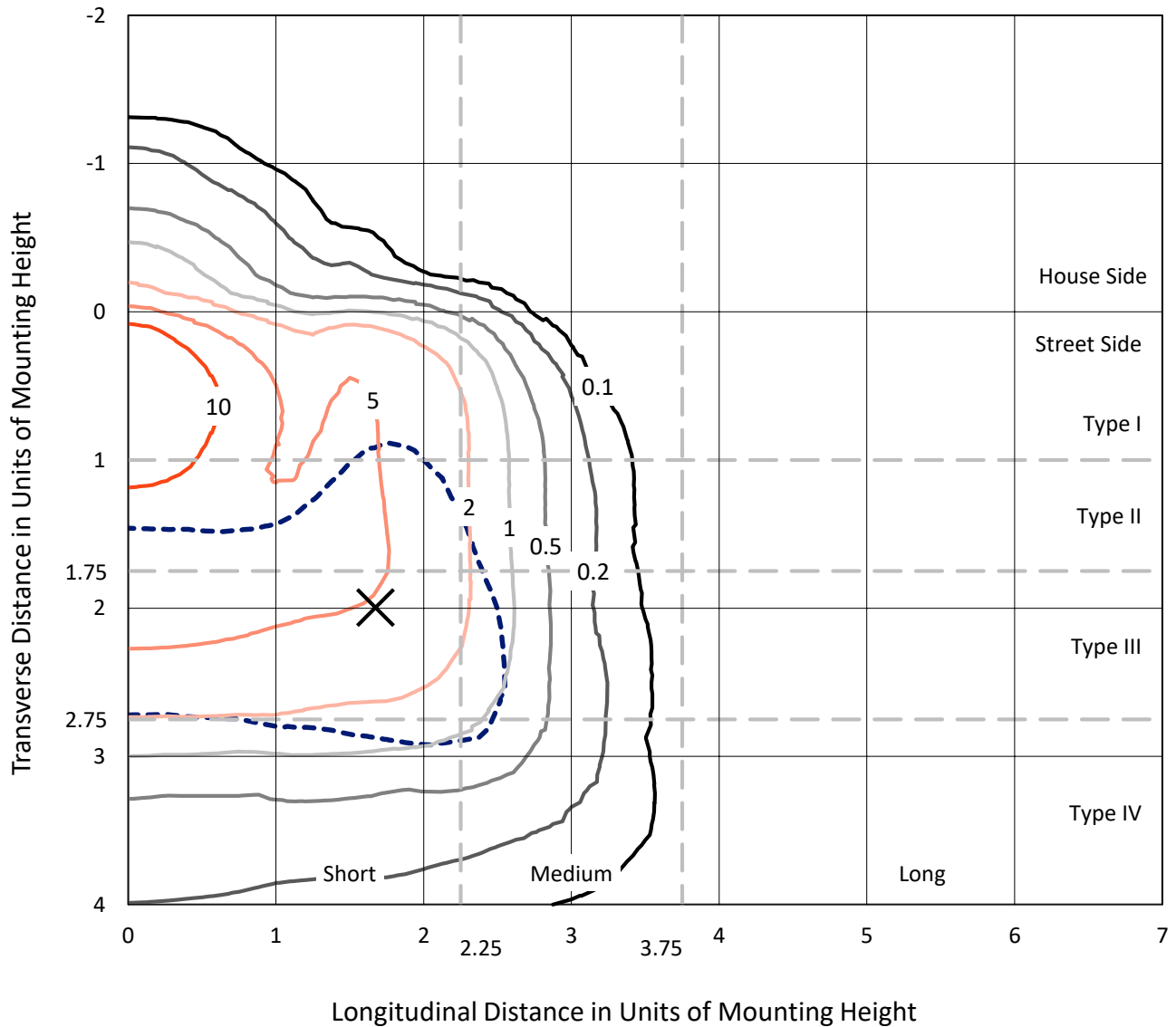
Input Watts (W): 97.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



REPORT NUMBER: P163818  
 CATALOG NUMBER: LDRL-SL4-E04-E-7050-HSS

### Iso-Footcandle Lines of Horizontal Illumination

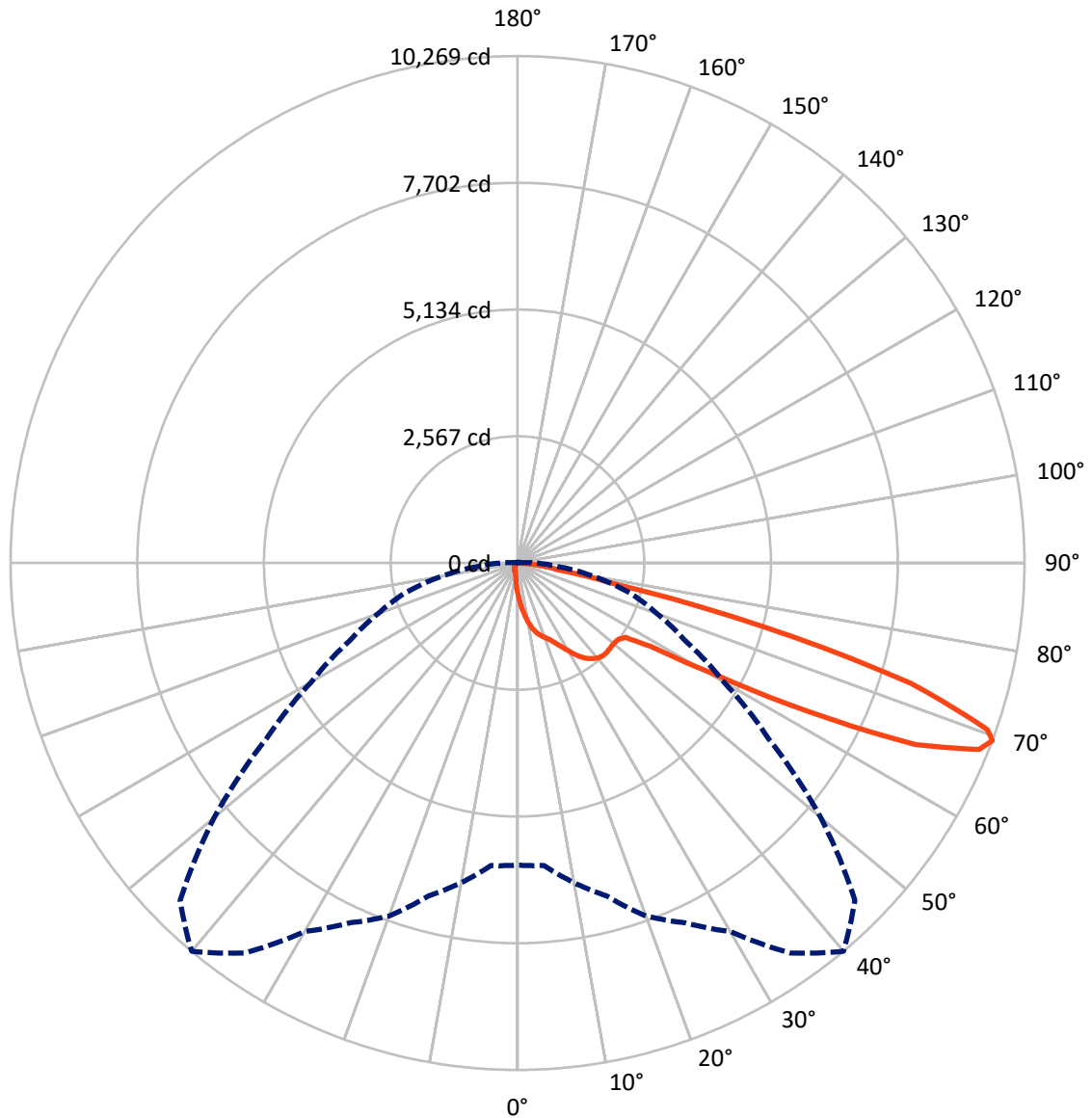
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 18.1 fc  
 Type IV - Short - Semi-Cutoff

REPORT NUMBER: P163818  
CATALOG NUMBER: LDRL-SL4-E04-E-7050-HSS

### Luminous Intensity Polar Plot



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

REPORT NUMBER: P163818

CATALOG NUMBER: LDRL-SL4-E04-E-7050-HSS

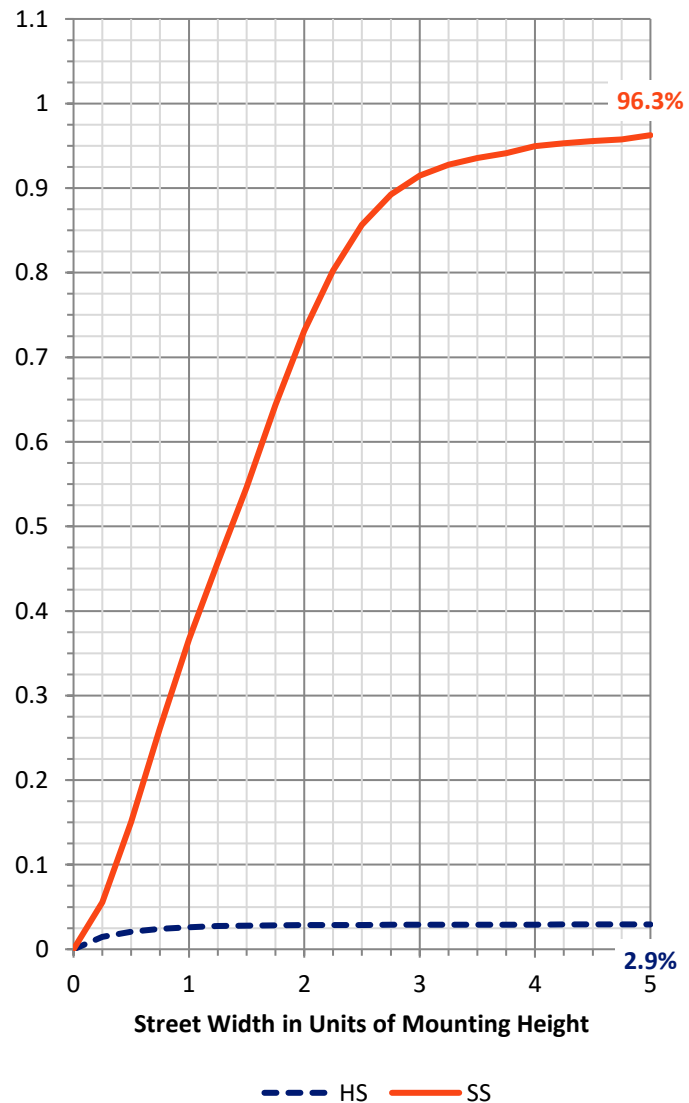
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	241.2	0.0	241.2
	% Fixture	3.0	0.0	3.0
<b>Street Side</b>	Lumens	7859.8	0.0	7859.8
	% Fixture	97.0	0.0	97.0
<b>Total</b>	Lumens	8101.1	0.0	8101.1
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	62.9	0.8
10°-20°	216.8	2.7
20°-30°	414.9	5.1
30°-40°	690.1	8.5
40°-50°	933.8	11.5
50°-60°	1460.3	18.0
60°-70°	3002.4	37.1
70°-80°	1208.1	14.9
80°-90°	111.7	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°	8101.1	100.0
0°-180°	8101.1	100.0



REPORT NUMBER: P163818

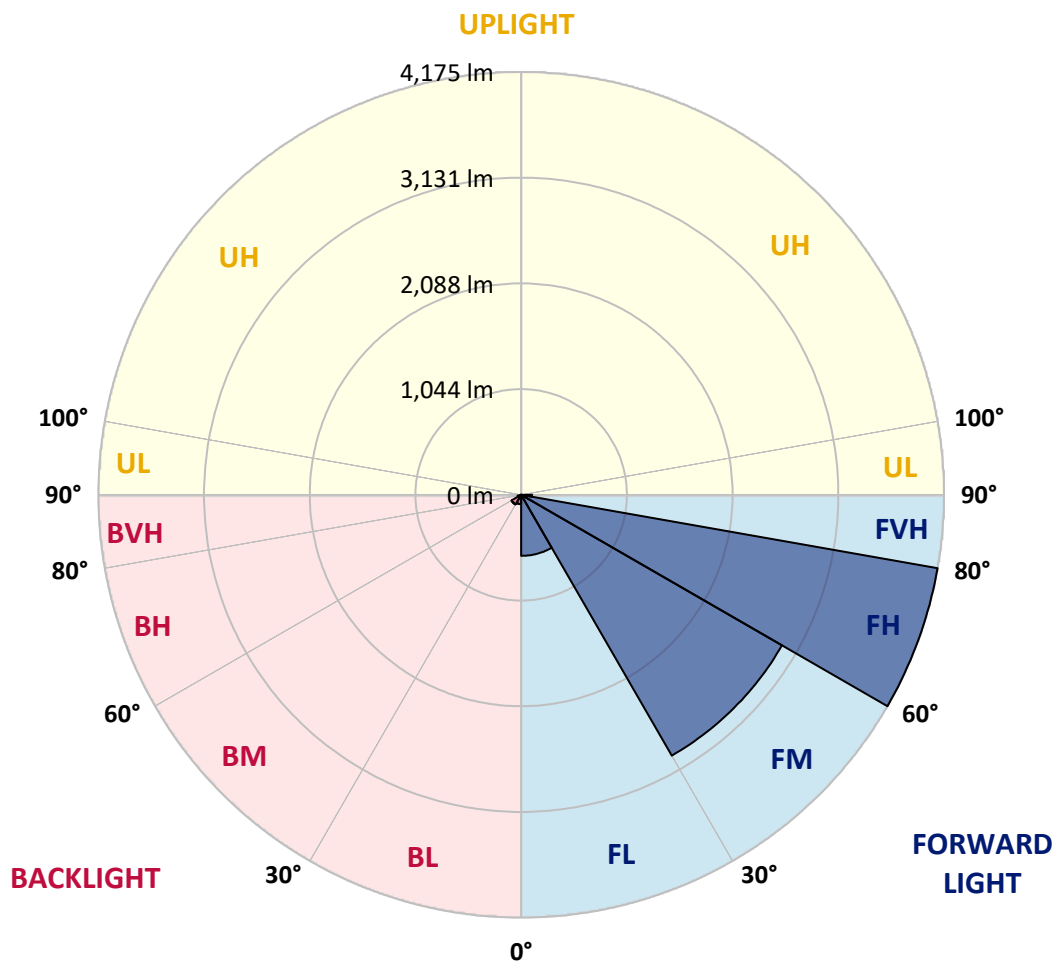
CATALOG NUMBER: LDRL-SL4-E04-E-7050-HSS

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	602.9	7.4			
FM (30°-60°)	2974.0	36.7			
FH (60°-80°)	4175.3	51.5			G2/5000
FVH (80°-90°)	107.6	1.3			G2/225
BL (0°-30°)	91.8	1.1	B0/110		
BM (30°-60°)	110.1	1.4	B0/220		
BH (60°-80°)	35.2	0.4	B0/110		G0/110
BVH (80°-90°)	4.2	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: P163818

CATALOG NUMBER: LDRL-SL4-E04-E-7050-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8
2.5°	816.1	806.8	796.3	796.3	783.0	783.0	775.0	753.8	751.1	739.2	727.2
5°	1041.8	1033.8	1020.5	1008.6	997.9	979.4	966.1	940.9	913.1	886.5	862.6
7.5°	1262.0	1258.1	1234.2	1230.2	1212.9	1182.4	1155.9	1118.7	1070.9	1033.8	990.0
10°	1466.4	1457.2	1451.8	1429.2	1404.0	1370.9	1329.8	1284.6	1228.9	1170.5	1108.1
12.5°	1628.3	1623.1	1599.2	1589.8	1563.3	1530.1	1478.3	1420.0	1364.2	1288.6	1215.6
15°	1749.1	1739.8	1723.9	1709.2	1677.4	1648.3	1600.5	1536.8	1469.1	1386.8	1299.2
17.5°	1849.9	1832.7	1828.7	1806.2	1772.9	1738.5	1685.4	1627.0	1547.4	1465.1	1369.6
20°	1985.3	1961.4	1953.5	1920.3	1881.8	1834.0	1772.9	1700.0	1616.4	1526.1	1427.9
22.5°	2144.6	2127.3	2110.1	2080.9	2031.8	1964.0	1875.1	1795.5	1689.4	1589.8	1483.7
25°	2370.1	2355.6	2327.7	2287.9	2226.8	2145.9	2038.4	1921.6	1796.8	1669.4	1544.7
27.5°	2589.2	2575.9	2556.0	2525.5	2456.4	2367.5	2234.8	2086.2	1928.3	1774.3	1636.3
30°	2794.9	2782.9	2763.0	2732.5	2671.4	2583.8	2433.8	2274.6	2078.2	1899.0	1733.1
32.5°	3016.4	3012.5	2989.9	2946.2	2893.0	2774.9	2611.7	2440.5	2241.4	2034.4	1840.7
35°	3267.3	3236.7	3215.5	3171.7	3081.5	2955.4	2764.3	2577.2	2367.5	2155.1	1938.8
37.5°	3479.6	3450.4	3423.9	3368.2	3258.0	3097.4	2881.1	2675.4	2459.1	2242.7	2022.5
40°	3634.9	3620.3	3588.4	3515.4	3392.1	3201.0	2967.3	2743.1	2525.5	2307.8	2090.1
42.5°	3750.4	3727.8	3691.9	3616.3	3470.3	3252.7	3001.9	2771.0	2556.0	2347.6	2134.0
45°	3792.8	3774.3	3741.0	3658.8	3500.8	3267.3	3000.5	2763.0	2557.3	2359.5	2163.1
47.5°	3767.6	3749.0	3719.8	3642.8	3487.6	3250.0	2976.6	2740.4	2544.0	2363.6	2189.7
50°	3684.0	3673.4	3650.8	3585.8	3446.4	3216.9	2955.4	2728.5	2541.4	2383.4	2226.8
52.5°	3676.0	3669.4	3641.5	3576.5	3434.5	3206.2	2952.7	2735.1	2564.0	2408.6	2253.4
55°	4492.2	4398.0	4186.9	4007.8	3713.2	3362.8	3086.8	2842.6	2659.5	2508.2	2399.4
57.5°	6384.6	6243.9	5966.6	5625.5	4948.7	4283.8	3751.7	3366.8	3177.1	3108.0	3149.2
60°	7271.1	7245.9	7202.1	7040.2	6693.8	6121.8	5484.8	4796.1	4520.0	4496.1	4579.8
62.5°	7691.8	7675.8	7689.1	7669.2	7561.7	7394.5	7211.4	6914.1	6640.7	6464.2	6090.0
65°	7885.5	7896.2	7971.8	8031.5	8044.7	8088.6	8222.6	8592.9	8863.6	8408.4	7369.3
67.5°	7393.2	7455.5	7629.4	7847.1	8101.8	8348.6	8746.8	9527.1	10083.2	9548.4	8072.7
69°	6120.5	6151.1	6575.7	6985.7	7608.2	8043.4	8620.8	9643.9	10268.9	9665.2	8016.9
70°	4818.7	4846.5	5301.7	5859.1	6911.4	7471.4	8226.6	9446.2	10095.2	9509.9	7730.3
72.5°	2173.8	2134.0	2294.5	2593.1	3737.1	4626.2	5946.7	7653.3	8328.8	7618.8	5783.5
75°	1518.1	1500.9	1518.1	1519.5	1697.3	2189.7	2763.0	4148.4	5130.5	4427.1	2763.0
77.5°	1175.8	1163.8	1151.9	1138.6	1159.9	1299.2	1355.0	1471.8	1911.0	1807.5	1053.7
80°	930.3	919.6	948.9	939.6	939.6	955.5	944.9	901.1	818.8	759.1	679.4
82.5°	432.6	435.3	435.3	472.4	569.3	664.8	695.4	651.6	578.6	492.4	396.8
85°	41.1	46.5	78.3	120.8	240.2	270.7	272.0	225.6	225.6	177.8	143.3
87.5°	0.0	1.3	1.3	1.3	11.9	33.2	27.8	8.0	3.9	3.9	6.6
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: P163818

CATALOG NUMBER: LDRL-SL4-E04-E-7050-HSS

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8
2.5°	706.0	702.0	686.1	670.2	655.6	639.6	625.0	610.5	594.6	582.6	568.0
5°	825.5	796.3	763.1	731.2	699.4	666.2	631.7	601.1	569.3	540.1	512.2
7.5°	946.2	889.2	844.0	787.0	735.2	683.5	635.7	586.6	541.5	499.0	459.2
10°	1048.4	979.4	909.0	836.1	761.8	692.7	626.4	568.0	508.3	456.5	407.4
12.5°	1132.0	1044.4	958.1	866.6	783.0	695.4	613.1	542.8	472.4	414.1	363.7
15°	1207.7	1106.8	1003.3	897.1	790.9	691.4	599.8	512.2	440.6	374.2	317.2
17.5°	1268.7	1153.3	1036.4	917.0	802.9	686.1	582.6	491.1	407.4	338.4	282.6
20°	1321.8	1201.0	1074.9	940.9	810.9	684.8	568.0	464.5	378.2	305.2	250.8
22.5°	1370.9	1250.1	1114.8	971.4	822.8	683.5	554.8	444.6	353.0	280.0	225.6
25°	1426.6	1299.2	1157.2	1003.3	844.0	688.7	546.8	428.7	330.4	256.1	205.7
27.5°	1489.0	1355.0	1207.7	1043.1	871.9	699.4	544.1	411.4	310.5	233.5	189.8
30°	1576.6	1421.3	1258.1	1082.9	897.1	711.3	541.5	400.8	290.6	216.3	173.9
32.5°	1653.5	1486.3	1313.8	1124.0	925.0	723.3	540.1	386.1	272.0	199.1	161.9
35°	1734.5	1546.1	1361.6	1163.8	948.9	736.5	538.8	375.6	254.8	181.8	150.0
37.5°	1804.8	1596.5	1398.7	1198.3	975.4	748.5	540.1	366.3	238.9	167.2	139.3
40°	1864.6	1648.3	1439.9	1230.2	1003.3	767.0	541.5	357.0	223.0	153.9	130.0
42.5°	1917.7	1697.3	1483.7	1266.0	1035.1	788.3	549.4	349.0	209.7	142.0	120.8
45°	1958.8	1742.5	1531.4	1316.5	1086.9	822.8	564.0	343.7	196.4	131.3	112.8
47.5°	2001.2	1808.8	1612.4	1396.1	1162.5	877.2	589.2	342.4	185.8	123.4	106.1
50°	2059.6	1875.1	1684.0	1477.0	1231.6	932.9	619.8	343.7	172.5	115.4	99.5
52.5°	2102.1	1942.9	1777.0	1617.7	1396.1	1102.8	737.9	367.6	165.9	108.8	91.5
55°	2352.9	2325.1	2329.0	2355.6	2184.4	1876.5	1234.2	530.9	195.0	123.4	90.2
57.5°	3317.7	3415.9	3473.0	3471.7	3189.0	2644.9	1657.5	682.2	217.6	143.3	107.5
60°	4586.4	4512.1	4407.2	4148.4	3772.9	3019.1	1854.0	733.9	188.5	114.1	98.2
62.5°	5707.8	5272.5	4886.3	4466.9	3974.6	3149.2	1893.8	729.9	164.6	86.3	69.0
65°	6407.2	5624.2	5000.4	4474.9	3895.0	3040.3	1791.6	670.2	139.3	70.3	57.1
67.5°	6574.4	5434.4	4551.9	3881.7	3254.0	2366.2	1315.1	504.3	108.8	58.4	50.4
69°	6209.4	4830.6	3771.6	3011.2	2367.5	1569.9	813.5	318.5	83.6	53.1	46.5
70°	5711.8	4201.5	3072.2	2416.6	1753.1	1102.8	569.3	224.3	67.6	49.1	42.4
72.5°	3674.7	2206.9	1510.2	1051.1	723.3	439.3	223.0	100.9	51.7	41.1	34.5
75°	1425.3	816.1	591.9	449.8	351.7	244.2	135.4	65.0	43.8	34.5	26.5
77.5°	702.0	537.4	439.3	301.3	175.2	108.8	73.0	50.4	35.8	25.2	17.2
80°	554.8	368.9	220.3	136.7	103.5	78.3	55.7	41.1	26.5	15.9	11.9
82.5°	284.0	155.2	114.1	92.9	77.0	61.1	45.1	29.2	17.2	10.6	9.3
85°	88.9	65.0	58.4	57.1	53.1	43.8	31.9	18.6	10.6	6.6	6.6
87.5°	6.6	9.3	11.9	9.3	10.6	9.3	11.9	8.0	5.3	5.3	3.9
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: P163818

CATALOG NUMBER: LDRL-SL4-E04-E-7050-HSS

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8
2.5°	557.4	541.5	526.8	517.6	500.3	493.7	487.0	484.4	472.4	475.1	464.5
5°	487.0	459.2	437.9	416.7	396.8	382.2	370.2	355.7	343.7	338.4	327.8
7.5°	423.3	387.5	359.6	337.1	313.2	294.6	278.7	268.1	257.4	246.8	241.5
10°	367.6	329.1	297.2	274.7	252.2	236.3	224.3	216.3	209.7	205.7	204.4
12.5°	315.9	278.7	249.5	229.6	212.4	204.4	199.1	195.0	193.7	192.4	192.4
15°	276.1	238.9	216.3	201.7	193.7	189.8	188.5	185.8	183.1	181.8	181.8
17.5°	238.9	211.0	195.0	187.1	183.1	180.5	177.8	175.2	172.5	171.2	171.2
20°	213.7	191.1	183.1	177.8	173.9	171.2	167.2	164.6	163.2	161.9	160.6
22.5°	193.7	179.1	173.9	169.8	164.6	160.6	157.9	155.2	152.6	151.3	150.0
25°	179.1	169.8	165.9	160.6	155.2	151.3	147.3	143.3	140.7	139.3	136.7
27.5°	168.5	161.9	156.6	150.0	144.6	140.7	136.7	132.7	130.0	127.4	126.1
30°	159.3	152.6	146.0	140.7	134.1	130.0	124.8	120.8	119.4	116.8	114.1
32.5°	150.0	143.3	136.7	130.0	123.4	118.1	115.4	110.2	107.5	106.1	103.5
35°	139.3	132.7	124.8	119.4	112.8	107.5	103.5	99.5	96.9	94.2	92.9
37.5°	130.0	122.1	114.1	107.5	102.2	96.9	92.9	88.9	86.3	83.6	82.3
40°	119.4	111.5	103.5	96.9	91.5	87.6	83.6	79.6	77.0	75.6	75.6
42.5°	110.2	100.9	92.9	87.6	83.6	78.3	74.3	70.3	69.0	67.6	69.0
45°	100.9	91.5	85.0	79.6	75.6	70.3	66.3	63.7	62.4	63.7	65.0
47.5°	92.9	83.6	77.0	73.0	69.0	65.0	61.1	58.4	58.4	61.1	63.7
50°	85.0	75.6	70.3	67.6	63.7	59.7	54.4	53.1	54.4	57.1	59.7
52.5°	77.0	66.3	62.4	61.1	57.1	53.1	49.1	47.8	49.1	51.7	50.4
55°	69.0	58.4	57.1	55.7	51.7	46.5	42.4	42.4	42.4	41.1	38.5
57.5°	66.3	51.7	50.4	49.1	45.1	39.8	37.2	34.5	33.2	29.2	27.8
60°	69.0	46.5	46.5	43.8	39.8	34.5	30.5	26.5	23.9	21.3	21.3
62.5°	55.7	42.4	41.1	38.5	33.2	27.8	23.9	19.9	18.6	17.2	17.2
65°	45.1	38.5	35.8	31.9	27.8	22.6	18.6	15.9	14.6	14.6	15.9
67.5°	41.1	34.5	30.5	26.5	22.6	17.2	14.6	13.3	13.3	14.6	14.6
69°	38.5	31.9	27.8	23.9	19.9	15.9	13.3	13.3	13.3	13.3	14.6
70°	35.8	30.5	26.5	22.6	17.2	13.3	11.9	11.9	13.3	13.3	14.6
72.5°	27.8	23.9	22.6	18.6	13.3	11.9	10.6	11.9	11.9	13.3	13.3
75°	21.3	17.2	17.2	14.6	10.6	9.3	9.3	10.6	10.6	11.9	11.9
77.5°	14.6	11.9	11.9	10.6	9.3	8.0	8.0	9.3	10.6	10.6	11.9
80°	10.6	9.3	8.0	9.3	8.0	6.6	8.0	9.3	9.3	10.6	10.6
82.5°	8.0	8.0	8.0	8.0	6.6	6.6	8.0	8.0	9.3	10.6	10.6
85°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	8.0	8.0	9.3	9.3
87.5°	3.9	3.9	3.9	5.3	5.3	6.6	6.6	6.6	6.6	8.0	8.0
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: P163818

CATALOG NUMBER: LDRL-SL4-E04-E-7050-HSS

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	611.8	611.8	611.8	611.8
2.5°	461.8	460.5	455.2	456.5
5°	323.8	315.9	321.1	319.8
7.5°	237.6	236.3	234.9	237.6
10°	203.0	203.0	201.7	203.0
12.5°	191.1	191.1	191.1	191.1
15°	181.8	181.8	180.5	180.5
17.5°	171.2	171.2	171.2	169.8
20°	160.6	159.3	159.3	159.3
22.5°	148.7	147.3	147.3	147.3
25°	136.7	135.4	135.4	135.4
27.5°	124.8	123.4	122.1	122.1
30°	112.8	111.5	110.2	110.2
32.5°	100.9	99.5	98.2	98.2
35°	90.2	90.2	88.9	87.6
37.5°	80.9	80.9	80.9	80.9
40°	74.3	75.6	75.6	75.6
42.5°	70.3	71.7	73.0	74.3
45°	67.6	70.3	71.7	71.7
47.5°	66.3	67.6	69.0	69.0
50°	61.1	59.7	59.7	59.7
52.5°	49.1	46.5	45.1	43.8
55°	35.8	34.5	31.9	31.9
57.5°	25.2	25.2	23.9	23.9
60°	19.9	19.9	18.6	19.9
62.5°	17.2	17.2	17.2	17.2
65°	15.9	15.9	15.9	15.9
67.5°	15.9	15.9	15.9	15.9
69°	14.6	14.6	14.6	14.6
70°	14.6	14.6	14.6	14.6
72.5°	13.3	13.3	13.3	13.3
75°	11.9	13.3	13.3	13.3
77.5°	11.9	11.9	11.9	11.9
80°	10.6	10.6	11.9	11.9
82.5°	10.6	10.6	10.6	10.6
85°	9.3	9.3	10.6	10.6
87.5°	8.0	8.0	9.3	9.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)