

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: P163817

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P163817
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-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) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7895 lumens
Efficiency: N/A
Efficacy: 81.2 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

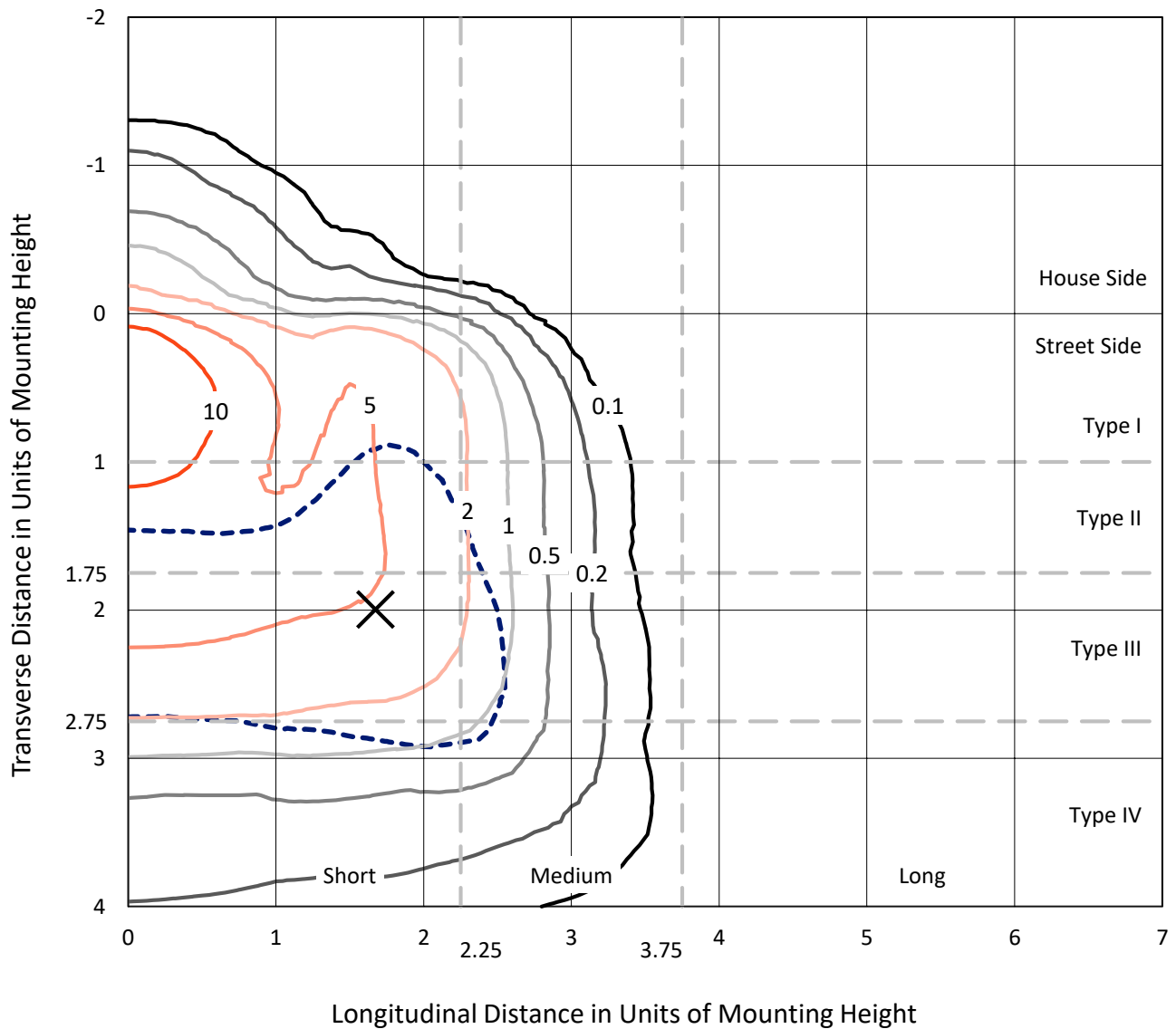
Input Watts (W): 97.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

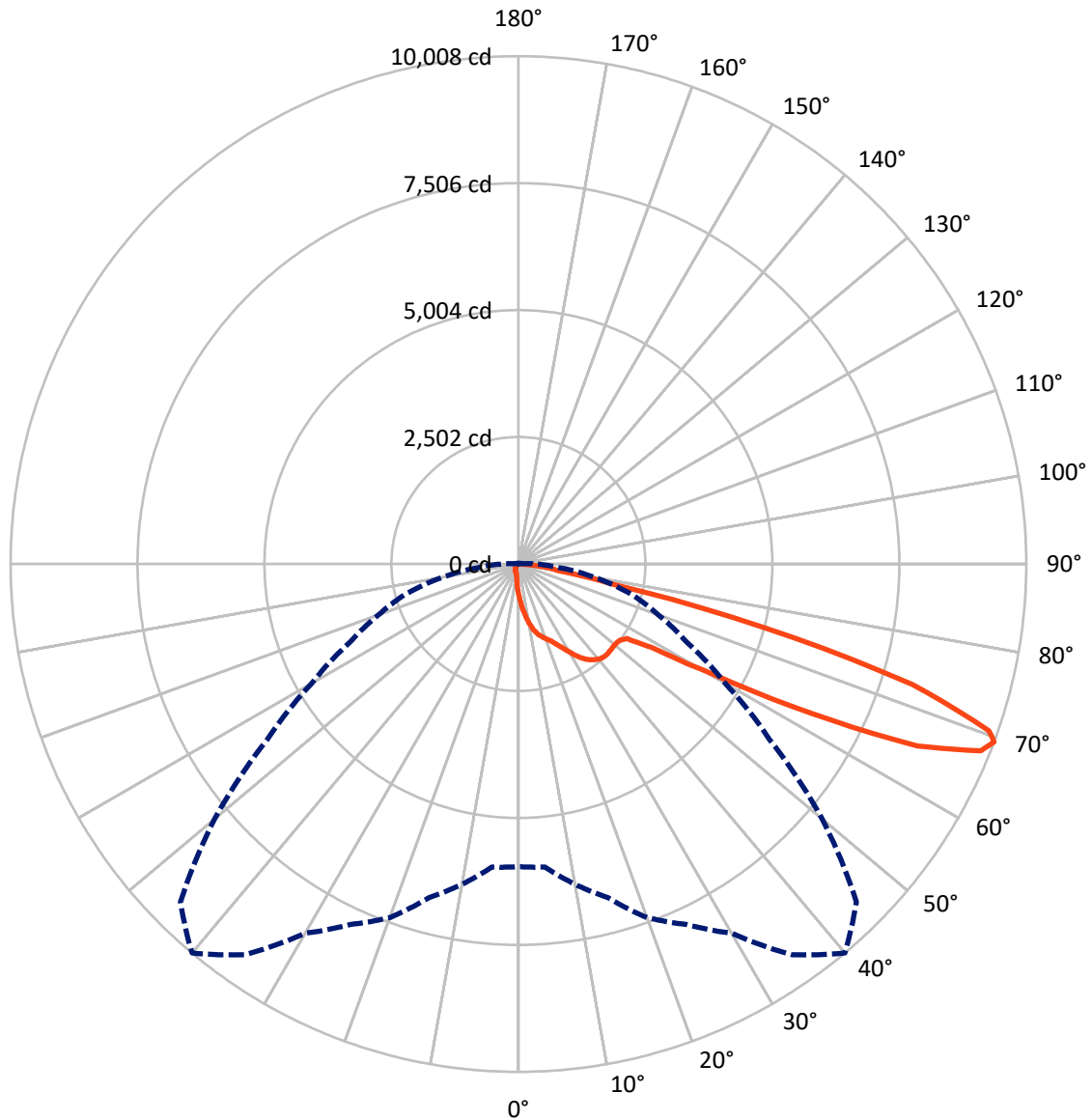
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 17.7 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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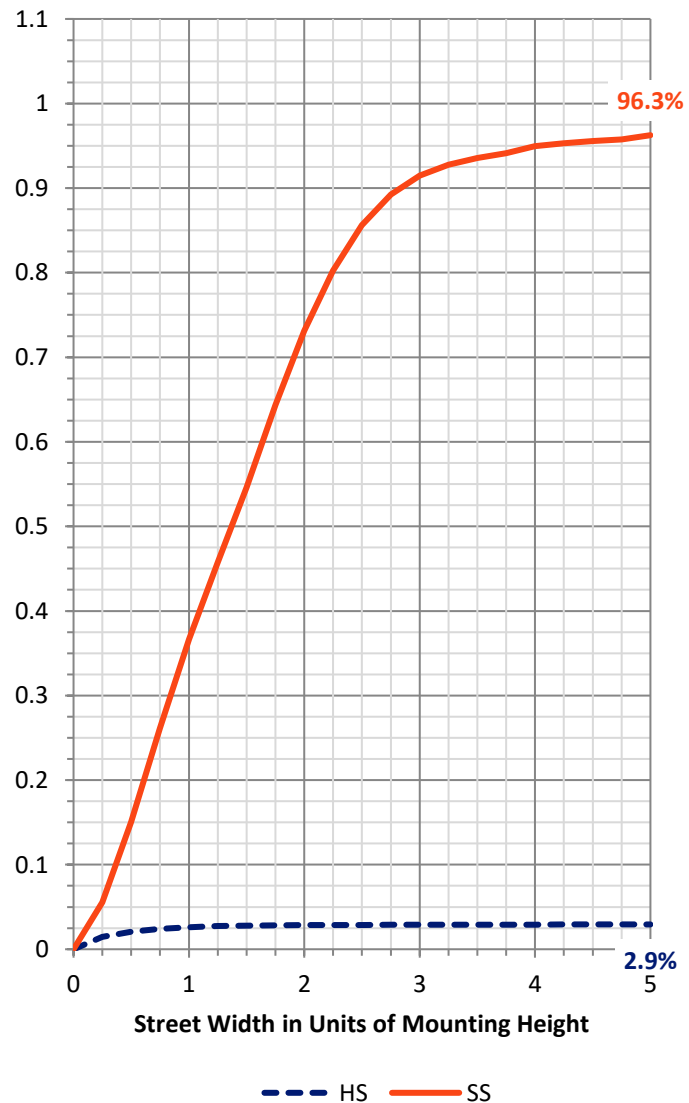
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	235.1	0.0	235.1
	% Fixture	3.0	0.0	3.0
Street Side	Lumens	7659.9	0.0	7659.9
	% Fixture	97.0	0.0	97.0
Total	Lumens	7895.0	0.0	7895.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.3	0.8
10°-20°	211.3	2.7
20°-30°	404.4	5.1
30°-40°	672.5	8.5
40°-50°	910.0	11.5
50°-60°	1423.2	18.0
60°-70°	2926.0	37.1
70°-80°	1177.4	14.9
80°-90°	108.9	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°	7895.0	100.0
0°-180°	7895.0	100.0



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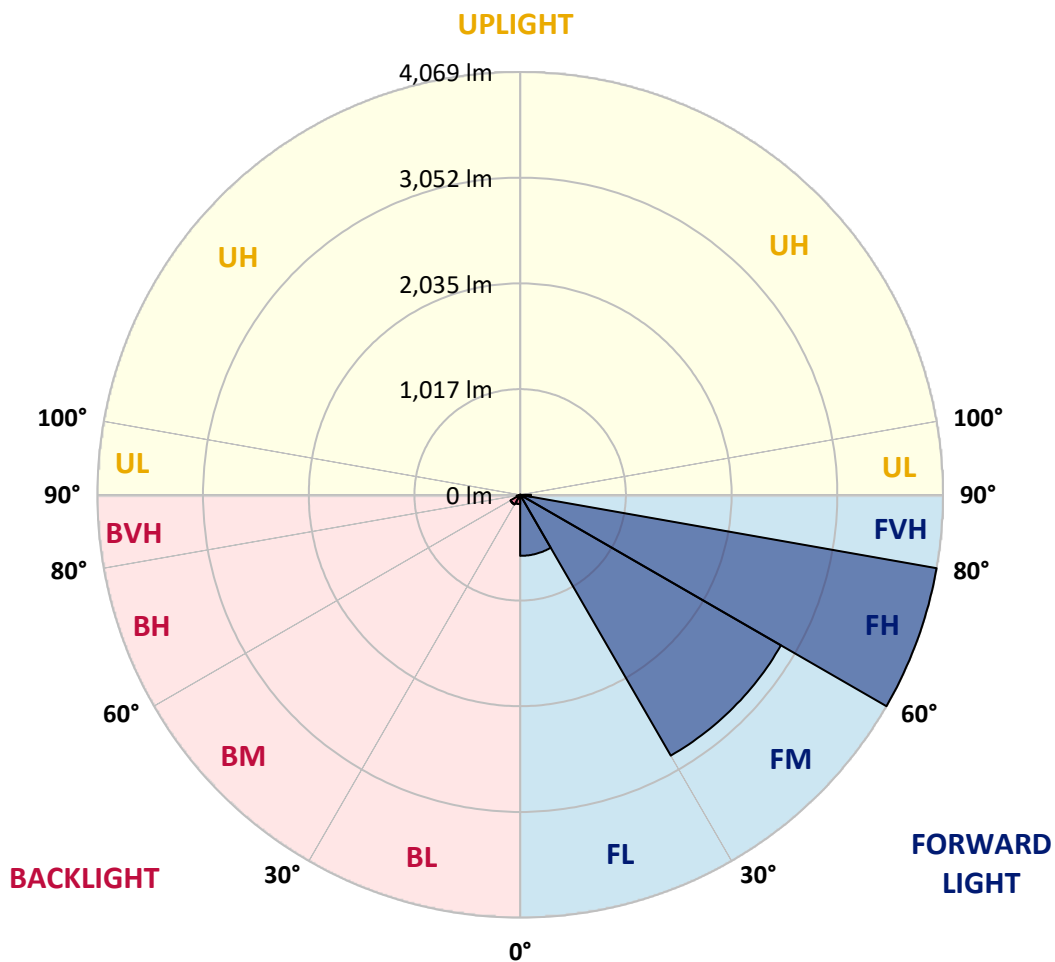
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	587.5	7.4			
FM	(30°-60°)	2898.4	36.7			
FH	(60°-80°)	4069.1	51.5			G2/5000
FVH	(80°-90°)	104.9	1.3			G2/225
BL	(0°-30°)	89.4	1.1	B0/110		
BM	(30°-60°)	107.3	1.4	B0/220		
BH	(60°-80°)	34.3	0.4	B0/110		G0/110
BVH	(80°-90°)	4.0	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°	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2
2.5°	795.4	786.3	776.0	776.0	763.0	763.0	755.3	734.6	732.0	720.4	708.7
5°	1015.3	1007.5	994.6	983.0	972.6	954.5	941.5	917.0	889.8	863.9	840.6
7.5°	1229.9	1226.1	1202.8	1198.9	1182.1	1152.3	1126.5	1090.2	1043.7	1007.5	964.8
10°	1429.1	1420.1	1414.9	1392.9	1368.3	1336.0	1295.9	1251.9	1197.6	1140.7	1079.9
12.5°	1586.9	1581.8	1558.5	1549.4	1523.5	1491.2	1440.7	1383.8	1329.5	1255.8	1184.7
15°	1704.6	1695.5	1680.0	1665.8	1634.7	1606.3	1559.8	1497.7	1431.7	1351.5	1266.2
17.5°	1802.9	1786.1	1782.2	1760.2	1727.8	1694.2	1642.5	1585.6	1508.0	1427.8	1334.7
20°	1934.8	1911.5	1903.8	1871.4	1833.9	1787.4	1727.8	1656.7	1575.3	1487.3	1391.6
22.5°	2090.0	2073.2	2056.4	2027.9	1980.1	1914.1	1827.4	1749.8	1646.4	1549.4	1445.9
25°	2309.8	2295.7	2268.5	2229.7	2170.2	2091.3	1986.6	1872.7	1751.1	1627.0	1505.4
27.5°	2523.3	2510.3	2491.0	2461.2	2393.9	2307.3	2177.9	2033.1	1879.2	1729.2	1594.6
30°	2723.8	2712.1	2692.7	2663.0	2603.4	2518.1	2371.9	2216.7	2025.4	1850.7	1689.0
32.5°	2939.7	2935.8	2913.8	2871.2	2819.4	2704.3	2545.3	2378.4	2184.4	1982.6	1793.8
35°	3184.2	3154.4	3133.7	3091.0	3003.1	2880.2	2694.0	2511.6	2307.3	2100.3	1889.5
37.5°	3391.1	3362.6	3336.8	3282.5	3175.1	3018.6	2807.8	2607.4	2396.6	2185.7	1971.0
40°	3542.4	3528.2	3497.1	3426.0	3305.8	3119.5	2891.8	2673.3	2461.2	2249.1	2037.0
42.5°	3655.0	3633.0	3598.0	3524.3	3382.0	3169.9	2925.5	2700.5	2491.0	2287.9	2079.7
45°	3696.3	3678.2	3645.8	3565.7	3411.8	3184.2	2924.2	2692.7	2492.2	2299.5	2108.1
47.5°	3671.8	3653.6	3625.2	3550.2	3398.9	3167.4	2900.9	2670.7	2479.3	2303.4	2134.0
50°	3590.2	3579.9	3557.9	3494.6	3358.7	3135.0	2880.2	2659.0	2476.7	2322.8	2170.2
52.5°	3582.5	3576.0	3548.9	3485.5	3347.1	3124.6	2877.6	2665.5	2498.7	2347.4	2196.1
55°	4377.9	4286.1	4080.4	3905.8	3618.7	3277.3	3008.2	2770.3	2591.8	2444.4	2338.3
57.5°	6222.2	6085.0	5814.8	5482.4	4822.8	4174.8	3656.2	3281.1	3096.2	3029.0	3069.0
60°	7086.1	7061.5	7018.9	6861.0	6523.5	5966.1	5345.3	4674.1	4405.0	4381.8	4463.3
62.5°	7496.1	7480.6	7493.5	7474.1	7369.4	7206.4	7027.9	6738.2	6471.8	6299.8	5935.0
65°	7684.9	7695.3	7769.0	7827.2	7840.1	7882.8	8013.4	8374.2	8638.1	8194.5	7181.8
67.5°	7205.1	7265.8	7435.3	7647.4	7895.7	8136.2	8524.2	9284.7	9826.6	9305.4	7867.3
69°	5964.8	5994.6	6408.4	6808.0	7414.6	7838.8	8401.4	9398.6	10007.7	9419.3	7813.0
70°	4696.1	4723.2	5166.8	5710.0	6735.6	7281.4	8017.3	9205.8	9838.3	9267.9	7533.6
72.5°	2118.5	2079.7	2236.2	2527.1	3642.0	4508.5	5795.4	7458.6	8116.9	7425.0	5636.3
75°	1479.5	1462.7	1479.5	1480.9	1654.2	2134.0	2692.7	4042.9	5000.0	4314.5	2692.7
77.5°	1145.9	1134.2	1122.6	1109.7	1130.4	1266.2	1320.5	1434.3	1862.4	1761.5	1026.9
80°	906.6	896.2	924.7	915.7	915.7	931.2	920.9	878.2	798.0	739.8	662.2
82.5°	421.6	424.2	424.2	460.4	554.8	647.9	677.7	635.0	563.9	479.8	386.7
85°	40.1	45.3	76.3	117.7	234.1	263.8	265.1	219.8	219.8	173.3	139.7
87.5°	0.0	1.3	1.3	1.3	11.6	32.3	27.1	7.8	3.8	3.8	6.5
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°	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2
2.5°	688.1	684.2	668.6	653.1	638.9	623.4	609.1	595.0	579.4	567.8	553.5
5°	804.5	776.0	743.7	712.6	681.6	649.3	615.6	585.8	554.8	526.4	499.2
7.5°	922.2	866.6	822.6	767.0	716.5	666.1	619.5	571.7	527.7	486.3	447.5
10°	1021.8	954.5	885.9	814.8	742.4	675.1	610.5	553.5	495.4	444.9	397.0
12.5°	1103.2	1017.8	933.8	844.6	763.0	677.7	597.5	529.0	460.4	403.5	354.4
15°	1177.0	1078.6	977.8	874.3	770.8	673.8	584.6	499.2	429.4	364.7	309.1
17.5°	1236.4	1123.9	1010.1	893.7	782.5	668.6	567.8	478.6	397.0	329.8	275.4
20°	1288.2	1170.5	1047.6	917.0	790.2	667.4	553.5	452.6	368.6	297.4	244.4
22.5°	1336.0	1218.3	1086.4	946.7	801.8	666.1	540.6	433.3	344.0	272.9	219.8
25°	1390.3	1266.2	1127.8	977.8	822.6	671.2	532.9	417.8	322.0	249.6	200.5
27.5°	1451.1	1320.5	1177.0	1016.6	849.7	681.6	530.2	401.0	302.6	227.6	185.0
30°	1536.5	1385.1	1226.1	1055.4	874.3	693.2	527.7	390.6	283.2	210.8	169.4
32.5°	1611.4	1448.5	1280.4	1095.4	901.4	704.9	526.4	376.3	265.1	194.0	157.8
35°	1690.4	1506.7	1327.0	1134.2	924.7	717.8	525.1	366.0	248.3	177.2	146.2
37.5°	1758.9	1555.8	1363.1	1167.8	950.6	729.4	526.4	357.0	232.8	163.0	135.8
40°	1817.1	1606.3	1403.3	1198.9	977.8	747.5	527.7	347.9	217.3	150.0	126.7
42.5°	1868.9	1654.2	1445.9	1233.8	1008.8	768.2	535.4	340.2	204.3	138.4	117.7
45°	1909.0	1698.2	1492.5	1283.0	1059.2	801.8	549.7	335.0	191.4	128.0	109.9
47.5°	1950.3	1762.8	1571.4	1360.6	1133.0	854.9	574.2	333.7	181.0	120.2	103.4
50°	2007.2	1827.4	1641.2	1439.4	1200.2	909.2	604.0	335.0	168.2	112.5	97.0
52.5°	2048.6	1893.4	1731.8	1576.6	1360.6	1074.7	719.1	358.2	161.7	106.1	89.2
55°	2293.0	2265.9	2269.8	2295.7	2128.8	1828.7	1202.8	517.4	190.1	120.2	87.9
57.5°	3233.3	3329.0	3384.6	3383.4	3107.8	2577.6	1615.4	664.8	212.1	139.7	104.7
60°	4469.7	4397.3	4295.1	4042.9	3676.9	2942.3	1806.8	715.2	183.7	111.2	95.7
62.5°	5562.6	5138.4	4762.0	4353.3	3873.5	3069.0	1845.6	711.4	160.4	84.1	67.3
65°	6244.2	5481.1	4873.2	4361.0	3795.9	2963.0	1746.0	653.1	135.8	68.6	55.6
67.5°	6407.1	5296.2	4436.1	3783.0	3171.2	2306.0	1281.7	491.4	106.1	56.9	49.1
69°	6051.4	4707.7	3675.6	2934.6	2307.3	1530.0	792.8	310.4	81.4	51.8	45.3
70°	5566.5	4094.6	2994.0	2355.1	1708.5	1074.7	554.8	218.6	65.9	47.8	41.4
72.5°	3581.2	2150.8	1471.8	1024.3	704.9	428.1	217.3	98.3	50.4	40.1	33.6
75°	1389.0	795.4	576.8	438.4	342.7	238.0	131.9	63.4	42.6	33.6	25.8
77.5°	684.2	523.8	428.1	293.6	170.7	106.1	71.1	49.1	34.9	24.6	16.8
80°	540.6	359.5	214.7	133.2	100.9	76.3	54.3	40.1	25.8	15.5	11.6
82.5°	276.8	151.3	111.2	90.6	75.0	59.5	44.0	28.5	16.8	10.3	9.0
85°	86.6	63.4	56.9	55.6	51.8	42.6	31.0	18.1	10.3	6.5	6.5
87.5°	6.5	9.0	11.6	9.0	10.3	9.0	11.6	7.8	5.2	5.2	3.8
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°	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2	596.2
2.5°	543.2	527.7	513.4	504.4	487.6	481.1	474.6	472.1	460.4	463.0	452.6
5°	474.6	447.5	426.8	406.1	386.7	372.5	360.8	346.6	335.0	329.8	319.4
7.5°	412.6	377.7	350.5	328.5	305.2	287.1	271.6	261.3	250.9	240.6	235.4
10°	358.2	320.7	289.7	267.7	245.8	230.2	218.6	210.8	204.3	200.5	199.2
12.5°	307.8	271.6	243.1	223.8	207.0	199.2	194.0	190.1	188.8	187.5	187.5
15°	269.0	232.8	210.8	196.6	188.8	185.0	183.7	181.0	178.5	177.2	177.2
17.5°	232.8	205.6	190.1	182.3	178.5	175.9	173.3	170.7	168.2	166.8	166.8
20°	208.2	186.2	178.5	173.3	169.4	166.8	163.0	160.4	159.0	157.8	156.5
22.5°	188.8	174.6	169.4	165.5	160.4	156.5	153.9	151.3	148.7	147.4	146.2
25°	174.6	165.5	161.7	156.5	151.3	147.4	143.5	139.7	137.1	135.8	133.2
27.5°	164.2	157.8	152.6	146.2	141.0	137.1	133.2	129.4	126.7	124.2	122.9
30°	155.2	148.7	142.2	137.1	130.6	126.7	121.6	117.7	116.4	113.8	111.2
32.5°	146.2	139.7	133.2	126.7	120.2	115.1	112.5	107.4	104.7	103.4	100.9
35°	135.8	129.4	121.6	116.4	109.9	104.7	100.9	97.0	94.4	91.8	90.6
37.5°	126.7	119.0	111.2	104.7	99.6	94.4	90.6	86.6	84.1	81.4	80.2
40°	116.4	108.6	100.9	94.4	89.2	85.4	81.4	77.6	75.0	73.7	73.7
42.5°	107.4	98.3	90.6	85.4	81.4	76.3	72.4	68.6	67.3	65.9	67.3
45°	98.3	89.2	82.8	77.6	73.7	68.6	64.6	62.1	60.8	62.1	63.4
47.5°	90.6	81.4	75.0	71.1	67.3	63.4	59.5	56.9	56.9	59.5	62.1
50°	82.8	73.7	68.6	65.9	62.1	58.2	53.0	51.8	53.0	55.6	58.2
52.5°	75.0	64.6	60.8	59.5	55.6	51.8	47.8	46.6	47.8	50.4	49.1
55°	67.3	56.9	55.6	54.3	50.4	45.3	41.4	41.4	41.4	40.1	37.5
57.5°	64.6	50.4	49.1	47.8	44.0	38.8	36.2	33.6	32.3	28.5	27.1
60°	67.3	45.3	45.3	42.6	38.8	33.6	29.8	25.8	23.3	20.7	20.7
62.5°	54.3	41.4	40.1	37.5	32.3	27.1	23.3	19.4	18.1	16.8	16.8
65°	44.0	37.5	34.9	31.0	27.1	22.0	18.1	15.5	14.2	14.2	15.5
67.5°	40.1	33.6	29.8	25.8	22.0	16.8	14.2	13.0	13.0	14.2	14.2
69°	37.5	31.0	27.1	23.3	19.4	15.5	13.0	13.0	13.0	13.0	14.2
70°	34.9	29.8	25.8	22.0	16.8	13.0	11.6	11.6	13.0	13.0	14.2
72.5°	27.1	23.3	22.0	18.1	13.0	11.6	10.3	11.6	11.6	13.0	13.0
75°	20.7	16.8	16.8	14.2	10.3	9.0	9.0	10.3	10.3	11.6	11.6
77.5°	14.2	11.6	11.6	10.3	9.0	7.8	7.8	9.0	10.3	10.3	11.6
80°	10.3	9.0	7.8	9.0	7.8	6.5	7.8	9.0	9.0	10.3	10.3
82.5°	7.8	7.8	7.8	7.8	6.5	6.5	7.8	7.8	9.0	10.3	10.3
85°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	7.8	7.8	9.0	9.0
87.5°	3.8	3.8	3.8	5.2	5.2	6.5	6.5	6.5	6.5	7.8	7.8
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: P163817

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

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	596.2	596.2	596.2	596.2
2.5°	450.1	448.8	443.6	444.9
5°	315.6	307.8	313.0	311.7
7.5°	231.5	230.2	228.9	231.5
10°	197.8	197.8	196.6	197.8
12.5°	186.2	186.2	186.2	186.2
15°	177.2	177.2	175.9	175.9
17.5°	166.8	166.8	166.8	165.5
20°	156.5	155.2	155.2	155.2
22.5°	144.9	143.5	143.5	143.5
25°	133.2	131.9	131.9	131.9
27.5°	121.6	120.2	119.0	119.0
30°	109.9	108.6	107.4	107.4
32.5°	98.3	97.0	95.7	95.7
35°	87.9	87.9	86.6	85.4
37.5°	78.9	78.9	78.9	78.9
40°	72.4	73.7	73.7	73.7
42.5°	68.6	69.8	71.1	72.4
45°	65.9	68.6	69.8	69.8
47.5°	64.6	65.9	67.3	67.3
50°	59.5	58.2	58.2	58.2
52.5°	47.8	45.3	44.0	42.6
55°	34.9	33.6	31.0	31.0
57.5°	24.6	24.6	23.3	23.3
60°	19.4	19.4	18.1	19.4
62.5°	16.8	16.8	16.8	16.8
65°	15.5	15.5	15.5	15.5
67.5°	15.5	15.5	15.5	15.5
69°	14.2	14.2	14.2	14.2
70°	14.2	14.2	14.2	14.2
72.5°	13.0	13.0	13.0	13.0
75°	11.6	13.0	13.0	13.0
77.5°	11.6	11.6	11.6	11.6
80°	10.3	10.3	11.6	11.6
82.5°	10.3	10.3	10.3	10.3
85°	9.0	9.0	10.3	10.3
87.5°	7.8	7.8	9.0	9.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)