

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: P163822

Luminaire Tested: **LDRL-SL4-F04-E-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P163822  
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-F04-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: (28) 4000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

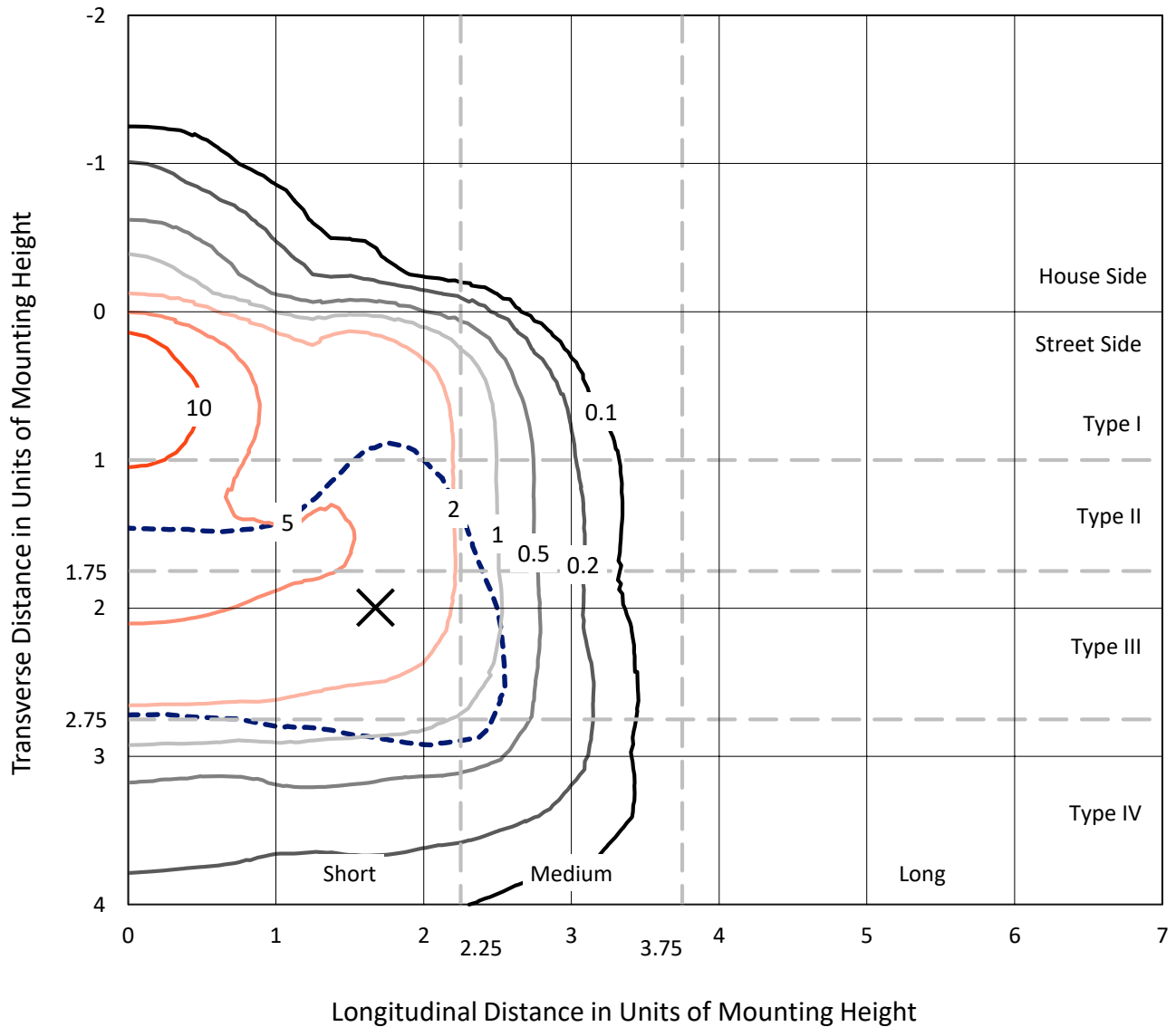
Lumens per Lamp: N/A  
Luminaire Lumens: 6517.5 lumens  
Efficiency: N/A  
Efficacy: 63.8 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.1')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B0 - U0 - G2  
  
Input Watts (W): 102.2  
Input Voltage (V): NR  
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



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### Iso-Footcandle Lines of Horizontal Illumination

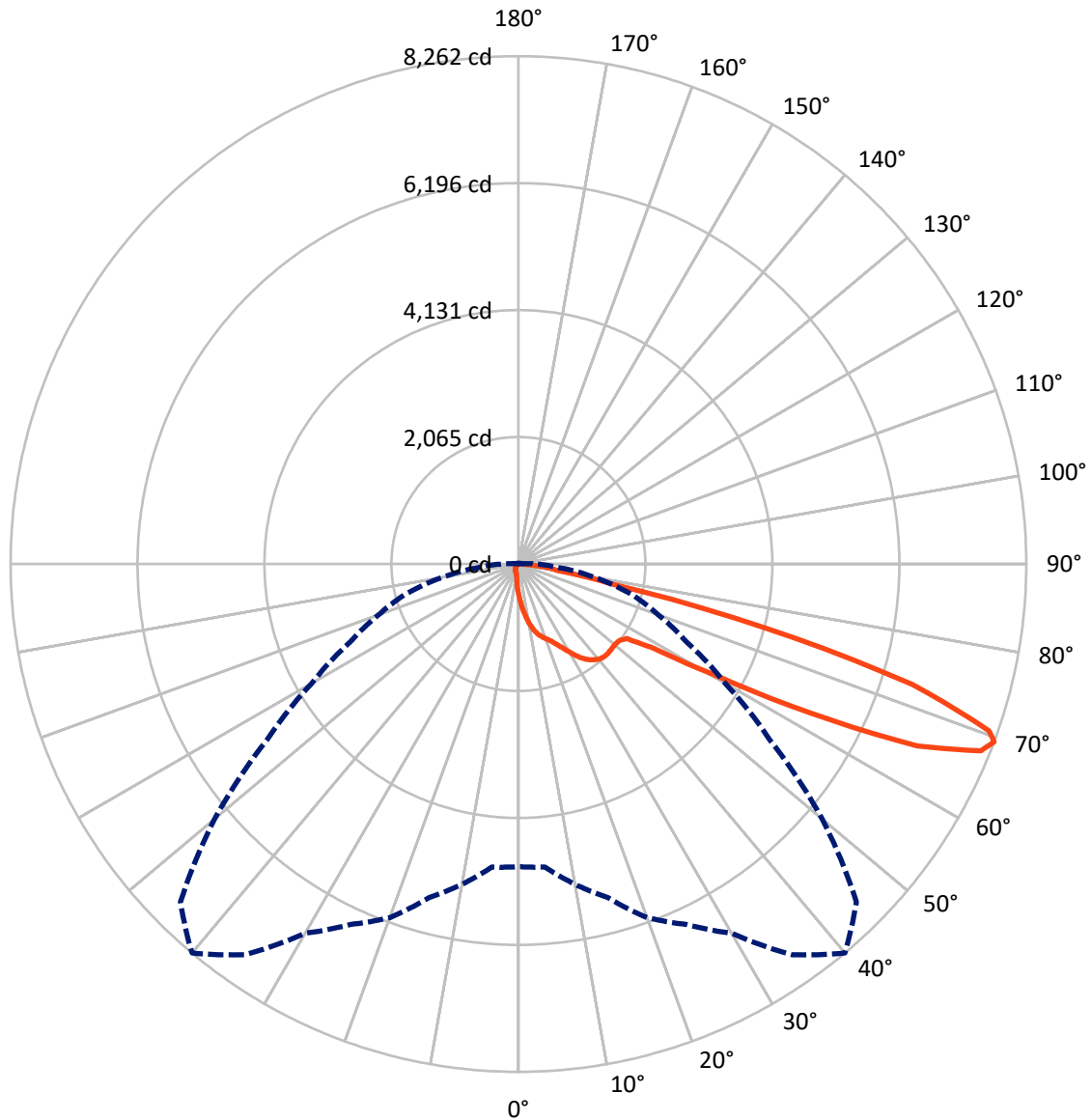
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 14.6 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
<b>House Side</b>	Lumens	194.1	0.0	194.1
	% Fixture	3.0	0.0	3.0
<b>Street Side</b>	Lumens	6323.4	0.0	6323.4
	% Fixture	97.0	0.0	97.0
<b>Total</b>	Lumens	6517.5	0.0	6517.5
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	50.6	0.8
10°-20°	174.4	2.7
20°-30°	333.8	5.1
30°-40°	555.2	8.5
40°-50°	751.2	11.5
50°-60°	1174.9	18.0
60°-70°	2415.5	37.1
70°-80°	972.0	14.9
80°-90°	89.9	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°	6517.5	100.0
0°-180°	6517.5	100.0



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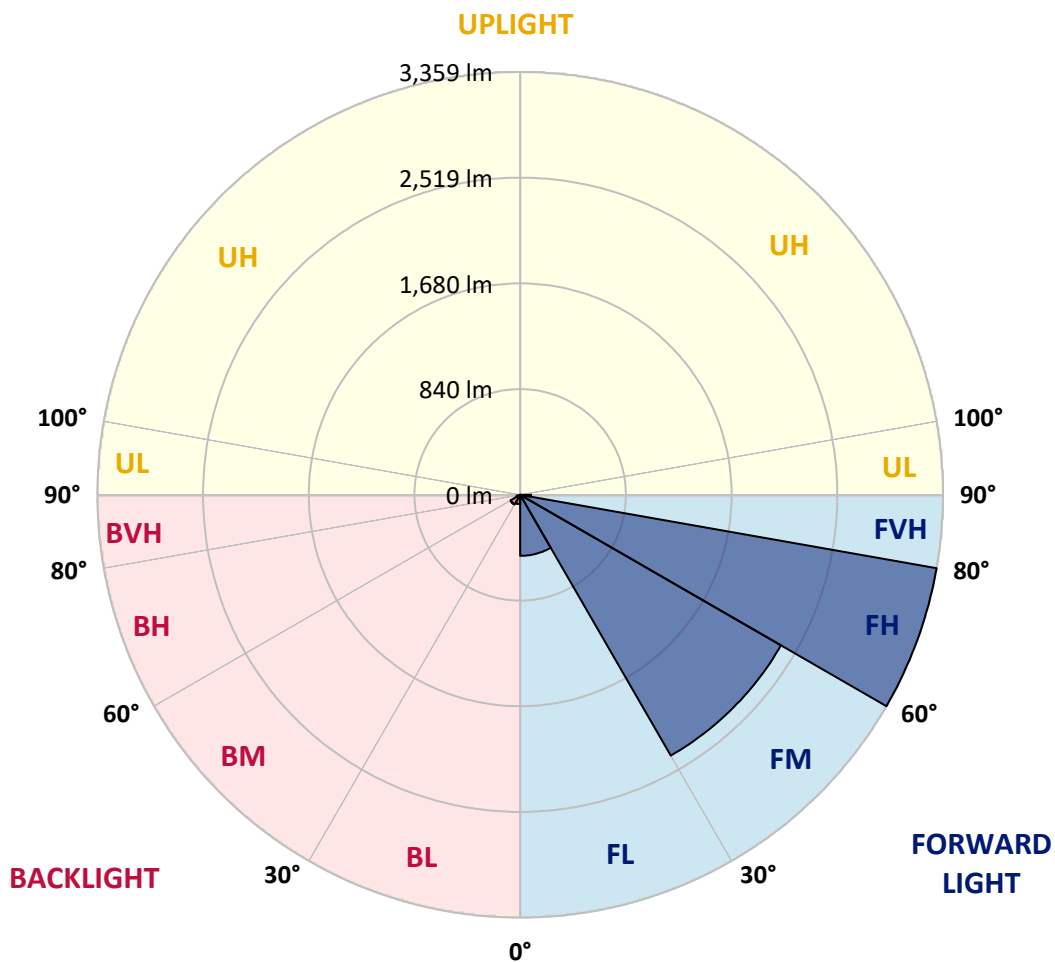
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	485.0	7.4			
FM (30°-60°)	2392.7	36.7			
FH (60°-80°)	3359.1	51.5			G2/5000
FVH (80°-90°)	86.6	1.3			G1/100
BL (0°-30°)	73.8	1.1	B0/110		
BM (30°-60°)	88.6	1.4	B0/220		
BH (60°-80°)	28.3	0.4	B0/110		G0/110
BVH (80°-90°)	3.3	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°	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2
2.5°	656.6	649.1	640.6	640.6	629.9	629.9	623.5	606.5	604.3	594.7	585.1
5°	838.1	831.7	821.0	811.5	802.9	787.9	777.2	757.0	734.6	713.2	694.0
7.5°	1015.3	1012.2	992.9	989.7	975.8	951.3	929.9	900.0	861.6	831.7	796.5
10°	1179.8	1172.3	1168.0	1149.9	1129.6	1102.9	1069.8	1033.5	988.6	941.7	891.5
12.5°	1310.0	1305.8	1286.6	1279.0	1257.7	1231.0	1189.4	1142.4	1097.6	1036.7	978.0
15°	1407.2	1399.7	1386.9	1375.1	1349.5	1326.1	1287.6	1236.4	1181.9	1115.7	1045.2
17.5°	1488.3	1474.5	1471.2	1453.1	1426.4	1398.6	1355.9	1309.0	1244.9	1178.7	1101.8
20°	1597.2	1578.0	1571.6	1544.9	1513.9	1475.5	1426.4	1367.7	1300.4	1227.8	1148.8
22.5°	1725.3	1711.5	1697.6	1674.1	1634.6	1580.1	1508.6	1444.5	1359.1	1279.0	1193.6
25°	1906.8	1895.1	1872.7	1840.7	1791.5	1726.4	1640.0	1546.0	1445.6	1343.1	1242.8
27.5°	2083.0	2072.3	2056.3	2031.8	1976.2	1904.7	1797.9	1678.4	1551.3	1427.5	1316.4
30°	2248.5	2238.9	2222.9	2198.3	2149.2	2078.7	1958.1	1830.0	1672.0	1527.8	1394.3
32.5°	2426.8	2423.6	2405.4	2370.2	2327.5	2232.5	2101.2	1963.4	1803.3	1636.7	1480.9
35°	2628.6	2604.0	2586.9	2551.7	2479.2	2377.7	2224.0	2073.4	1904.7	1733.9	1559.8
37.5°	2799.5	2775.9	2754.6	2709.8	2621.1	2492.0	2317.9	2152.4	1978.4	1804.3	1627.1
40°	2924.3	2912.6	2887.0	2828.2	2729.0	2575.2	2387.3	2206.9	2031.8	1856.7	1681.6
42.5°	3017.3	2999.1	2970.2	2909.4	2791.9	2616.8	2415.1	2229.3	2056.3	1888.7	1716.8
45°	3051.4	3036.5	3009.7	2943.6	2816.5	2628.6	2414.0	2222.9	2057.4	1898.3	1740.3
47.5°	3031.1	3016.1	2992.7	2930.7	2805.9	2614.7	2394.7	2204.7	2046.7	1901.5	1761.7
50°	2963.8	2955.3	2937.2	2884.8	2772.7	2588.1	2377.7	2195.1	2044.6	1917.5	1791.5
52.5°	2957.4	2952.1	2929.7	2877.4	2763.1	2579.5	2375.5	2200.5	2062.8	1937.8	1812.9
55°	3614.1	3538.3	3368.5	3224.4	2987.3	2705.5	2483.4	2287.0	2139.6	2017.9	1930.3
57.5°	5136.5	5023.4	4800.3	4525.9	3981.3	3446.4	3018.3	2708.6	2556.0	2500.5	2533.6
60°	5849.7	5829.5	5794.3	5664.0	5385.3	4925.1	4412.7	3858.6	3636.5	3617.3	3684.5
62.5°	6188.2	6175.4	6186.1	6170.0	6083.6	5949.1	5801.7	5562.5	5342.6	5200.6	4899.5
65°	6344.1	6352.6	6413.5	6461.5	6472.2	6507.4	6615.3	6913.1	7131.0	6764.7	5928.8
67.5°	5948.0	5998.1	6138.0	6313.2	6518.1	6716.7	7037.0	7664.8	8112.1	7681.9	6494.6
69°	4924.1	4948.7	5290.3	5620.2	6121.0	6471.1	6935.6	7758.7	8261.6	7775.9	6449.8
70°	3876.7	3899.1	4265.3	4713.7	5560.4	6010.9	6618.5	7599.7	8121.8	7650.9	6219.2
72.5°	1748.9	1716.8	1846.0	2086.2	3006.6	3721.9	4784.2	6157.2	6700.7	6129.5	4652.9
75°	1221.4	1207.5	1221.4	1222.5	1365.6	1761.7	2222.9	3337.5	4127.6	3561.7	2222.9
77.5°	946.0	936.3	926.8	916.1	933.2	1045.2	1090.1	1184.1	1537.5	1454.2	847.7
80°	748.5	739.9	763.4	755.9	755.9	768.7	760.2	724.9	658.8	610.7	546.6
82.5°	348.0	350.2	350.2	380.1	458.0	534.9	559.4	524.2	465.5	396.1	319.2
85°	33.1	37.4	63.0	97.1	193.2	217.8	218.9	181.5	181.5	143.0	115.3
87.5°	0.0	1.1	1.1	1.1	9.6	26.7	22.4	6.4	3.2	3.2	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



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2
2.5°	568.0	564.8	552.0	539.2	527.4	514.6	502.8	491.2	478.3	468.7	456.9
5°	664.1	640.6	613.9	588.3	562.7	536.0	508.2	483.6	458.0	434.6	412.1
7.5°	761.3	715.4	679.0	633.1	591.5	549.9	511.4	471.9	435.6	401.5	369.4
10°	843.5	787.9	731.3	672.6	612.9	557.3	504.0	456.9	408.9	367.3	327.8
12.5°	910.7	840.3	770.8	697.2	629.9	559.4	493.3	436.7	380.1	333.1	292.6
15°	971.6	890.4	807.2	721.8	636.3	556.3	482.6	412.1	354.4	301.1	255.2
17.5°	1020.7	927.8	833.8	737.8	646.0	552.0	468.7	395.1	327.8	272.2	227.4
20°	1063.4	966.3	864.8	757.0	652.4	550.9	456.9	373.7	304.3	245.5	201.8
22.5°	1102.9	1005.8	896.9	781.5	661.9	549.9	446.3	357.7	284.0	225.3	181.5
25°	1147.7	1045.2	931.0	807.2	679.0	554.1	439.9	344.9	265.8	206.1	165.5
27.5°	1197.9	1090.1	971.6	839.2	701.4	562.7	437.7	331.0	249.8	187.9	152.7
30°	1268.4	1143.5	1012.2	871.2	721.8	572.3	435.6	322.4	233.8	174.0	139.9
32.5°	1330.3	1195.8	1057.0	904.3	744.2	581.9	434.6	310.7	218.9	160.2	130.2
35°	1395.5	1243.8	1095.4	936.3	763.4	592.5	433.5	302.1	205.0	146.3	120.7
37.5°	1452.0	1284.4	1125.3	964.1	784.7	602.2	434.6	294.7	192.2	134.5	112.1
40°	1500.1	1326.1	1158.4	989.7	807.2	617.1	435.6	287.2	179.4	123.8	104.6
42.5°	1542.8	1365.6	1193.6	1018.6	832.8	634.2	442.0	280.8	168.7	114.3	97.1
45°	1575.9	1401.9	1232.1	1059.1	874.4	661.9	453.8	276.5	158.0	105.7	90.7
47.5°	1610.0	1455.2	1297.2	1123.2	935.3	705.7	474.0	275.5	149.5	99.3	85.4
50°	1657.0	1508.6	1354.9	1188.3	990.8	750.6	498.6	276.5	138.8	92.9	80.0
52.5°	1691.2	1563.1	1429.6	1301.5	1123.2	887.2	593.7	295.7	133.5	87.6	73.6
55°	1893.0	1870.6	1873.7	1895.1	1757.4	1509.7	992.9	427.1	156.9	99.3	72.6
57.5°	2669.2	2748.2	2794.1	2793.0	2565.6	2127.9	1333.5	548.8	175.1	115.3	86.4
60°	3689.8	3630.1	3545.7	3337.5	3035.4	2429.0	1491.6	590.4	151.6	91.8	79.0
62.5°	4592.0	4241.9	3931.1	3593.7	3197.7	2533.6	1523.6	587.2	132.4	69.4	55.5
65°	5154.7	4524.8	4022.9	3600.1	3133.6	2446.0	1441.4	539.2	112.1	56.6	45.9
67.5°	5289.2	4372.1	3662.1	3122.9	2617.9	1903.7	1058.1	405.7	87.6	47.0	40.5
69°	4995.6	3886.3	3034.3	2422.6	1904.7	1263.1	654.5	256.2	67.2	42.7	37.4
70°	4595.3	3380.2	2471.6	1944.2	1410.4	887.2	458.0	180.4	54.4	39.5	34.1
72.5°	2956.4	1775.5	1215.0	845.6	581.9	353.4	179.4	81.2	41.6	33.1	27.7
75°	1146.7	656.6	476.2	361.9	282.9	196.5	108.9	52.3	35.2	27.7	21.3
77.5°	564.8	432.4	353.4	242.4	140.9	87.6	58.7	40.5	28.8	20.3	13.9
80°	446.3	296.8	177.3	110.0	83.3	63.0	44.8	33.1	21.3	12.8	9.6
82.5°	228.5	124.9	91.8	74.8	61.9	49.1	36.3	23.5	13.9	8.5	7.5
85°	71.5	52.3	47.0	45.9	42.7	35.2	25.6	14.9	8.5	5.3	5.3
87.5°	5.3	7.5	9.6	7.5	8.5	7.5	9.6	6.4	4.3	4.3	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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2
2.5°	448.4	435.6	423.9	416.4	402.5	397.2	391.8	389.7	380.1	382.3	373.7
5°	391.8	369.4	352.3	335.2	319.2	307.5	297.8	286.2	276.5	272.2	263.7
7.5°	340.6	311.8	289.3	271.2	252.0	237.0	224.2	215.7	207.1	198.6	194.3
10°	295.7	264.8	239.1	221.0	202.9	190.1	180.4	174.0	168.7	165.5	164.4
12.5°	254.1	224.2	200.7	184.7	170.9	164.4	160.2	156.9	155.9	154.8	154.8
15°	222.1	192.2	174.0	162.3	155.9	152.7	151.6	149.5	147.3	146.3	146.3
17.5°	192.2	169.7	156.9	150.5	147.3	145.2	143.0	140.9	138.8	137.7	137.7
20°	171.9	153.7	147.3	143.0	139.9	137.7	134.5	132.4	131.3	130.2	129.2
22.5°	155.9	144.1	139.9	136.6	132.4	129.2	127.1	124.9	122.8	121.7	120.7
25°	144.1	136.6	133.5	129.2	124.9	121.7	118.5	115.3	113.2	112.1	110.0
27.5°	135.6	130.2	126.0	120.7	116.4	113.2	110.0	106.8	104.6	102.5	101.4
30°	128.1	122.8	117.4	113.2	107.8	104.6	100.4	97.1	96.1	94.0	91.8
32.5°	120.7	115.3	110.0	104.6	99.3	95.0	92.9	88.6	86.4	85.4	83.3
35°	112.1	106.8	100.4	96.1	90.7	86.4	83.3	80.0	77.9	75.8	74.8
37.5°	104.6	98.2	91.8	86.4	82.2	77.9	74.8	71.5	69.4	67.2	66.2
40°	96.1	89.7	83.3	77.9	73.6	70.5	67.2	64.1	61.9	60.8	60.8
42.5°	88.6	81.2	74.8	70.5	67.2	63.0	59.8	56.6	55.5	54.4	55.5
45°	81.2	73.6	68.4	64.1	60.8	56.6	53.4	51.2	50.2	51.2	52.3
47.5°	74.8	67.2	61.9	58.7	55.5	52.3	49.1	47.0	47.0	49.1	51.2
50°	68.4	60.8	56.6	54.4	51.2	48.0	43.8	42.7	43.8	45.9	48.0
52.5°	61.9	53.4	50.2	49.1	45.9	42.7	39.5	38.4	39.5	41.6	40.5
55°	55.5	47.0	45.9	44.8	41.6	37.4	34.1	34.1	34.1	33.1	31.0
57.5°	53.4	41.6	40.5	39.5	36.3	32.0	29.9	27.7	26.7	23.5	22.4
60°	55.5	37.4	37.4	35.2	32.0	27.7	24.6	21.3	19.2	17.1	17.1
62.5°	44.8	34.1	33.1	31.0	26.7	22.4	19.2	16.0	14.9	13.9	13.9
65°	36.3	31.0	28.8	25.6	22.4	18.2	14.9	12.8	11.8	11.8	12.8
67.5°	33.1	27.7	24.6	21.3	18.2	13.9	11.8	10.7	10.7	11.8	11.8
69°	31.0	25.6	22.4	19.2	16.0	12.8	10.7	10.7	10.7	10.7	11.8
70°	28.8	24.6	21.3	18.2	13.9	10.7	9.6	9.6	10.7	10.7	11.8
72.5°	22.4	19.2	18.2	14.9	10.7	9.6	8.5	9.6	9.6	10.7	10.7
75°	17.1	13.9	13.9	11.8	8.5	7.5	7.5	8.5	8.5	9.6	9.6
77.5°	11.8	9.6	9.6	8.5	7.5	6.4	6.4	7.5	8.5	8.5	9.6
80°	8.5	7.5	6.4	7.5	6.4	5.3	6.4	7.5	7.5	8.5	8.5
82.5°	6.4	6.4	6.4	6.4	5.3	5.3	6.4	6.4	7.5	8.5	8.5
85°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	6.4	6.4	7.5	7.5
87.5°	3.2	3.2	3.2	4.3	4.3	5.3	5.3	5.3	5.3	6.4	6.4
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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CATALOG NUMBER: LDRL-SL4-F04-E-HSS

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	492.2	492.2	492.2	492.2
2.5°	371.6	370.5	366.2	367.3
5°	260.5	254.1	258.4	257.3
7.5°	191.1	190.1	188.9	191.1
10°	163.3	163.3	162.3	163.3
12.5°	153.7	153.7	153.7	153.7
15°	146.3	146.3	145.2	145.2
17.5°	137.7	137.7	137.7	136.6
20°	129.2	128.1	128.1	128.1
22.5°	119.6	118.5	118.5	118.5
25°	110.0	108.9	108.9	108.9
27.5°	100.4	99.3	98.2	98.2
30°	90.7	89.7	88.6	88.6
32.5°	81.2	80.0	79.0	79.0
35°	72.6	72.6	71.5	70.5
37.5°	65.1	65.1	65.1	65.1
40°	59.8	60.8	60.8	60.8
42.5°	56.6	57.7	58.7	59.8
45°	54.4	56.6	57.7	57.7
47.5°	53.4	54.4	55.5	55.5
50°	49.1	48.0	48.0	48.0
52.5°	39.5	37.4	36.3	35.2
55°	28.8	27.7	25.6	25.6
57.5°	20.3	20.3	19.2	19.2
60°	16.0	16.0	14.9	16.0
62.5°	13.9	13.9	13.9	13.9
65°	12.8	12.8	12.8	12.8
67.5°	12.8	12.8	12.8	12.8
69°	11.8	11.8	11.8	11.8
70°	11.8	11.8	11.8	11.8
72.5°	10.7	10.7	10.7	10.7
75°	9.6	10.7	10.7	10.7
77.5°	9.6	9.6	9.6	9.6
80°	8.5	8.5	9.6	9.6
82.5°	8.5	8.5	8.5	8.5
85°	7.5	7.5	8.5	8.5
87.5°	6.4	6.4	7.5	7.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)