

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: P163542

Luminaire Tested: **LDRL-SL3-F04-E-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P163542  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33727)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: LDRL-SL3-F04-E-HSS  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 3 W/ SPILL LIGHT CONTROL AND HOUSE SIDE SHIELD  
Light Source: (28) 4000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5553.4 lumens  
Efficiency: N/A  
Efficacy: 54.3 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.1')  
IES Classification: Type III - Short - Non-Cutoff  
BUG Rating: B0 - U0 - G2

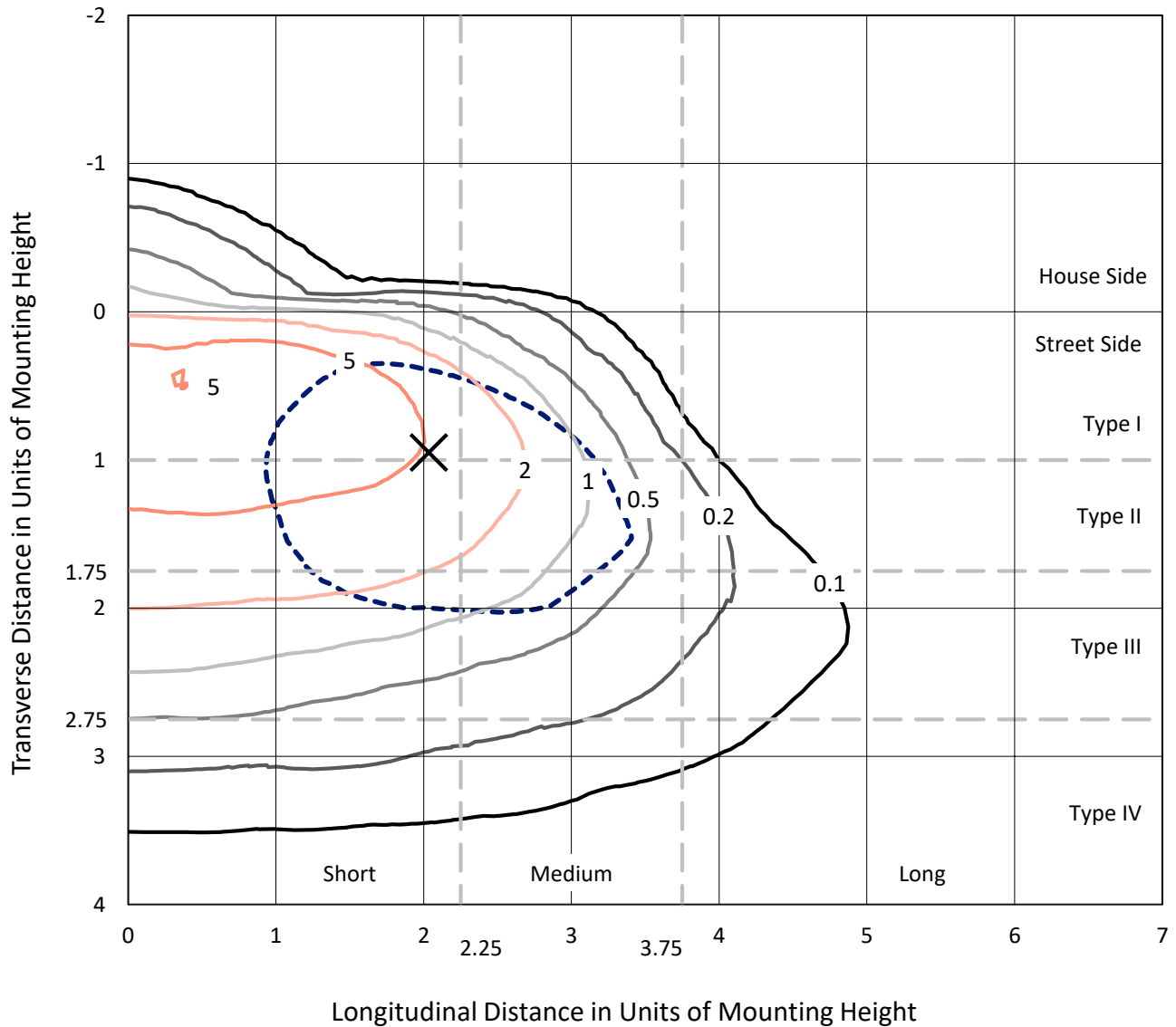
Input Watts (W): 102.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



REPORT NUMBER: P163542  
 CATALOG NUMBER: LDRL-SL3-F04-E-HSS

### Iso-Footcandle Lines of Horizontal Illumination

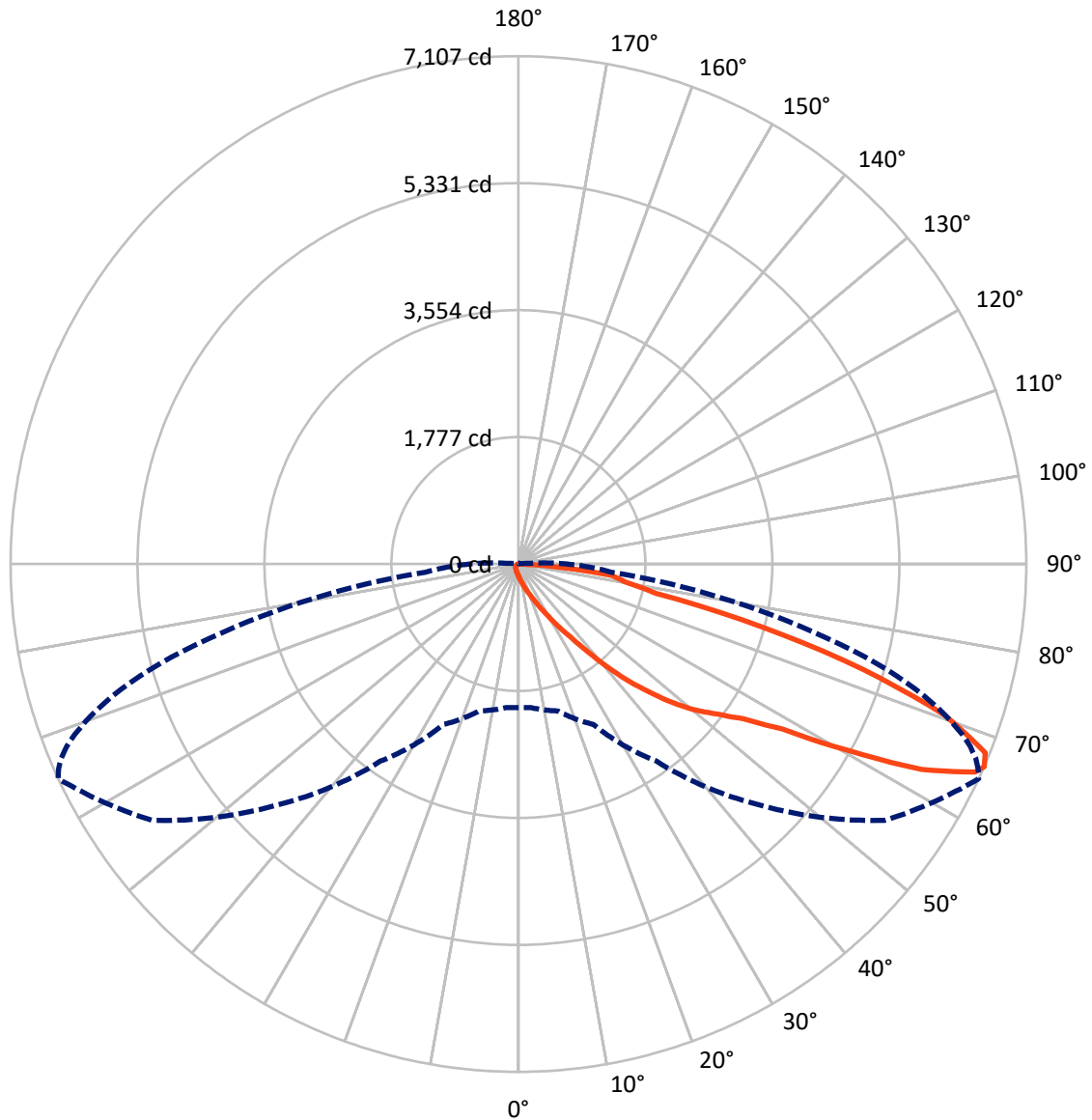
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 9.2 fc  
 Type III - Short - Non-Cutoff

REPORT NUMBER: P163542  
CATALOG NUMBER: LDRL-SL3-F04-E-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 65-Deg Lateral    - - - Horizontal Cone Through 66-Deg Vertical

REPORT NUMBER: P163542

CATALOG NUMBER: LDRL-SL3-F04-E-HSS

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	120.3	0.0	120.3
	% Fixture	2.2	0.0	2.2
<b>Street Side</b>	Lumens	5433.1	0.0	5433.1
	% Fixture	97.8	0.0	97.8
<b>Total</b>	Lumens	5553.4	0.0	5553.4
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	18.8	0.3
10°-20°	79.6	1.4
20°-30°	171.6	3.1
30°-40°	366.5	6.6
40°-50°	810.5	14.6
50°-60°	1373.5	24.7
60°-70°	1832.8	33.0
70°-80°	807.3	14.5
80°-90°	93.0	1.7
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°	5553.4	100.0
0°-180°	5553.4	100.0



REPORT NUMBER: P163542

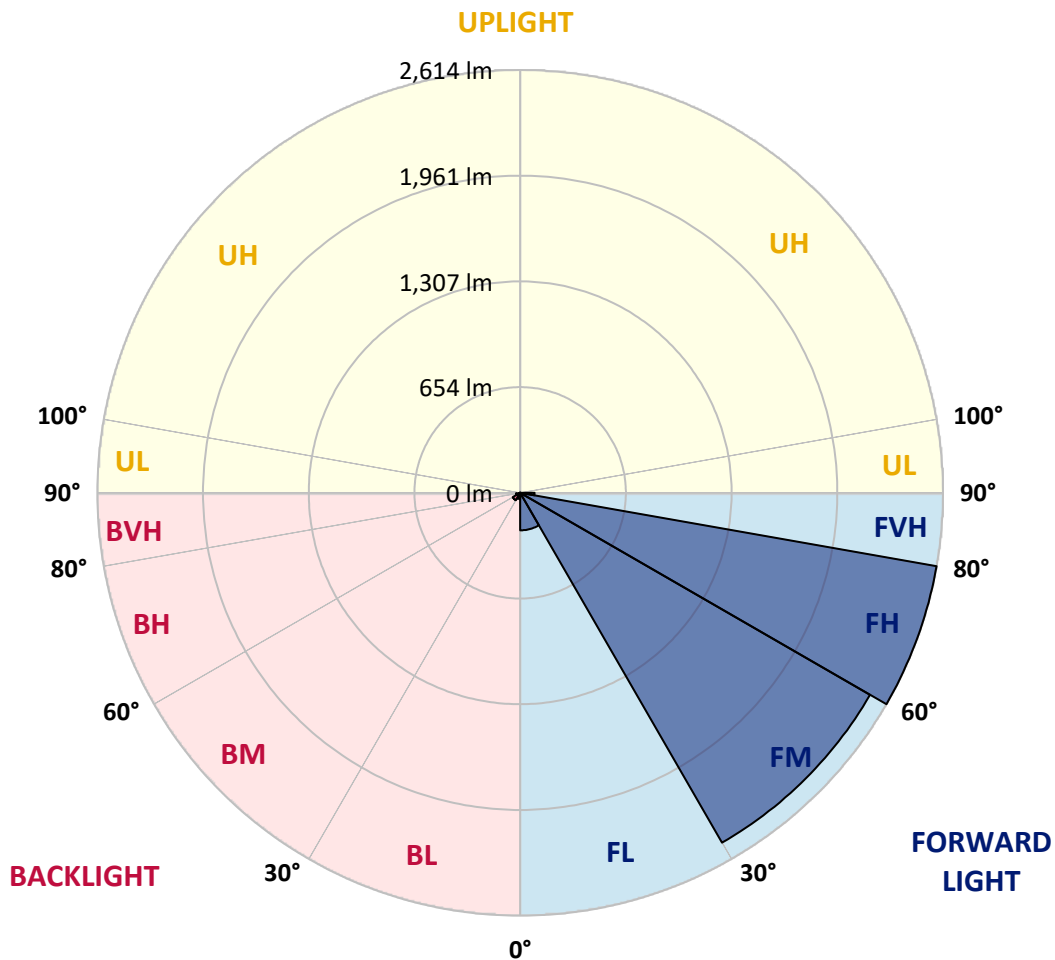
CATALOG NUMBER: LDRL-SL3-F04-E-HSS

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	232.0	4.2			
FM	(30°-60°)	2497.6	45.0			
FH	(60°-80°)	2614.3	47.1			G2/5000
FVH	(80°-90°)	89.3	1.6			G1/100
BL	(0°-30°)	38.0	0.7	B0/110		
BM	(30°-60°)	52.8	1.0	B0/220		
BH	(60°-80°)	25.8	0.5	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 III Short





REPORT NUMBER: P163542

CATALOG NUMBER: LDRL-SL3-F04-E-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	66°	67°	68°
0°	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6
2.5°	211.4	210.3	206.1	206.1	199.6	195.4	190.1	184.7	184.7	183.7	182.5
5°	279.8	273.3	272.2	260.5	250.9	237.0	224.2	207.1	205.0	202.9	201.8
7.5°	355.5	354.4	344.9	331.0	311.8	286.2	260.5	232.7	228.5	226.3	222.1
10°	453.8	448.4	435.6	412.1	383.3	349.1	307.5	263.7	258.4	254.1	252.0
12.5°	547.7	538.1	530.6	500.7	464.4	414.3	364.1	301.1	296.8	291.4	282.9
15°	635.3	626.7	613.9	588.3	547.7	484.7	426.0	349.1	338.5	331.0	324.6
17.5°	703.6	698.3	683.3	654.5	610.7	555.2	484.7	398.2	389.7	380.1	368.3
20°	768.7	761.3	737.8	698.3	651.3	608.6	554.1	462.3	450.5	438.8	426.0
22.5°	830.7	823.1	784.7	719.6	669.4	651.3	632.1	534.9	516.8	507.1	494.3
25°	917.1	901.1	841.3	737.8	670.5	684.4	717.5	628.9	611.7	597.9	577.6
27.5°	1033.5	1012.2	918.2	764.4	674.8	720.7	815.7	743.1	724.9	709.0	686.5
30°	1164.8	1150.9	1038.8	828.5	705.7	774.1	925.6	888.3	866.9	847.7	821.0
32.5°	1297.2	1278.0	1167.0	950.2	789.0	877.6	1063.4	1057.0	1029.3	1011.1	982.2
35°	1413.6	1404.0	1321.8	1149.9	979.1	1059.1	1247.0	1254.5	1230.0	1210.7	1178.7
37.5°	1492.6	1492.6	1476.6	1364.5	1281.2	1341.0	1517.2	1518.2	1493.7	1449.9	1433.9
40°	1533.2	1544.9	1602.6	1623.9	1619.7	1696.6	1871.6	1852.4	1832.1	1809.7	1756.3
42.5°	1616.4	1627.1	1749.9	1897.3	1993.3	2094.8	2215.4	2209.0	2184.5	2143.9	2094.8
45°	1757.4	1771.2	1917.5	2151.3	2348.8	2493.0	2569.9	2540.0	2515.4	2477.0	2451.3
47.5°	1936.7	1963.4	2128.9	2418.3	2656.3	2894.4	2974.5	2895.5	2874.1	2844.3	2802.6
50°	2127.9	2153.5	2329.6	2660.6	2929.7	3213.7	3347.1	3213.7	3182.7	3173.1	3126.2
52.5°	2293.4	2314.7	2484.4	2847.5	3139.0	3472.0	3666.4	3490.2	3467.8	3435.8	3401.6
55°	2391.6	2408.7	2567.7	2937.2	3281.0	3704.8	3974.9	3820.1	3787.0	3774.2	3725.1
57.5°	2424.7	2441.8	2584.8	2948.9	3357.8	3917.3	4349.7	4355.0	4315.5	4269.6	4254.7
60°	2424.7	2443.9	2564.5	2920.0	3432.5	4143.6	4849.3	5294.6	5209.1	5200.6	5146.2
62.5°	2324.3	2342.4	2464.2	2831.5	3532.9	4449.0	5545.5	6331.2	6306.7	6251.2	6161.5
65°	2106.5	2117.2	2236.8	2605.1	3494.5	4729.8	6148.7	7021.0	6981.5	6872.6	6757.3
66°	2008.3	2016.9	2128.9	2475.9	3368.5	4768.2	6255.5	7107.4	7042.3	6950.5	6820.3
67.5°	1866.3	1881.2	1960.3	2235.7	3066.3	4634.8	6188.2	7046.6	6990.0	6879.0	6748.7
70°	1245.9	1235.3	1513.9	1715.8	2336.0	3776.3	5551.9	6327.0	6328.1	6275.8	6223.5
72.5°	591.5	597.9	679.0	1055.9	1528.9	2522.9	4419.1	5050.1	5122.7	5028.7	4963.6
75°	424.9	434.6	483.6	646.0	911.8	1513.9	2864.6	3531.9	3534.0	3367.4	3219.0
77.5°	123.8	129.2	181.5	398.2	683.3	1021.7	1645.3	1963.4	1917.5	1797.9	1685.9
80°	51.2	51.2	53.4	127.1	274.4	694.0	1150.9	1511.8	1506.5	1460.6	1394.3
82.5°	19.2	20.3	25.6	52.3	65.1	170.9	767.7	1312.2	1309.0	1243.8	1196.9
85°	2.1	2.1	6.4	22.4	24.6	32.0	153.7	578.7	575.5	578.7	507.1
87.5°	0.0	0.0	1.1	2.1	3.2	4.3	6.4	22.4	24.6	23.5	21.3
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: P163542

CATALOG NUMBER: LDRL-SL3-F04-E-HSS

**CANDELA DISTRIBUTION (continued):**

	69°	70°	71°	72°	73°	74°	75°	76°	77°	78°	79°
0°	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6
2.5°	182.5	180.4	180.4	179.4	179.4	179.4	178.3	177.3	177.3	176.1	175.1
5°	199.6	197.5	196.5	194.3	193.2	192.2	190.1	188.9	186.8	185.8	184.7
7.5°	219.9	215.7	214.6	211.4	208.2	206.1	203.9	200.7	198.6	194.3	193.2
10°	245.5	240.2	236.0	231.7	228.5	223.2	219.9	215.7	211.4	208.2	205.0
12.5°	278.6	271.2	264.8	260.5	253.0	246.6	240.2	237.0	228.5	224.2	218.9
15°	315.0	306.4	299.0	290.4	285.0	274.4	265.8	256.2	252.0	244.5	236.0
17.5°	361.9	348.0	336.3	327.8	317.1	306.4	296.8	287.2	274.4	265.8	255.2
20°	412.1	400.3	384.4	369.4	356.6	343.8	329.9	317.1	305.4	291.4	278.6
22.5°	476.2	459.1	439.9	424.9	407.9	393.9	374.7	357.7	338.5	320.3	305.4
25°	557.3	534.9	516.8	495.4	475.1	453.8	430.3	408.9	384.4	367.3	341.6
27.5°	657.7	636.3	611.7	584.0	563.7	531.7	500.7	474.0	445.2	418.5	389.7
30°	785.8	754.9	729.2	702.6	661.9	631.0	594.7	558.4	518.9	492.2	448.4
32.5°	939.6	906.4	868.0	829.6	792.2	748.5	703.6	658.8	615.0	565.8	521.0
35°	1127.5	1088.0	1044.2	1002.5	944.9	897.9	841.3	779.4	730.3	673.7	617.1
37.5°	1376.2	1311.1	1272.6	1228.9	1150.9	1086.9	1023.9	962.0	875.5	815.7	735.6
40°	1688.0	1649.5	1586.5	1516.1	1445.6	1361.3	1275.9	1193.6	1093.3	1010.0	917.1
42.5°	2054.2	1997.6	1933.6	1832.1	1760.6	1661.3	1564.1	1455.2	1332.5	1225.7	1116.8
45°	2398.0	2330.7	2281.6	2180.2	2105.4	1988.0	1870.6	1755.3	1613.3	1475.5	1349.5
47.5°	2769.5	2714.0	2632.9	2550.7	2474.9	2342.4	2215.4	2075.6	1926.0	1762.7	1599.3
50°	3096.2	3052.5	2996.9	2897.7	2813.3	2702.2	2552.8	2400.1	2211.2	2048.9	1863.1
52.5°	3373.8	3339.7	3261.7	3191.3	3115.5	3010.9	2877.4	2731.1	2527.2	2348.8	2137.4
55°	3701.6	3677.0	3608.7	3564.9	3497.7	3397.3	3272.4	3136.8	2921.2	2726.8	2487.7
57.5°	4238.6	4219.4	4159.7	4141.5	4075.3	3987.7	3834.0	3688.8	3436.8	3195.5	2922.2
60°	5128.0	5089.6	5002.0	4957.2	4817.3	4699.9	4500.2	4300.6	3996.3	3688.8	3360.0
62.5°	6080.4	5972.5	5805.9	5662.9	5464.3	5260.4	4993.5	4688.1	4331.5	3966.4	3588.5
65°	6593.9	6410.3	6200.0	5972.5	5715.2	5415.2	5078.9	4712.7	4329.4	3944.0	3544.7
66°	6652.6	6445.5	6222.3	5969.3	5683.2	5363.9	5022.3	4637.9	4239.7	3863.9	3464.6
67.5°	6579.0	6362.2	6126.3	5845.5	5535.8	5204.9	4846.2	4446.8	4063.6	3682.4	3293.8
70°	6063.3	5847.6	5637.3	5341.5	5011.7	4678.5	4339.0	3892.7	3529.7	3179.5	2833.6
72.5°	4841.9	4695.6	4487.4	4234.3	3913.0	3522.2	3239.3	2840.0	2525.0	2185.5	1917.5
75°	3025.8	2819.7	2562.4	2239.9	1994.4	1677.3	1511.8	1208.6	1029.3	872.3	720.7
77.5°	1547.0	1392.2	1211.8	1030.3	856.3	683.3	528.5	373.7	252.0	175.1	130.2
80°	1278.0	1141.3	991.9	826.4	672.6	522.1	375.8	256.2	163.3	106.8	83.3
82.5°	1055.9	940.6	807.2	653.4	519.9	410.0	285.0	185.8	115.3	74.8	58.7
85°	449.5	407.9	315.0	249.8	187.9	138.8	97.1	65.1	45.9	37.4	34.1
87.5°	19.2	21.3	20.3	16.0	11.8	11.8	10.7	8.5	8.5	8.5	8.5
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: P163542

CATALOG NUMBER: LDRL-SL3-F04-E-HSS

**CANDELA DISTRIBUTION (continued):**

	80°	81°	82°	83°	84°	85°	95°	105°	115°	125°	135°
0°	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6
2.5°	175.1	174.0	173.0	173.0	171.9	170.9	164.4	159.1	152.7	148.4	144.1
5°	182.5	181.5	179.4	178.3	176.1	175.1	161.2	149.5	139.9	132.4	127.1
7.5°	190.1	188.9	185.8	182.5	181.5	179.4	156.9	142.0	129.2	120.7	115.3
10°	199.6	196.5	193.2	188.9	185.8	182.5	152.7	133.5	119.6	112.1	106.8
12.5°	213.5	208.2	202.9	197.5	193.2	187.9	150.5	126.0	112.1	103.6	98.2
15°	229.6	222.1	215.7	209.3	201.8	196.5	146.3	119.6	105.7	97.1	90.7
17.5°	244.5	236.0	226.3	216.7	209.3	201.8	142.0	113.2	99.3	90.7	84.3
20°	265.8	253.0	241.3	229.6	218.9	209.3	135.6	106.8	94.0	84.3	77.9
22.5°	289.3	274.4	259.4	243.4	229.6	216.7	130.2	101.4	88.6	79.0	71.5
25°	319.2	301.1	280.8	260.5	244.5	227.4	124.9	96.1	83.3	73.6	66.2
27.5°	360.9	335.2	312.8	287.2	262.6	243.4	120.7	91.8	77.9	68.4	60.8
30°	417.5	380.1	344.9	317.1	288.3	260.5	116.4	86.4	73.6	63.0	54.4
32.5°	480.5	436.7	396.1	354.4	318.2	286.2	112.1	82.2	68.4	57.7	50.2
35°	558.4	502.8	448.4	400.3	356.6	313.9	107.8	77.9	64.1	52.3	44.8
37.5°	670.5	601.1	529.6	467.6	411.0	354.4	104.6	73.6	58.7	47.0	39.5
40°	824.3	734.6	647.0	562.7	489.0	418.5	100.4	69.4	54.4	42.7	35.2
42.5°	990.8	881.9	766.6	671.6	570.1	481.5	96.1	65.1	50.2	38.4	31.0
45°	1197.9	1062.4	922.5	793.3	669.4	555.2	91.8	60.8	44.8	34.1	26.7
47.5°	1424.3	1251.3	1093.3	931.0	783.7	647.0	86.4	57.7	40.5	29.9	23.5
50°	1657.0	1474.5	1274.8	1090.1	915.0	738.8	81.2	52.3	36.3	26.7	19.2
52.5°	1908.0	1692.3	1488.3	1258.8	1054.9	859.5	75.8	48.0	33.1	23.5	16.0
55°	2227.1	1985.9	1746.7	1489.4	1243.8	999.3	70.5	42.7	28.8	20.3	12.8
57.5°	2628.6	2342.4	2048.9	1758.4	1460.6	1182.9	66.2	37.4	24.6	17.1	10.7
60°	3007.6	2673.4	2317.9	1983.7	1647.4	1323.9	59.8	33.1	21.3	13.9	10.7
62.5°	3204.1	2822.9	2439.6	2071.3	1712.5	1374.1	53.4	27.7	18.2	11.8	9.6
65°	3156.0	2767.4	2395.9	2024.3	1673.0	1342.0	47.0	24.6	16.0	10.7	9.6
66°	3086.6	2702.2	2328.6	1975.2	1640.0	1307.9	43.8	23.5	14.9	10.7	8.5
67.5°	2935.0	2563.5	2206.9	1878.0	1549.2	1242.8	39.5	21.3	13.9	9.6	8.5
70°	2506.9	2169.5	1884.4	1591.9	1323.9	1047.4	32.0	18.2	11.8	8.5	8.5
72.5°	1659.2	1429.6	1239.5	1066.6	891.5	691.9	26.7	14.9	9.6	8.5	7.5
75°	625.7	565.8	485.8	436.7	381.1	334.2	21.3	9.6	7.5	7.5	7.5
77.5°	111.0	102.5	90.7	83.3	76.9	70.5	17.1	6.4	6.4	7.5	7.5
80°	74.8	69.4	63.0	57.7	53.4	48.0	11.8	5.3	6.4	6.4	7.5
82.5°	53.4	50.2	47.0	42.7	39.5	35.2	7.5	5.3	6.4	6.4	6.4
85°	32.0	29.9	27.7	25.6	22.4	21.3	5.3	5.3	5.3	6.4	6.4
87.5°	8.5	7.5	8.5	8.5	6.4	7.5	4.3	4.3	4.3	5.3	5.3
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: P163542

CATALOG NUMBER: LDRL-SL3-F04-E-HSS

**CANDELA DISTRIBUTION (continued):**

	145°	155°	165°	175°	180°
0°	167.6	167.6	167.6	167.6	167.6
2.5°	142.0	142.0	139.9	143.0	143.0
5°	122.8	122.8	121.7	122.8	122.8
7.5°	112.1	111.0	111.0	111.0	112.1
10°	102.5	101.4	101.4	101.4	101.4
12.5°	94.0	92.9	91.8	92.9	92.9
15°	86.4	84.3	84.3	84.3	84.3
17.5°	80.0	77.9	76.9	76.9	76.9
20°	73.6	70.5	70.5	70.5	70.5
22.5°	67.2	64.1	64.1	64.1	64.1
25°	60.8	57.7	57.7	57.7	57.7
27.5°	55.5	52.3	52.3	52.3	52.3
30°	49.1	47.0	47.0	48.0	47.0
32.5°	44.8	41.6	41.6	42.7	42.7
35°	39.5	37.4	37.4	37.4	37.4
37.5°	34.1	32.0	32.0	32.0	32.0
40°	29.9	27.7	26.7	27.7	27.7
42.5°	25.6	23.5	22.4	22.4	22.4
45°	22.4	19.2	18.2	19.2	19.2
47.5°	18.2	16.0	16.0	17.1	17.1
50°	13.9	13.9	14.9	17.1	17.1
52.5°	12.8	12.8	14.9	17.1	17.1
55°	11.8	12.8	14.9	16.0	17.1
57.5°	10.7	12.8	14.9	16.0	16.0
60°	10.7	11.8	13.9	16.0	16.0
62.5°	9.6	10.7	12.8	14.9	14.9
65°	9.6	10.7	12.8	14.9	14.9
66°	9.6	10.7	12.8	14.9	14.9
67.5°	9.6	10.7	12.8	14.9	14.9
70°	9.6	10.7	12.8	13.9	13.9
72.5°	8.5	9.6	11.8	13.9	13.9
75°	8.5	9.6	11.8	13.9	13.9
77.5°	8.5	9.6	11.8	13.9	13.9
80°	8.5	9.6	11.8	12.8	13.9
82.5°	7.5	9.6	10.7	12.8	12.8
85°	7.5	8.5	10.7	11.8	12.8
87.5°	6.4	7.5	8.5	10.7	10.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)