

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: P163235

Luminaire Tested: **LDRL-SL2-E02-E-8030-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P163235
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33726)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-SL2-E02-E-8030-HSS
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 2 W/ SPILL LIGHT CONTROL AND HOUSE SIDE SHIELD
Light Source: (42) 3000K CCT, 80 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3002.1 lumens
Efficiency: N/A
Efficacy: 57.6 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 1' x H: 0.1')
IES Classification: Type II - Short - Non-Cutoff
BUG Rating: B0 - U0 - G1

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

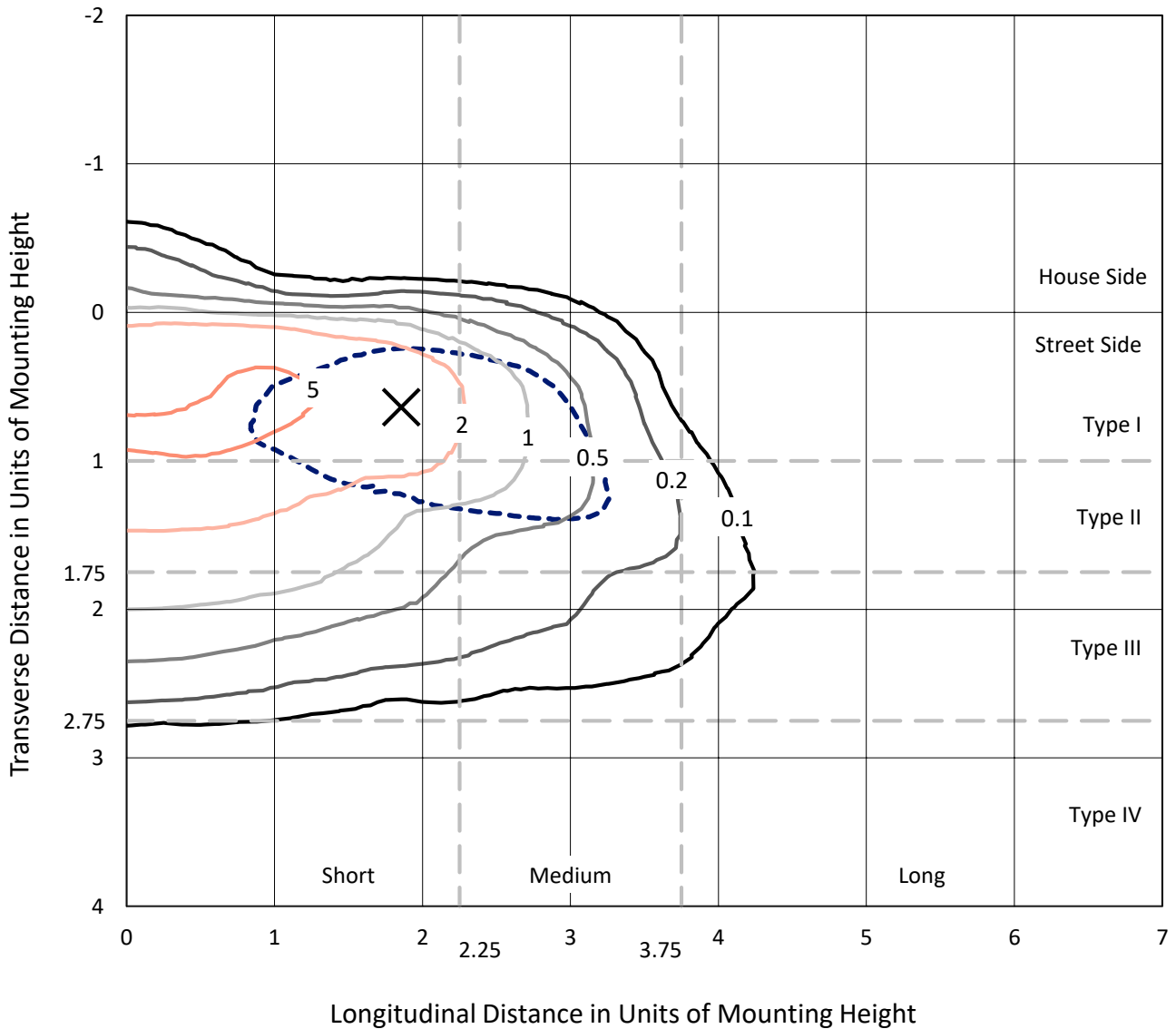


REPORT NUMBER: P163235

CATALOG NUMBER: LDRL-SL2-E02-E-8030-HSS

Iso-Footcandle Lines of Horizontal Illumination

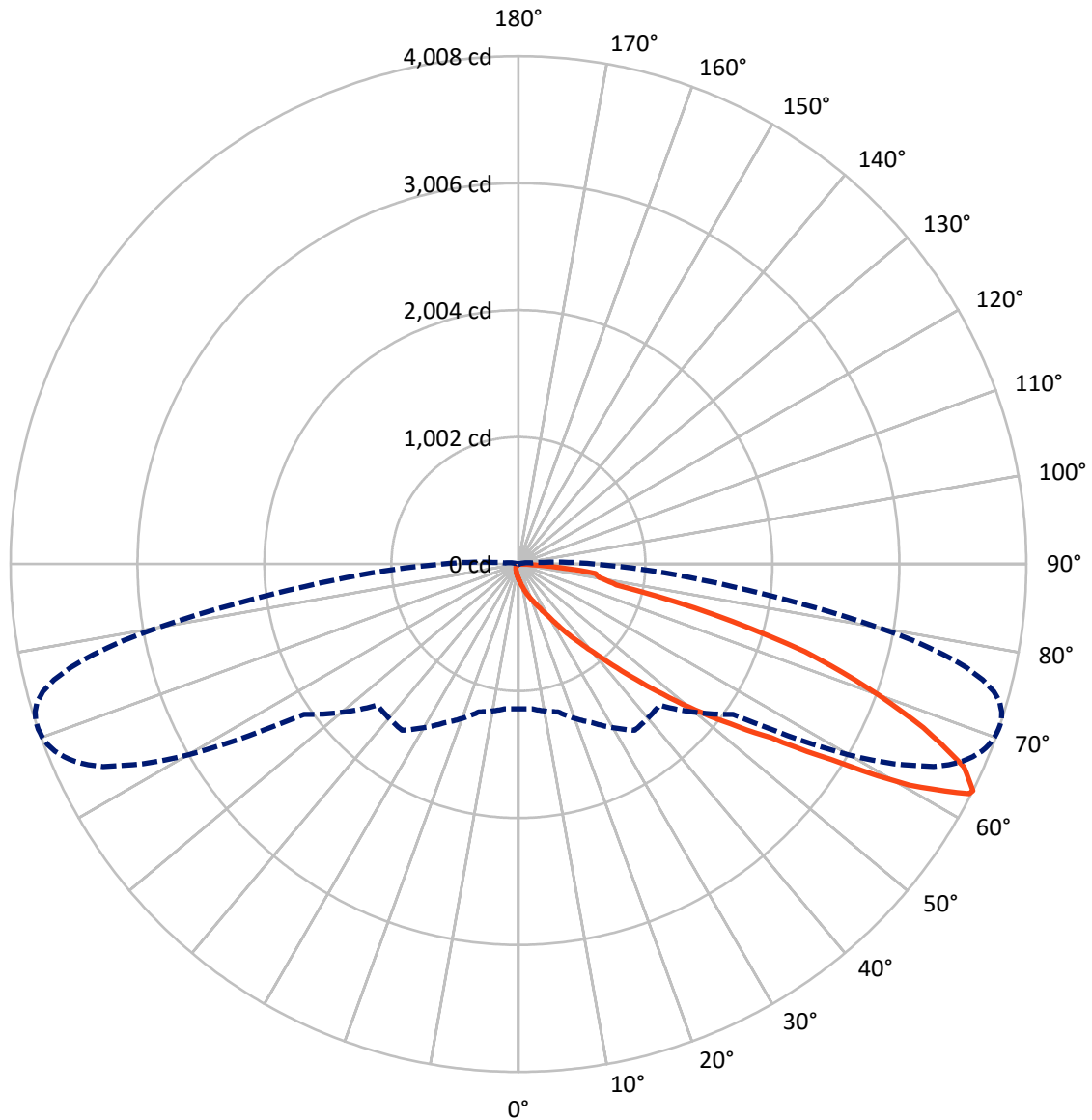
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 6.3 fc
 Type II - Short - Non-Cutoff

REPORT NUMBER: P163235
CATALOG NUMBER: LDRL-SL2-E02-E-8030-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 71-Deg Lateral - - - Horizontal Cone Through 63-Deg Vertical

REPORT NUMBER: P163235

CATALOG NUMBER: LDRL-SL2-E02-E-8030-HSS

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	63.7	0.0	63.7
	% Fixture	2.1	0.0	2.1
Street Side	Lumens	2938.4	0.0	2938.4
	% Fixture	97.9	0.0	97.9
Total	Lumens	3002.1	0.0	3002.1
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	12.7	0.4
10°-20°	49.4	1.6
20°-30°	100.3	3.3
30°-40°	245.0	8.2
40°-50°	547.8	18.2
50°-60°	770.3	25.7
60°-70°	905.8	30.2
70°-80°	327.1	10.9
80°-90°	43.7	1.5
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°	3002.1	100.0
0°-180°	3002.1	100.0



REPORT NUMBER: P163235

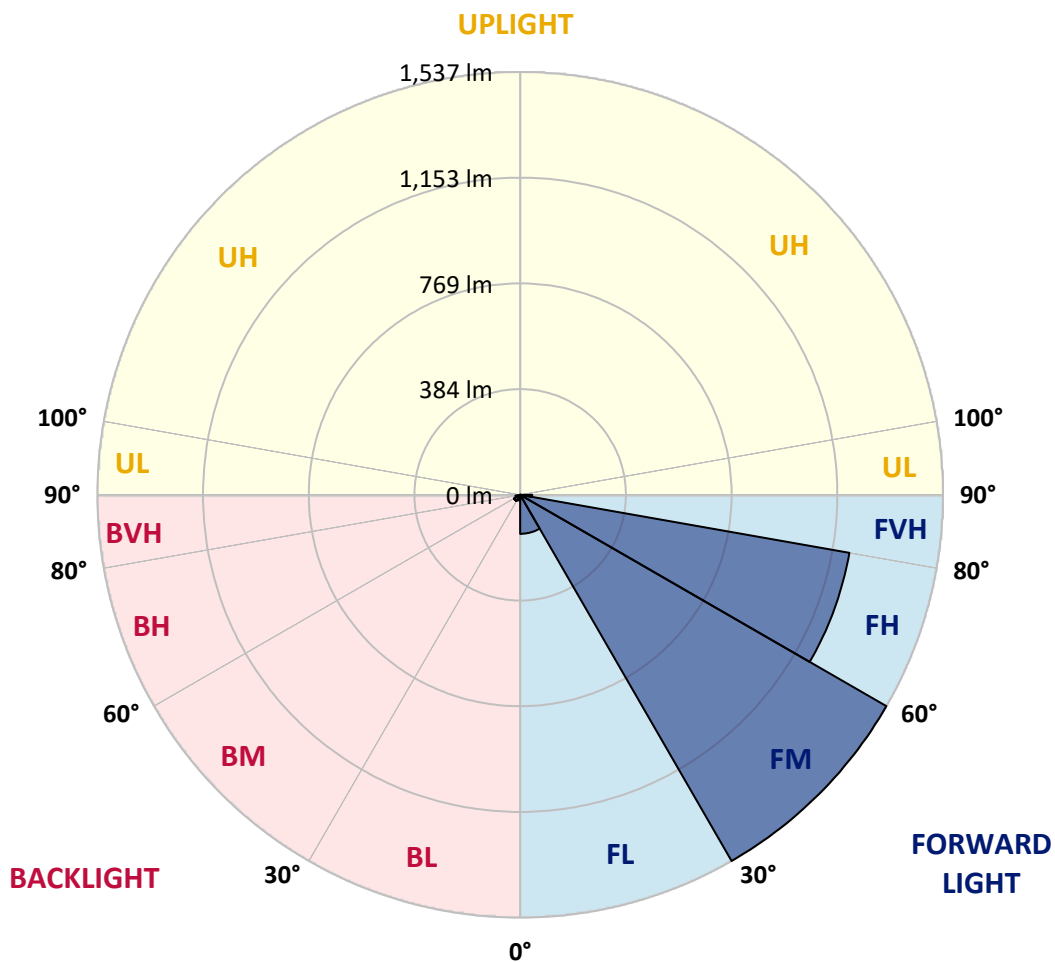
CATALOG NUMBER: LDRL-SL2-E02-E-8030-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	141.9	4.7			
FM (30°-60°)	1537.4	51.2			
FH (60°-80°)	1215.5	40.5			G1/1800
FVH (80°-90°)	43.6	1.5			G1/100
BL (0°-30°)	20.5	0.7	B0/110		
BM (30°-60°)	25.7	0.9	B0/220		
BH (60°-80°)	17.5	0.6	B0/110		G0/110
BVH (80°-90°)	0.1	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B0-U0-G1

Type II Short





REPORT NUMBER: P163235

CATALOG NUMBER: LDRL-SL2-E02-E-8030-HSS

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	56°	57°	58°	59°
0°	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2
2.5°	150.6	152.3	151.2	148.4	145.2	140.8	137.0	137.0	136.5	134.8	135.3
5°	197.6	198.1	195.9	189.4	183.4	174.1	163.7	162.7	161.5	159.9	159.4
7.5°	243.4	245.6	243.4	236.3	224.3	210.1	193.7	192.1	188.9	188.9	186.7
10°	290.4	290.4	288.2	280.0	269.1	248.9	228.1	225.4	221.6	220.5	217.2
12.5°	323.7	323.7	322.5	318.2	309.4	291.4	266.3	263.6	258.7	257.0	253.2
15°	336.8	336.8	337.3	341.1	341.6	333.5	307.3	305.1	300.2	295.8	294.2
17.5°	344.9	344.4	344.4	349.9	359.7	365.1	348.2	346.0	340.6	338.4	332.9
20°	362.9	361.8	358.6	358.6	367.8	387.0	387.0	386.4	380.4	378.8	376.0
22.5°	389.7	388.6	378.8	370.6	374.9	399.0	421.4	420.2	418.1	415.9	414.2
25°	433.3	429.5	412.6	388.6	384.8	410.4	447.6	450.3	451.9	451.9	453.0
27.5°	499.4	494.5	464.5	419.7	402.8	429.0	476.4	481.9	486.8	487.9	492.8
30°	591.1	582.4	539.2	473.7	435.0	456.3	519.0	525.0	532.1	534.3	541.9
32.5°	741.7	736.8	695.3	597.1	514.1	509.8	578.5	586.2	595.5	599.3	608.6
35°	970.9	972.0	938.2	849.8	735.1	675.1	684.9	691.5	694.8	706.2	711.1
37.5°	1126.5	1129.2	1136.9	1101.9	1020.0	958.9	882.0	889.1	872.1	873.8	874.3
40°	1211.6	1220.3	1265.1	1298.9	1292.4	1256.9	1195.3	1199.1	1167.4	1160.3	1125.9
42.5°	1268.4	1279.8	1351.3	1456.1	1509.6	1541.8	1527.6	1526.0	1501.4	1492.1	1463.2
45°	1303.9	1314.2	1404.3	1558.7	1682.1	1776.0	1814.7	1819.1	1798.3	1789.1	1765.0
47.5°	1302.2	1314.2	1410.8	1596.9	1778.7	1928.8	2037.9	2043.4	2055.9	2047.8	2049.4
50°	1230.2	1241.6	1338.8	1532.0	1750.3	1998.6	2198.4	2215.8	2236.0	2249.7	2256.2
52.5°	1142.9	1151.0	1237.3	1420.6	1629.1	1969.7	2293.4	2323.4	2353.4	2379.0	2397.0
55°	1110.7	1119.9	1187.6	1339.9	1532.0	1848.5	2337.6	2381.8	2424.3	2466.3	2500.7
57.5°	1127.6	1136.3	1184.9	1301.7	1474.1	1720.8	2350.1	2418.9	2488.7	2557.0	2624.6
60°	1189.8	1199.1	1240.5	1337.2	1458.9	1647.1	2301.0	2415.1	2531.3	2650.3	2762.2
62.5°	1165.2	1169.1	1230.2	1399.4	1568.0	1584.4	2122.5	2281.9	2459.3	2642.6	2823.3
63°	1141.8	1146.1	1208.4	1382.5	1601.3	1575.1	2067.4	2235.5	2422.7	2620.3	2816.7
65°	1035.3	1035.9	1083.4	1220.9	1564.2	1591.5	1821.8	1982.3	2197.3	2434.2	2682.5
67.5°	772.8	769.0	814.9	919.6	1228.0	1592.0	1563.6	1653.7	1803.2	2013.4	2236.0
70°	274.0	268.0	342.2	487.4	765.2	1302.2	1343.7	1349.7	1391.2	1504.7	1644.4
72.5°	89.0	90.6	109.1	178.5	352.6	876.5	1216.5	1198.0	1187.1	1186.5	1205.1
75°	35.5	36.0	43.7	79.1	158.3	422.4	1065.4	1075.7	1079.5	1085.0	1091.0
77.5°	16.9	18.6	24.5	44.2	78.6	209.0	762.5	850.3	900.5	939.3	962.8
80°	6.0	7.1	13.6	27.3	36.6	96.0	401.7	484.7	558.3	653.3	735.1
82.5°	0.0	0.0	2.7	19.1	20.2	38.8	164.8	193.2	221.0	286.5	367.8
85°	0.0	0.0	0.0	5.5	6.0	6.5	55.7	67.1	75.3	87.9	101.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.6	3.3	8.2	12.6
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: P163235

CATALOG NUMBER: LDRL-SL2-E02-E-8030-HSS

CANDELA DISTRIBUTION (continued):

	60°	61°	62°	64°	65°	66°	67°	68°	69°	70°	71°
0°	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2
2.5°	134.3	133.7	133.7	132.6	132.1	131.0	130.4	128.8	128.3	128.3	128.3
5°	158.8	156.6	155.5	152.8	151.2	150.6	147.9	146.8	145.2	145.7	143.0
7.5°	186.1	182.3	180.6	176.8	175.8	171.9	170.8	168.1	166.5	163.2	162.1
10°	216.1	211.2	208.5	202.5	200.8	198.1	194.8	191.6	188.9	185.6	183.9
12.5°	250.5	246.1	243.9	235.8	232.0	228.1	223.8	219.4	215.0	212.3	208.5
15°	290.9	283.8	281.6	274.0	267.4	262.5	256.5	251.1	247.8	242.3	238.5
17.5°	330.7	323.7	322.0	310.6	303.5	300.2	293.6	286.5	280.5	275.1	269.1
20°	370.6	365.7	361.3	350.4	342.8	337.3	328.5	321.5	316.6	308.9	301.3
22.5°	410.4	405.5	402.2	390.8	383.7	376.0	368.4	360.8	353.7	344.4	335.6
25°	451.4	448.1	446.4	436.1	429.5	422.4	414.8	406.1	397.3	387.0	377.7
27.5°	493.9	495.0	491.7	489.5	482.5	477.6	465.5	459.5	453.0	440.4	429.0
30°	548.0	551.2	550.1	551.8	547.4	544.1	534.9	527.2	519.6	507.6	494.5
32.5°	616.2	620.5	622.7	628.7	626.5	625.5	622.7	611.8	606.4	585.6	580.2
35°	721.5	719.3	728.6	733.5	731.3	730.3	727.0	721.0	714.4	699.7	686.0
37.5°	858.5	860.7	864.0	854.2	847.6	847.0	837.2	831.2	821.9	805.6	789.2
40°	1109.5	1095.9	1080.6	1039.2	1021.2	1010.8	981.9	973.7	957.8	935.4	918.5
42.5°	1435.9	1422.3	1376.4	1307.1	1270.0	1218.7	1195.3	1166.3	1143.9	1107.4	1087.7
45°	1760.1	1720.8	1715.4	1634.6	1588.8	1521.1	1479.0	1430.5	1379.7	1331.7	1296.8
47.5°	2033.5	2024.8	1998.1	1949.0	1906.4	1849.6	1795.6	1720.8	1668.4	1600.2	1537.4
50°	2252.4	2251.9	2242.0	2213.7	2178.2	2132.4	2084.9	2021.6	1962.1	1878.6	1811.4
52.5°	2416.1	2424.9	2428.2	2419.4	2405.8	2365.4	2341.4	2288.4	2238.2	2167.3	2094.7
55°	2536.2	2568.4	2584.8	2603.3	2599.5	2585.3	2584.2	2549.9	2526.9	2470.7	2419.4
57.5°	2684.7	2737.6	2788.4	2878.4	2881.7	2913.4	2929.7	2946.1	2950.5	2928.1	2911.2
60°	2873.5	2981.6	3077.6	3265.9	3315.0	3392.5	3442.7	3497.3	3543.7	3547.5	3546.4
62.5°	3006.7	3173.1	3328.1	3607.6	3703.1	3792.6	3859.7	3912.7	3944.8	3977.6	3992.9
63°	3010.5	3192.8	3357.6	3645.8	3746.2	3831.3	3895.2	3944.3	3978.2	3997.8	4007.6
65°	2918.3	3139.3	3335.8	3622.8	3717.3	3803.0	3836.2	3868.4	3884.8	3892.5	3863.6
67.5°	2473.5	2689.6	2918.8	3239.7	3320.5	3423.1	3450.4	3466.8	3474.4	3472.8	3448.2
70°	1849.6	2030.8	2285.7	2652.5	2759.4	2859.8	2922.1	2948.8	2957.5	2954.8	2918.3
72.5°	1291.3	1397.7	1607.9	2016.1	2161.8	2290.6	2367.6	2407.4	2415.6	2399.2	2365.4
75°	1084.5	1089.9	1137.4	1360.6	1497.1	1634.6	1721.4	1746.5	1730.1	1680.5	1594.2
77.5°	968.2	980.2	980.2	1013.5	1040.2	1078.5	1086.7	1025.5	954.6	862.9	788.7
80°	812.1	854.2	883.6	908.2	910.9	903.3	883.1	848.7	794.1	724.2	646.7
82.5°	493.4	576.3	610.2	736.8	799.0	841.1	837.8	791.9	750.4	677.9	611.8
85°	124.4	134.3	145.7	189.4	212.3	259.2	288.7	302.4	307.3	282.2	255.4
87.5°	12.0	8.2	13.6	10.4	14.7	10.9	14.7	13.6	16.9	18.0	19.6
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: P163235

CATALOG NUMBER: LDRL-SL2-E02-E-8030-HSS

CANDELA DISTRIBUTION (continued):

	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°	82°
0°	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2
2.5°	127.2	126.6	126.1	125.5	125.0	124.4	123.4	123.4	122.2	121.7	121.2
5°	141.4	140.3	139.7	138.6	137.0	135.9	134.3	132.1	130.4	129.9	128.8
7.5°	159.4	156.6	155.5	153.9	151.7	148.4	146.3	144.6	141.9	140.3	137.0
10°	179.6	176.8	173.6	170.3	167.0	163.2	160.5	158.3	153.9	151.7	147.9
12.5°	205.2	200.3	196.5	192.1	187.7	183.4	180.1	173.6	169.7	164.8	161.5
15°	231.4	227.0	222.7	217.2	210.7	203.6	200.3	194.3	189.4	181.7	177.4
17.5°	263.1	254.9	248.3	241.8	235.8	229.2	222.7	213.4	206.3	199.8	191.0
20°	294.2	284.4	277.3	268.5	259.8	249.4	241.8	235.2	225.4	216.7	207.4
22.5°	327.5	317.6	306.2	297.5	285.4	277.3	266.9	256.0	246.1	234.7	223.2
25°	367.8	357.5	344.4	332.9	319.3	307.8	295.3	282.7	270.7	257.6	242.9
27.5°	417.5	406.6	392.4	378.8	360.8	346.6	334.6	317.6	302.4	286.0	269.1
30°	480.3	468.3	450.8	431.2	413.2	397.3	380.4	358.0	341.1	321.5	299.6
32.5°	562.1	548.0	524.5	505.9	483.6	462.8	439.3	417.0	393.0	367.3	342.2
35°	665.3	652.2	624.9	597.6	573.1	548.5	519.0	493.4	459.5	428.4	396.2
37.5°	772.3	748.8	723.7	694.2	663.6	634.2	598.2	562.7	523.9	490.1	449.7
40°	894.5	866.1	845.4	813.7	770.6	728.6	695.3	651.1	602.5	557.2	509.8
42.5°	1062.1	1030.4	993.3	945.3	914.2	865.1	821.9	769.6	705.7	654.9	597.6
45°	1255.8	1212.7	1176.7	1130.3	1092.6	1031.5	981.3	911.4	847.6	781.0	711.1
47.5°	1476.9	1423.4	1371.0	1325.1	1265.1	1205.1	1141.2	1067.0	985.1	912.0	829.0
50°	1730.7	1654.8	1582.2	1523.3	1440.9	1371.5	1302.2	1218.7	1128.1	1044.1	949.7
52.5°	2012.8	1924.9	1828.9	1738.3	1642.8	1553.8	1470.3	1374.3	1273.3	1170.7	1065.4
55°	2353.4	2287.4	2174.4	2059.2	1931.5	1812.5	1705.0	1586.0	1463.2	1328.4	1217.6
57.5°	2886.6	2854.4	2760.0	2644.8	2478.4	2333.7	2151.4	2005.7	1827.8	1642.2	1499.2
60°	3609.2	3569.4	3516.4	3423.1	3291.0	3094.5	2893.7	2667.2	2396.5	2139.4	1895.5
62.5°	3994.5	3980.3	3937.2	3872.8	3749.5	3594.5	3392.0	3143.1	2837.5	2525.3	2214.2
63°	4006.0	3988.0	3950.9	3885.4	3776.8	3626.7	3428.0	3186.2	2887.2	2569.0	2251.3
65°	3851.0	3843.9	3806.2	3734.7	3660.5	3545.9	3392.0	3184.0	2933.0	2632.3	2316.3
67.5°	3415.5	3394.2	3336.3	3314.5	3262.6	3183.0	3065.6	2922.6	2743.1	2506.8	2233.8
70°	2888.8	2857.1	2784.5	2745.8	2682.5	2632.3	2560.8	2458.7	2347.9	2183.1	1979.5
72.5°	2330.5	2265.0	2198.4	2097.4	2009.0	1919.5	1840.3	1768.3	1646.6	1580.0	1425.6
75°	1513.4	1394.4	1280.4	1127.6	990.0	868.3	749.9	689.8	564.9	514.1	441.5
77.5°	718.2	651.7	562.1	492.8	404.4	330.2	269.6	202.5	158.8	124.4	95.0
80°	579.6	523.4	469.4	406.6	340.0	271.3	207.9	155.5	110.3	76.4	54.0
82.5°	516.9	455.7	389.1	346.0	300.7	246.1	202.0	164.8	121.7	89.0	60.6
85°	200.8	169.2	130.4	106.4	82.9	68.2	61.7	42.6	33.3	26.2	20.2
87.5°	17.5	14.2	11.4	7.6	8.2	4.4	4.9	3.3	2.7	2.7	2.2
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: P163235

CATALOG NUMBER: LDRL-SL2-E02-E-8030-HSS

CANDELA DISTRIBUTION (continued):

	83°	84°	85°	86°	87°	88°	89°	90°	95°	105°	115°
0°	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2	115.2
2.5°	120.6	120.1	119.5	118.4	118.4	117.3	116.8	116.2	113.5	107.5	102.6
5°	126.6	125.5	124.4	122.8	121.7	120.1	119.0	117.3	111.3	99.9	90.0
7.5°	135.3	133.2	131.5	128.3	126.6	124.4	122.8	120.1	110.3	92.8	79.1
10°	145.7	141.9	139.2	135.3	132.1	129.3	126.6	122.8	109.1	85.1	69.3
12.5°	158.3	153.9	148.4	144.1	139.7	135.9	132.1	127.2	107.5	78.6	61.7
15°	170.8	164.3	160.5	154.5	148.4	143.0	137.5	133.2	108.1	71.5	55.1
17.5°	185.0	178.5	170.3	163.7	157.2	150.1	143.5	134.8	105.3	66.0	50.2
20°	198.7	189.4	181.7	173.6	164.3	155.5	147.4	139.7	103.1	60.6	45.8
22.5°	213.4	202.5	192.7	182.3	170.8	161.0	151.2	141.4	99.3	55.7	42.0
25°	231.4	218.9	204.7	192.1	180.1	168.1	155.5	143.5	95.5	51.3	39.3
27.5°	253.2	236.9	222.7	206.8	189.9	174.6	161.0	147.9	91.7	48.0	36.6
30°	281.1	262.0	241.8	221.6	203.6	186.1	167.0	150.6	87.9	44.8	33.8
32.5°	318.2	294.2	269.6	246.1	222.1	199.8	179.6	158.3	85.7	42.0	31.1
35°	367.3	336.2	306.2	276.7	247.8	220.5	194.3	170.3	85.7	38.8	27.8
37.5°	413.7	377.7	339.5	302.9	268.5	236.9	205.8	176.8	81.3	36.0	25.1
40°	463.9	420.8	376.0	332.9	291.4	252.2	216.7	183.4	77.5	32.7	22.4
42.5°	540.9	486.3	427.9	377.7	328.0	279.4	235.2	195.9	72.6	29.5	19.6
45°	641.8	572.5	503.8	442.6	379.3	319.8	267.4	218.9	71.5	26.7	16.9
47.5°	749.9	668.0	587.2	509.2	435.0	365.7	302.9	244.5	71.5	24.0	14.7
50°	857.4	754.8	668.6	578.0	494.5	412.6	337.8	271.3	72.0	21.8	12.0
52.5°	954.6	844.9	748.2	643.5	551.2	456.3	374.9	297.5	71.0	19.1	9.8
55°	1089.4	960.6	848.7	733.0	624.9	517.9	425.7	336.8	71.5	16.9	8.2
57.5°	1337.7	1186.5	1051.7	900.0	775.6	637.4	525.6	417.5	78.1	14.2	6.0
60°	1694.1	1497.6	1308.2	1123.2	964.9	800.6	655.5	528.3	91.7	11.4	4.4
62.5°	1933.7	1676.6	1450.7	1246.5	1062.6	890.7	732.4	587.8	101.0	9.3	2.7
63°	1958.2	1692.4	1465.4	1254.7	1067.0	895.1	735.7	592.2	101.5	8.7	2.7
65°	2004.6	1719.7	1473.6	1256.4	1062.6	889.1	733.5	591.6	102.6	7.1	2.2
67.5°	1951.7	1677.7	1426.1	1209.4	1024.4	853.6	706.2	569.8	102.1	4.9	1.6
70°	1745.4	1518.3	1297.3	1095.4	927.3	772.8	642.9	519.6	93.9	3.3	1.1
72.5°	1281.5	1127.0	955.7	809.9	698.6	580.2	495.0	390.2	72.6	2.2	0.5
75°	379.9	346.0	290.9	256.5	226.5	187.2	166.5	129.9	37.1	1.1	0.0
77.5°	75.9	68.8	61.7	56.2	52.9	45.3	43.1	35.5	15.3	0.5	0.0
80°	39.8	32.7	27.8	24.5	21.3	17.5	14.7	12.0	2.7	0.0	0.0
82.5°	38.2	25.7	18.6	15.3	13.1	10.4	8.2	6.0	1.6	0.0	0.0
85°	14.2	10.9	8.2	6.5	5.5	4.9	3.8	3.3	0.0	0.0	0.0
87.5°	2.2	1.6	1.6	1.1	1.1	0.5	0.5	0.5	0.0	0.0	0.0
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: P163235

CATALOG NUMBER: LDRL-SL2-E02-E-8030-HSS

CANDELA DISTRIBUTION (continued):

	125°	135°	145°	155°	165°	175°	180°
0°	115.2	115.2	115.2	115.2	115.2	115.2	115.2
2.5°	97.7	93.3	91.2	88.4	88.4	87.9	89.0
5°	81.3	75.3	71.0	67.7	68.2	66.6	67.1
7.5°	68.8	62.8	58.9	56.7	56.2	55.7	55.7
10°	59.5	54.0	50.7	49.1	48.6	48.6	48.6
12.5°	52.9	47.5	44.8	43.7	43.7	43.1	43.1
15°	47.5	43.1	40.4	39.3	39.3	38.8	39.3
17.5°	43.1	38.8	36.6	35.5	35.5	34.9	34.9
20°	39.3	35.5	33.3	31.7	31.7	31.1	31.7
22.5°	36.0	32.2	29.5	28.4	27.8	27.3	27.8
25°	32.7	28.9	26.2	24.5	24.0	24.0	23.5
27.5°	30.0	26.2	22.9	21.3	20.7	20.7	20.2
30°	27.3	22.9	19.6	18.0	17.5	17.5	17.5
32.5°	24.5	19.6	16.9	15.3	14.7	14.7	14.7
35°	21.8	16.9	14.2	12.6	12.0	12.0	12.0
37.5°	18.6	14.2	10.9	9.8	9.3	8.7	8.7
40°	15.8	10.9	8.2	7.1	6.0	6.0	6.0
42.5°	13.1	8.7	6.0	4.4	3.8	3.3	3.8
45°	10.9	6.5	3.8	2.2	1.6	1.6	1.6
47.5°	8.7	4.4	1.6	0.5	0.5	0.5	0.5
50°	6.5	2.7	0.5	0.0	0.0	0.5	0.5
52.5°	4.9	1.6	0.0	0.0	0.0	0.0	0.0
55°	2.7	0.5	0.0	0.0	0.0	0.0	0.0
57.5°	1.6	0.0	0.0	0.0	0.0	0.0	0.0
60°	1.1	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.5	0.0	0.0	0.0	0.0	0.0	0.0
63°	0.5	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.5	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)