

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: P163797

Luminaire Tested: **LDRL-SL4-E02-E-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P163797
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-E02-E-HSS
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL AND HOUSE SIDE SHIELD
Light Source: (42) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3947.5 lumens
Efficiency: N/A
Efficacy: 75.8 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 1' x H: 0.1')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B0 - U0 - G2

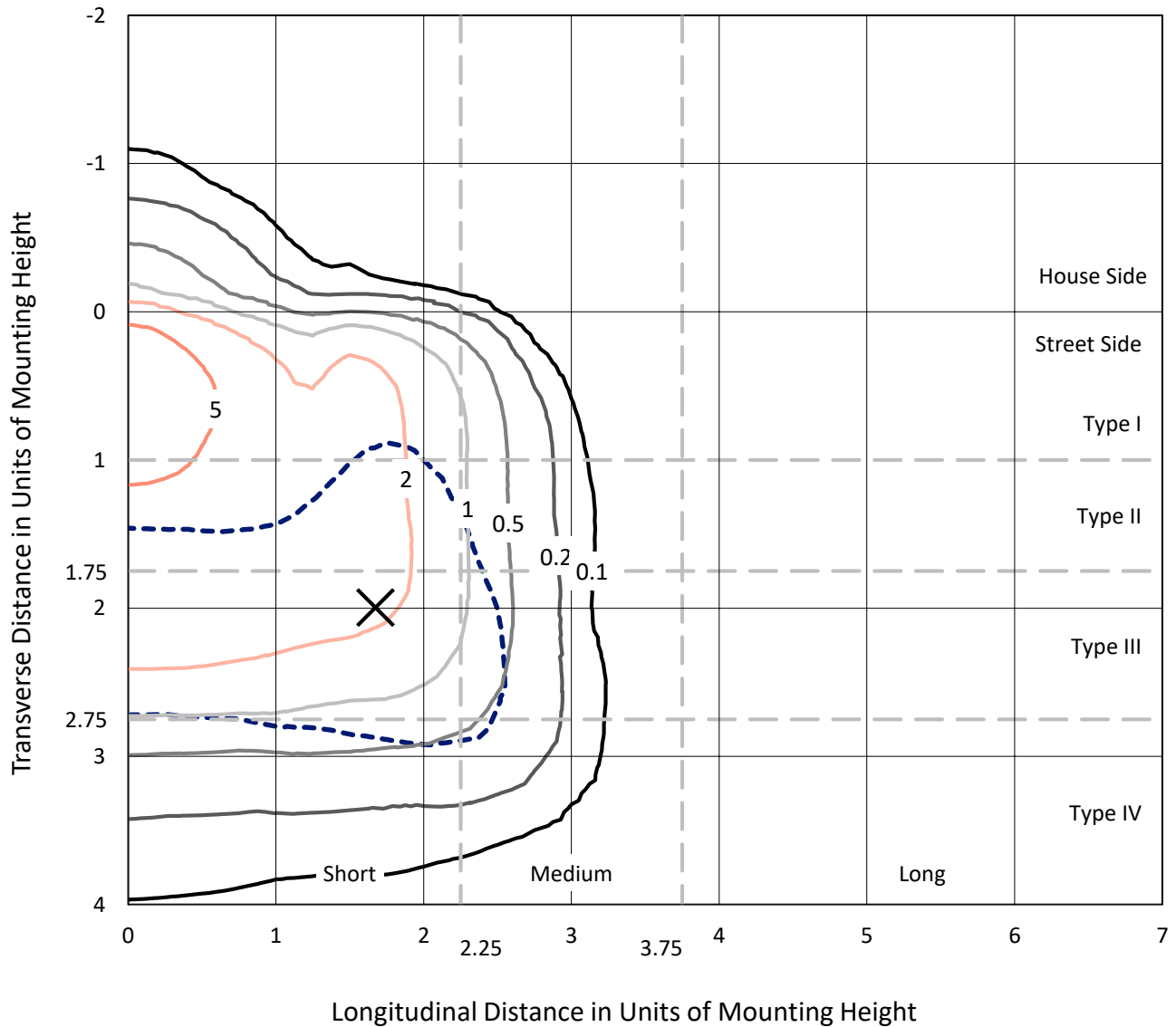
Input Watts (W): 52.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

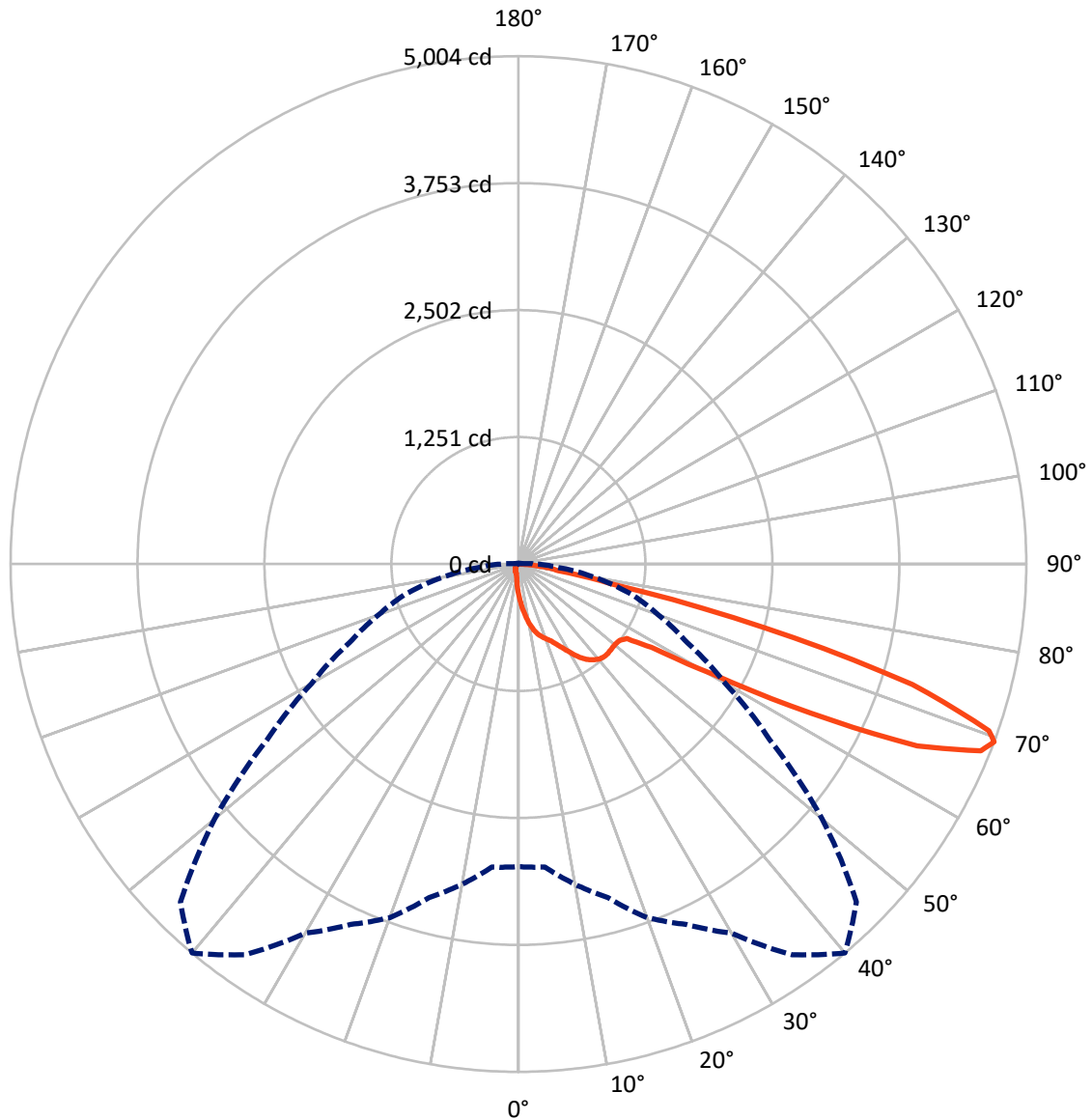
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 8.8 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



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

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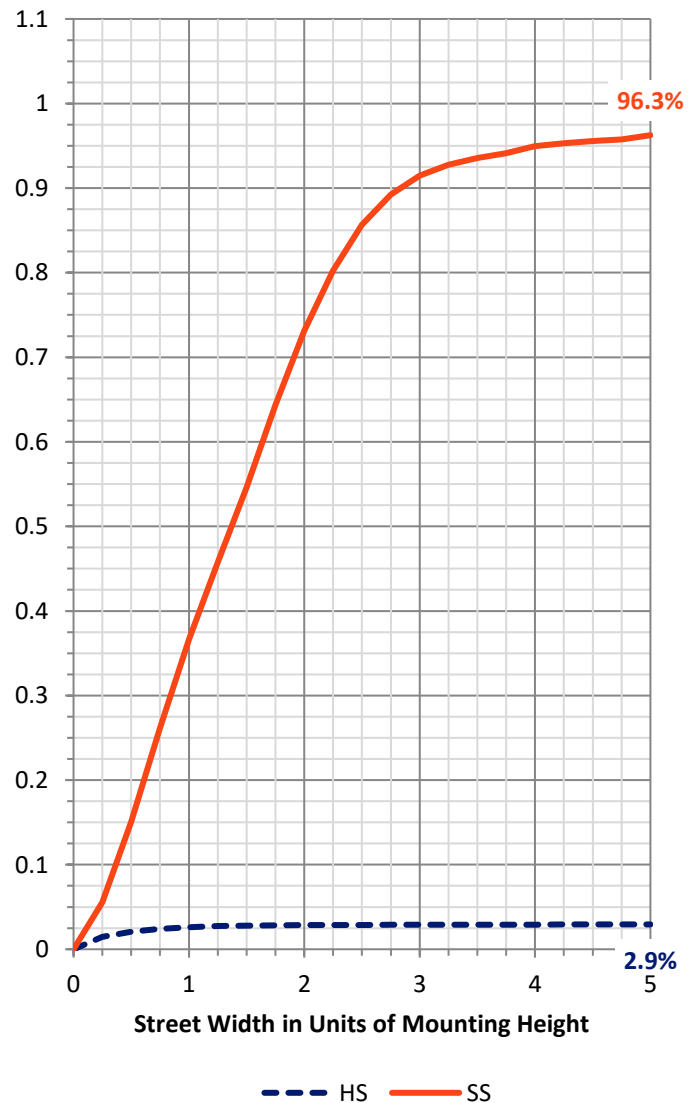
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	117.5	0.0	117.5
	% Fixture	3.0	0.0	3.0
Street Side	Lumens	3829.9	0.0	3829.9
	% Fixture	97.0	0.0	97.0
Total	Lumens	3947.5	0.0	3947.5
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.6	0.8
10°-20°	105.6	2.7
20°-30°	202.2	5.1
30°-40°	336.3	8.5
40°-50°	455.0	11.5
50°-60°	711.6	18.0
60°-70°	1463.0	37.1
70°-80°	588.7	14.9
80°-90°	54.4	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°	3947.5	100.0
0°-180°	3947.5	100.0



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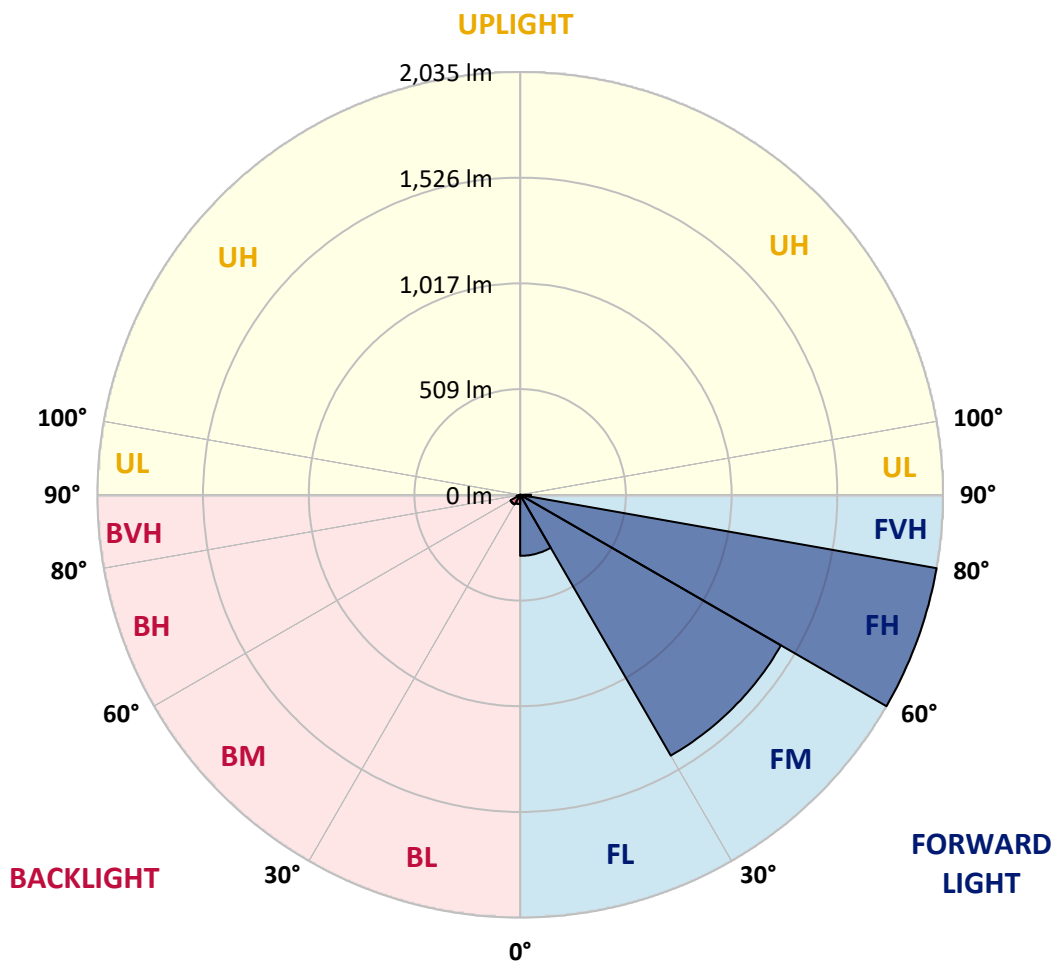
CATALOG NUMBER: LDRL-SL4-E02-E-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	293.8	7.4			
FM (30°-60°)	1449.2	36.7			
FH (60°-80°)	2034.5	51.5			G2/5000
FVH (80°-90°)	52.4	1.3			G1/100
BL (0°-30°)	44.7	1.1	B0/110		
BM (30°-60°)	53.7	1.4	B0/220		
BH (60°-80°)	17.1	0.4	B0/110		G0/110
BVH (80°-90°)	2.0	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





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	298.1	298.1	298.1	298.1	298.1	298.1	298.1	298.1	298.1	298.1	298.1
2.5°	397.7	393.2	388.0	388.0	381.5	381.5	377.6	367.3	366.0	360.2	354.4
5°	507.6	503.8	497.3	491.5	486.3	477.2	470.8	458.5	444.9	432.0	420.3
7.5°	615.0	613.0	601.4	599.4	591.0	576.2	563.2	545.1	521.8	503.8	482.4
10°	714.6	710.0	707.4	696.4	684.2	668.0	648.0	626.0	598.8	570.4	540.0
12.5°	793.4	790.9	779.2	774.7	761.8	745.6	720.4	691.9	664.8	627.9	592.4
15°	852.3	847.8	840.0	832.9	817.4	803.2	779.9	748.8	715.8	675.8	633.1
17.5°	901.4	893.0	891.1	880.1	863.9	847.1	821.2	792.8	754.0	713.9	667.4
20°	967.4	955.8	951.9	935.7	917.0	893.7	863.9	828.4	787.6	743.6	695.8
22.5°	1045.0	1036.6	1028.2	1014.0	990.0	957.0	913.7	874.9	823.2	774.7	723.0
25°	1154.9	1147.8	1134.2	1114.8	1085.1	1045.6	993.3	936.4	875.6	813.5	752.7
27.5°	1261.6	1255.2	1245.5	1230.6	1197.0	1153.6	1089.0	1016.6	939.6	864.6	797.3
30°	1361.9	1356.0	1346.4	1331.5	1301.7	1259.0	1186.0	1108.4	1012.7	925.4	844.5
32.5°	1469.8	1467.9	1456.9	1435.6	1409.7	1352.2	1272.6	1189.2	1092.2	991.3	896.9
35°	1592.1	1577.2	1566.8	1545.5	1501.6	1440.1	1347.0	1255.8	1153.6	1050.2	944.8
37.5°	1695.6	1681.3	1668.4	1641.2	1587.6	1509.3	1403.9	1303.7	1198.3	1092.8	985.5
40°	1771.2	1764.1	1748.6	1713.0	1652.9	1559.8	1445.9	1336.6	1230.6	1124.6	1018.5
42.5°	1827.5	1816.5	1799.0	1762.2	1691.0	1585.0	1462.8	1350.2	1245.5	1144.0	1039.8
45°	1848.2	1839.1	1822.9	1782.8	1705.9	1592.1	1462.1	1346.4	1246.1	1149.8	1054.0
47.5°	1835.9	1826.8	1812.6	1775.1	1699.4	1583.7	1450.4	1335.4	1239.6	1151.7	1067.0
50°	1795.1	1790.0	1779.0	1747.3	1679.4	1567.5	1440.1	1329.5	1238.4	1161.4	1085.1
52.5°	1791.2	1788.0	1774.4	1742.8	1673.6	1562.3	1438.8	1332.8	1249.4	1173.7	1098.0
55°	2189.0	2143.0	2040.2	1952.9	1809.4	1638.6	1504.1	1385.2	1295.9	1222.2	1169.2
57.5°	3111.1	3042.5	2907.4	2741.2	2411.4	2087.4	1828.1	1640.6	1548.1	1514.5	1534.5
60°	3543.0	3530.8	3509.4	3430.5	3261.8	2983.0	2672.6	2337.0	2202.5	2190.9	2231.6
62.5°	3748.0	3740.3	3746.8	3737.0	3684.7	3603.2	3514.0	3369.1	3235.9	3149.9	2967.5
65°	3842.4	3847.6	3884.5	3913.6	3920.0	3941.4	4006.7	4187.1	4319.0	4097.2	3590.9
67.5°	3602.6	3632.9	3717.6	3823.7	3947.8	4068.1	4262.1	4642.4	4913.3	4652.7	3933.6
69°	2982.4	2997.3	3204.2	3404.0	3707.3	3919.4	4200.7	4699.3	5003.8	4709.6	3906.5
70°	2348.0	2361.6	2583.4	2855.0	3367.8	3640.7	4008.6	4602.9	4919.2	4634.0	3766.8
72.5°	1059.2	1039.8	1118.1	1263.6	1821.0	2254.2	2897.7	3729.3	4058.4	3712.5	2818.2
75°	739.8	731.4	739.8	740.4	827.1	1067.0	1346.4	2021.4	2500.0	2157.2	1346.4
77.5°	573.0	567.1	561.3	554.8	565.2	633.1	660.2	717.2	931.2	880.8	513.4
80°	453.3	448.1	462.4	457.8	457.8	465.6	460.4	439.1	399.0	369.9	331.1
82.5°	210.8	212.1	212.1	230.2	277.4	324.0	338.8	317.5	282.0	239.9	193.4
85°	20.0	22.6	38.2	58.8	117.0	131.9	132.6	109.9	109.9	86.6	69.8
87.5°	0.0	0.6	0.6	0.6	5.8	16.2	13.6	3.9	1.9	1.9	3.2
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	298.1	298.1	298.1	298.1	298.1	298.1	298.1	298.1	298.1	298.1	298.1
2.5°	344.0	342.1	334.3	326.6	319.4	311.7	304.6	297.5	289.7	283.9	276.8
5°	402.2	388.0	371.8	356.3	340.8	324.6	307.8	292.9	277.4	263.2	249.6
7.5°	461.1	433.3	411.3	383.5	358.2	333.0	309.8	285.8	263.8	243.2	223.8
10°	510.9	477.2	443.0	407.4	371.2	337.6	305.2	276.8	247.7	222.4	198.5
12.5°	551.6	508.9	466.9	422.3	381.5	338.8	298.8	264.5	230.2	201.8	177.2
15°	588.5	539.3	488.9	437.2	385.4	336.9	292.3	249.6	214.7	182.4	154.6
17.5°	618.2	562.0	505.0	446.8	391.2	334.3	283.9	239.3	198.5	164.9	137.7
20°	644.1	585.2	523.8	458.5	395.1	333.7	276.8	226.3	184.3	148.7	122.2
22.5°	668.0	609.2	543.2	473.4	400.9	333.0	270.3	216.6	172.0	136.4	109.9
25°	695.2	633.1	563.9	488.9	411.3	335.6	266.4	208.9	161.0	124.8	100.2
27.5°	725.6	660.2	588.5	508.3	424.8	340.8	265.1	200.5	151.3	113.8	92.5
30°	768.2	692.6	613.0	527.7	437.2	346.6	263.8	195.3	141.6	105.4	84.7
32.5°	805.7	724.2	640.2	547.7	450.7	352.4	263.2	188.2	132.6	97.0	78.9
35°	845.2	753.4	663.5	567.1	462.4	358.9	262.6	183.0	124.2	88.6	73.1
37.5°	879.4	777.9	681.6	583.9	475.3	364.7	263.2	178.5	116.4	81.5	67.9
40°	908.6	803.2	701.6	599.4	488.9	373.8	263.8	174.0	108.6	75.0	63.4
42.5°	934.4	827.1	723.0	616.9	504.4	384.1	267.7	170.1	102.2	69.2	58.8
45°	954.5	849.1	746.2	641.5	529.6	400.9	274.8	167.5	95.7	64.0	55.0
47.5°	975.2	881.4	785.7	680.3	566.5	427.4	287.1	166.8	90.5	60.1	51.7
50°	1003.6	913.7	820.6	719.7	600.1	454.6	302.0	167.5	84.1	56.2	48.5
52.5°	1024.3	946.7	865.9	788.3	680.3	537.4	359.6	179.1	80.8	53.0	44.6
55°	1146.5	1133.0	1134.9	1147.8	1064.4	914.4	601.4	258.7	95.0	60.1	44.0
57.5°	1616.6	1664.5	1692.3	1691.7	1553.9	1288.8	807.7	332.4	106.0	69.8	52.4
60°	2234.8	2198.6	2147.6	2021.4	1838.4	1471.2	903.4	357.6	91.8	55.6	47.8
62.5°	2781.3	2569.2	2381.0	2176.6	1936.8	1534.5	922.8	355.7	80.2	42.0	33.6
65°	3122.1	2740.6	2436.6	2180.5	1898.0	1481.5	873.0	326.6	67.9	34.3	27.8
67.5°	3203.6	2648.1	2218.0	1891.5	1585.6	1153.0	640.8	245.7	53.0	28.4	24.6
69°	3025.7	2353.8	1837.8	1467.3	1153.6	765.0	396.4	155.2	40.7	25.9	22.6
70°	2783.2	2047.3	1497.0	1177.6	854.2	537.4	277.4	109.3	33.0	23.9	20.7
72.5°	1790.6	1075.4	735.9	512.2	352.4	214.0	108.6	49.2	25.2	20.0	16.8
75°	694.5	397.7	288.4	219.2	171.4	119.0	66.0	31.7	21.3	16.8	12.9
77.5°	342.1	261.9	214.0	146.8	85.4	53.0	35.6	24.6	17.4	12.3	8.4
80°	270.3	179.8	107.4	66.6	50.4	38.2	27.2	20.0	12.9	7.8	5.8
82.5°	138.4	75.6	55.6	45.3	37.5	29.8	22.0	14.2	8.4	5.2	4.5
85°	43.3	31.7	28.4	27.8	25.9	21.3	15.5	9.0	5.2	3.2	3.2
87.5°	3.2	4.5	5.8	4.5	5.2	4.5	5.8	3.9	2.6	2.6	1.9
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	298.1	298.1	298.1	298.1	298.1	298.1	298.1	298.1	298.1	298.1	298.1
2.5°	271.6	263.8	256.7	252.2	243.8	240.6	237.3	236.0	230.2	231.5	226.3
5°	237.3	223.8	213.4	203.0	193.4	186.2	180.4	173.3	167.5	164.9	159.7
7.5°	206.3	188.8	175.2	164.2	152.6	143.6	135.8	130.6	125.4	120.3	117.7
10°	179.1	160.4	144.8	133.8	122.9	115.1	109.3	105.4	102.2	100.2	99.6
12.5°	153.9	135.8	121.6	111.9	103.5	99.6	97.0	95.0	94.4	93.8	93.8
15°	134.5	116.4	105.4	98.3	94.4	92.5	91.8	90.5	89.2	88.6	88.6
17.5°	116.4	102.8	95.0	91.2	89.2	88.0	86.6	85.4	84.1	83.4	83.4
20°	104.1	93.1	89.2	86.6	84.7	83.4	81.5	80.2	79.5	78.9	78.2
22.5°	94.4	87.3	84.7	82.8	80.2	78.2	77.0	75.6	74.4	73.7	73.1
25°	87.3	82.8	80.8	78.2	75.6	73.7	71.8	69.8	68.6	67.9	66.6
27.5°	82.1	78.9	76.3	73.1	70.5	68.6	66.6	64.7	63.4	62.1	61.4
30°	77.6	74.4	71.1	68.6	65.3	63.4	60.8	58.8	58.2	56.9	55.6
32.5°	73.1	69.8	66.6	63.4	60.1	57.6	56.2	53.7	52.4	51.7	50.4
35°	67.9	64.7	60.8	58.2	55.0	52.4	50.4	48.5	47.2	45.9	45.3
37.5°	63.4	59.5	55.6	52.4	49.8	47.2	45.3	43.3	42.0	40.7	40.1
40°	58.2	54.3	50.4	47.2	44.6	42.7	40.7	38.8	37.5	36.8	36.8
42.5°	53.7	49.2	45.3	42.7	40.7	38.2	36.2	34.3	33.6	33.0	33.6
45°	49.2	44.6	41.4	38.8	36.8	34.3	32.3	31.0	30.4	31.0	31.7
47.5°	45.3	40.7	37.5	35.6	33.6	31.7	29.8	28.4	28.4	29.8	31.0
50°	41.4	36.8	34.3	33.0	31.0	29.1	26.5	25.9	26.5	27.8	29.1
52.5°	37.5	32.3	30.4	29.8	27.8	25.9	23.9	23.3	23.9	25.2	24.6
55°	33.6	28.4	27.8	27.2	25.2	22.6	20.7	20.7	20.7	20.0	18.8
57.5°	32.3	25.2	24.6	23.9	22.0	19.4	18.1	16.8	16.2	14.2	13.6
60°	33.6	22.6	22.6	21.3	19.4	16.8	14.9	12.9	11.6	10.4	10.4
62.5°	27.2	20.7	20.0	18.8	16.2	13.6	11.6	9.7	9.0	8.4	8.4
65°	22.0	18.8	17.4	15.5	13.6	11.0	9.0	7.8	7.1	7.1	7.8
67.5°	20.0	16.8	14.9	12.9	11.0	8.4	7.1	6.5	6.5	7.1	7.1
69°	18.8	15.5	13.6	11.6	9.7	7.8	6.5	6.5	6.5	6.5	7.1
70°	17.4	14.9	12.9	11.0	8.4	6.5	5.8	5.8	6.5	6.5	7.1
72.5°	13.6	11.6	11.0	9.0	6.5	5.8	5.2	5.8	5.8	6.5	6.5
75°	10.4	8.4	8.4	7.1	5.2	4.5	4.5	5.2	5.2	5.8	5.8
77.5°	7.1	5.8	5.8	5.2	4.5	3.9	3.9	4.5	5.2	5.2	5.8
80°	5.2	4.5	3.9	4.5	3.9	3.2	3.9	4.5	4.5	5.2	5.2
82.5°	3.9	3.9	3.9	3.9	3.2	3.2	3.9	3.9	4.5	5.2	5.2
85°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.9	3.9	4.5	4.5
87.5°	1.9	1.9	1.9	2.6	2.6	3.2	3.2	3.2	3.2	3.9	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: P163797

CATALOG NUMBER: LDRL-SL4-E02-E-HSS

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	298.1	298.1	298.1	298.1
2.5°	225.0	224.4	221.8	222.4
5°	157.8	153.9	156.5	155.8
7.5°	115.8	115.1	114.4	115.8
10°	98.9	98.9	98.3	98.9
12.5°	93.1	93.1	93.1	93.1
15°	88.6	88.6	88.0	88.0
17.5°	83.4	83.4	83.4	82.8
20°	78.2	77.6	77.6	77.6
22.5°	72.4	71.8	71.8	71.8
25°	66.6	66.0	66.0	66.0
27.5°	60.8	60.1	59.5	59.5
30°	55.0	54.3	53.7	53.7
32.5°	49.2	48.5	47.8	47.8
35°	44.0	44.0	43.3	42.7
37.5°	39.4	39.4	39.4	39.4
40°	36.2	36.8	36.8	36.8
42.5°	34.3	34.9	35.6	36.2
45°	33.0	34.3	34.9	34.9
47.5°	32.3	33.0	33.6	33.6
50°	29.8	29.1	29.1	29.1
52.5°	23.9	22.6	22.0	21.3
55°	17.4	16.8	15.5	15.5
57.5°	12.3	12.3	11.6	11.6
60°	9.7	9.7	9.0	9.7
62.5°	8.4	8.4	8.4	8.4
65°	7.8	7.8	7.8	7.8
67.5°	7.8	7.8	7.8	7.8
69°	7.1	7.1	7.1	7.1
70°	7.1	7.1	7.1	7.1
72.5°	6.5	6.5	6.5	6.5
75°	5.8	6.5	6.5	6.5
77.5°	5.8	5.8	5.8	5.8
80°	5.2	5.2	5.8	5.8
82.5°	5.2	5.2	5.2	5.2
85°	4.5	4.5	5.2	5.2
87.5°	3.9	3.9	4.5	4.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)