

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: P163302

Luminaire Tested: **LDRC-SL2-F02-E-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P163302
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: LDRC-SL2-F02-E-HSS
Description: RC LED ROADWAY SMALL CUTOFF COBRAHEAD LUMINAIRE
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 2 W/ SPILL LIGHT CONTROL AND HOUSE SIDE SHIELD
Light Source: (14) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2936.5 lumens
Efficiency: N/A
Efficacy: 53.4 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

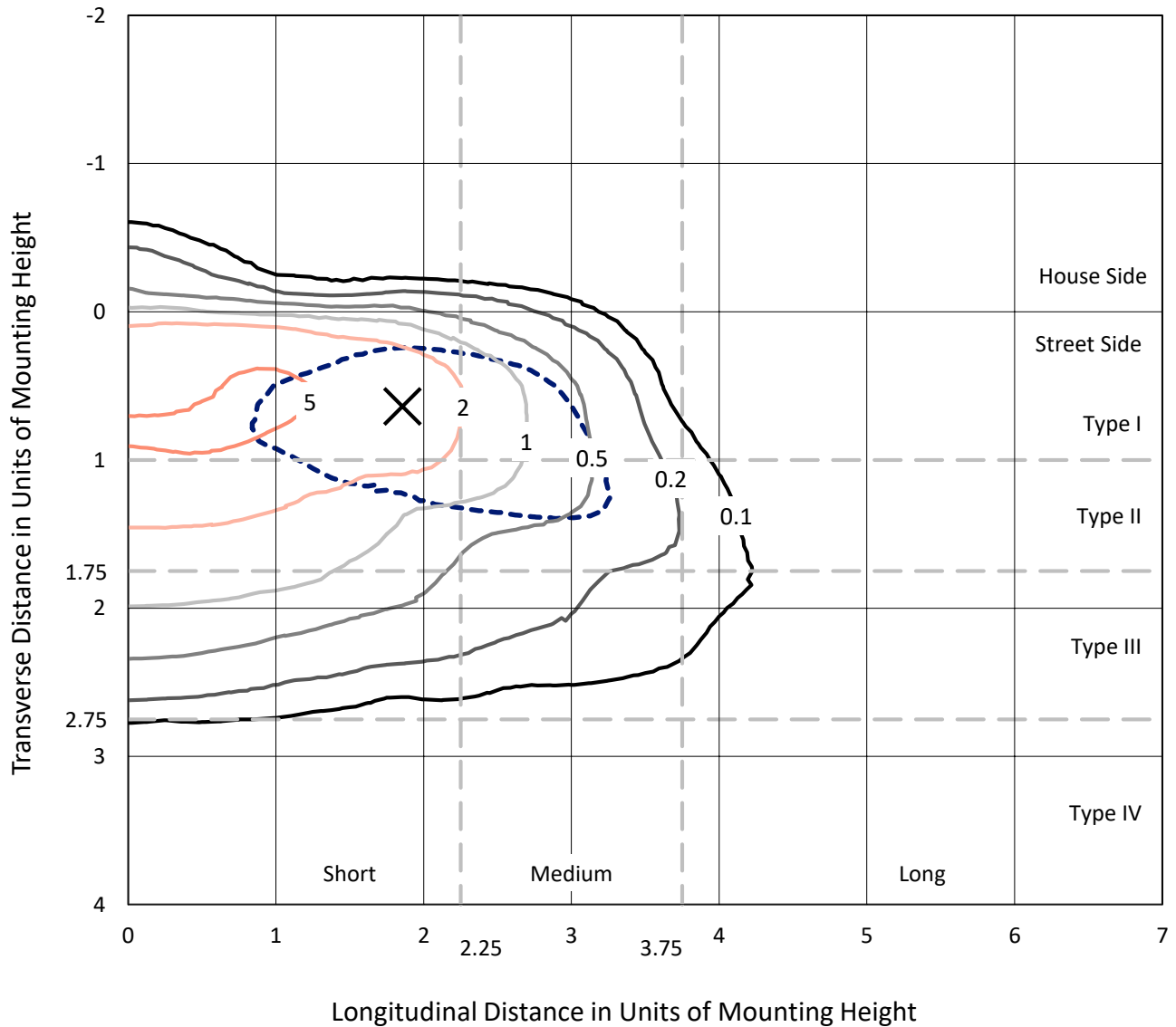
Input Watts (W): 55
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P163302
 CATALOG NUMBER: LDRC-SL2-F02-E-HSS

Iso-Footcandle Lines of Horizontal Illumination

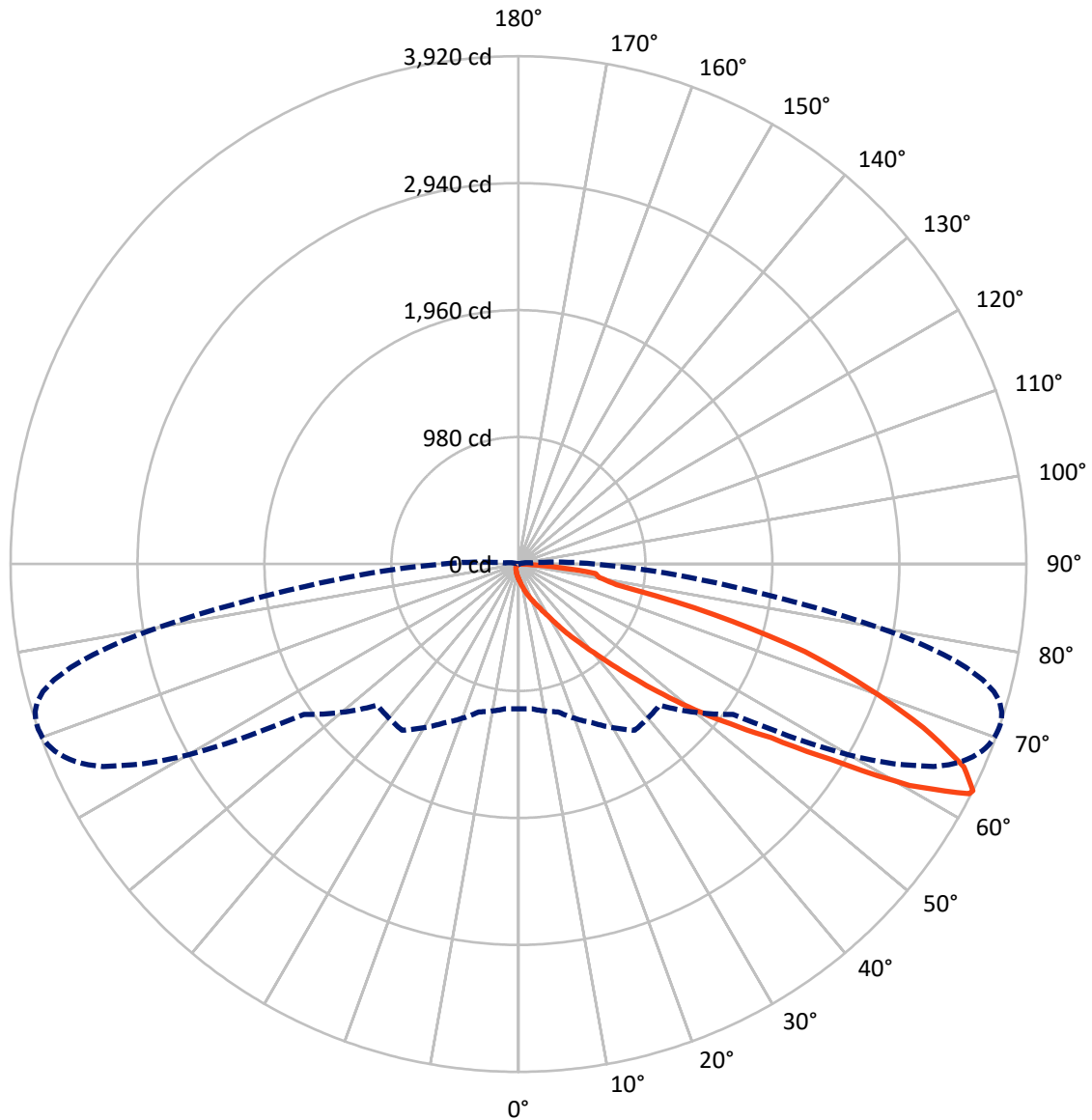
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 6.2 fc
 Type II - Short - Non-Cutoff

REPORT NUMBER: P163302
CATALOG NUMBER: LDRC-SL2-F02-E-HSS

Luminous Intensity Polar Plot



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

REPORT NUMBER: P163302

CATALOG NUMBER: LDRC-SL2-F02-E-HSS

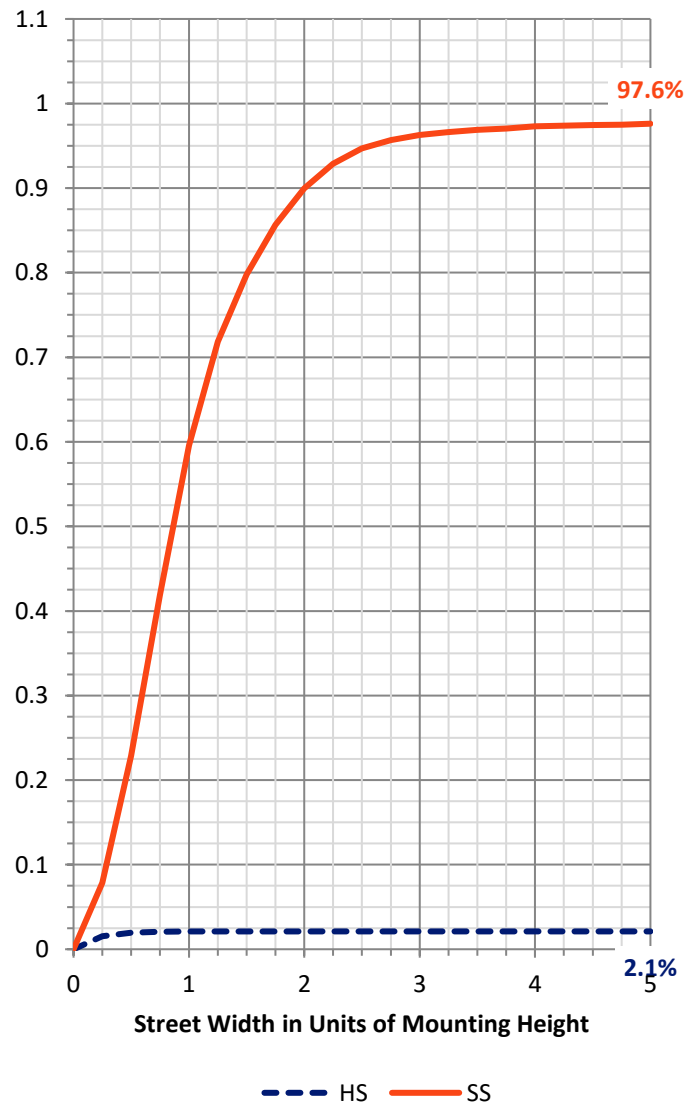
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	62.3	0.0	62.3
	% Fixture	2.1	0.0	2.1
Street Side	Lumens	2874.1	0.0	2874.1
	% Fixture	97.9	0.0	97.9
Total	Lumens	2936.5	0.0	2936.5
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	12.4	0.4
10°-20°	48.3	1.6
20°-30°	98.1	3.3
30°-40°	239.6	8.2
40°-50°	535.9	18.2
50°-60°	753.5	25.7
60°-70°	886.0	30.2
70°-80°	319.9	10.9
80°-90°	42.8	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°	2936.5	100.0
0°-180°	2936.5	100.0



REPORT NUMBER: P163302

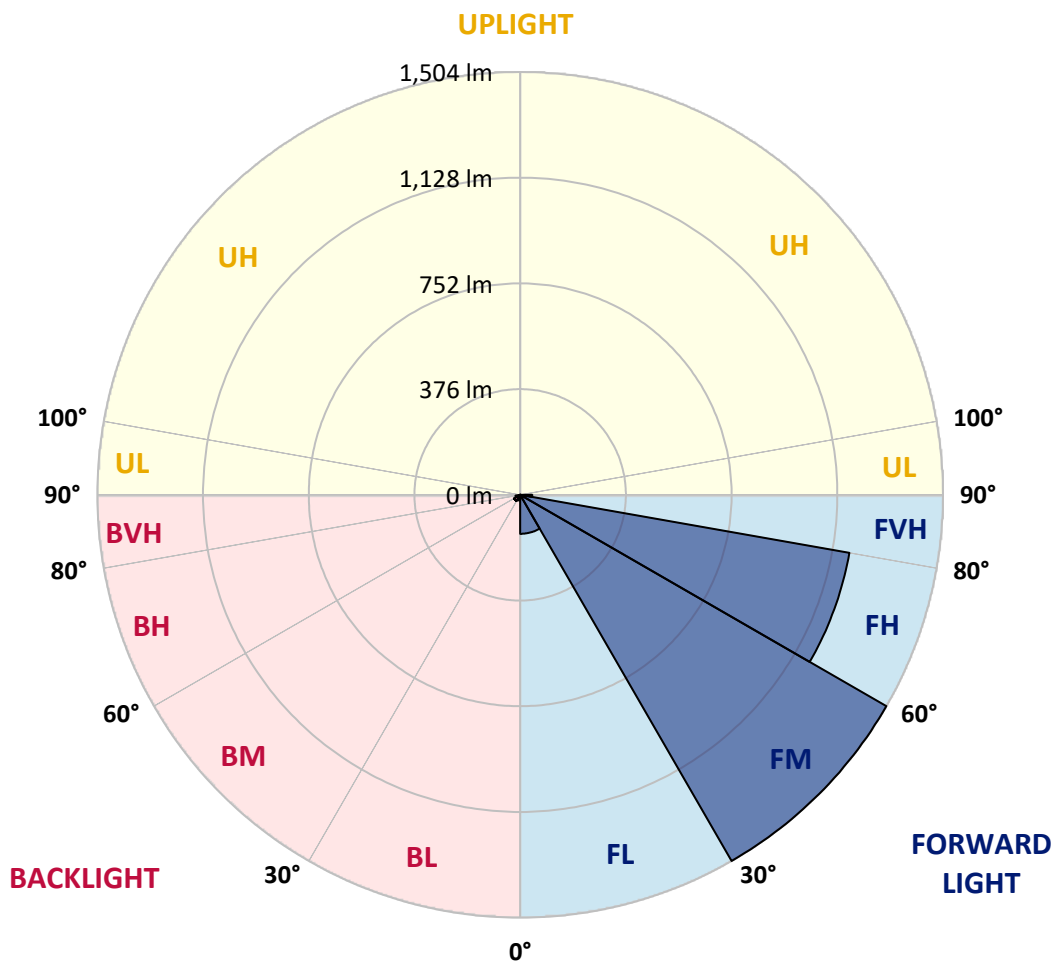
CATALOG NUMBER: LDRC-SL2-F02-E-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	138.8	4.7			
FM (30°-60°)	1503.8	51.2			
FH (60°-80°)	1188.9	40.5			G1/1800
FVH (80°-90°)	42.7	1.5			G1/100
BL (0°-30°)	20.0	0.7	B0/110		
BM (30°-60°)	25.1	0.9	B0/220		
BH (60°-80°)	17.1	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: P163302

CATALOG NUMBER: LDRC-SL2-F02-E-HSS

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	56°	57°	58°	59°
0°	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6
2.5°	147.3	148.9	147.9	145.2	142.0	137.7	134.0	134.0	133.5	131.9	132.4
5°	193.2	193.8	191.7	185.2	179.4	170.3	160.2	159.1	158.0	156.4	155.9
7.5°	238.1	240.2	238.1	231.1	219.4	205.5	189.5	187.9	184.7	184.7	182.6
10°	284.0	284.0	281.9	273.8	263.2	243.4	223.2	220.5	216.7	215.7	212.5
12.5°	316.6	316.6	315.5	311.2	302.7	285.1	260.5	257.8	253.0	251.4	247.7
15°	329.4	329.4	329.9	333.6	334.2	326.2	300.6	298.4	293.6	289.3	287.7
17.5°	337.4	336.8	336.8	342.2	351.8	357.1	340.6	338.5	333.1	331.0	325.7
20°	355.0	353.9	350.7	350.7	359.8	378.5	378.5	378.0	372.1	370.5	367.8
22.5°	381.2	380.1	370.5	362.5	366.7	390.2	412.1	411.0	408.9	406.8	405.2
25°	423.9	420.1	403.6	380.1	376.3	401.4	437.8	440.4	442.0	442.0	443.1
27.5°	488.4	483.7	454.3	410.5	394.0	419.6	466.0	471.4	476.2	477.3	482.0
30°	578.1	569.6	527.4	463.4	425.5	446.3	507.7	513.5	520.5	522.6	530.1
32.5°	725.5	720.7	680.1	584.0	502.9	498.6	565.8	573.3	582.4	586.2	595.2
35°	949.7	950.8	917.7	831.2	719.1	660.4	670.0	676.4	679.6	690.8	695.6
37.5°	1101.8	1104.5	1112.0	1077.8	997.7	938.0	862.7	869.6	853.1	854.7	855.2
40°	1185.1	1193.6	1237.4	1270.5	1264.1	1229.4	1169.1	1172.8	1141.9	1134.9	1101.3
42.5°	1240.6	1251.8	1321.8	1424.3	1476.6	1508.1	1494.2	1492.6	1468.6	1459.5	1431.2
45°	1275.3	1285.5	1373.5	1524.6	1645.3	1737.1	1775.0	1779.3	1759.0	1749.9	1726.4
47.5°	1273.7	1285.5	1379.9	1562.0	1739.8	1886.6	1993.3	1998.7	2010.9	2003.0	2004.5
50°	1203.3	1214.5	1309.5	1498.5	1712.0	1954.9	2150.3	2167.4	2187.1	2200.5	2206.9
52.5°	1117.9	1125.9	1210.2	1389.6	1593.5	1926.6	2243.2	2272.5	2301.9	2327.0	2344.6
55°	1086.4	1095.4	1161.6	1310.6	1498.5	1808.1	2286.4	2329.7	2371.3	2412.4	2446.0
57.5°	1102.9	1111.5	1158.9	1273.2	1441.9	1683.2	2298.7	2366.0	2434.3	2501.0	2567.2
60°	1163.8	1172.8	1213.4	1307.9	1426.9	1611.1	2250.6	2362.2	2475.9	2592.3	2701.7
62.5°	1139.7	1143.5	1203.3	1368.8	1533.7	1549.7	2076.1	2232.0	2405.4	2584.8	2761.5
63°	1116.8	1121.1	1181.9	1352.2	1566.3	1540.7	2022.2	2186.6	2369.7	2562.9	2755.1
65°	1012.7	1013.2	1059.7	1194.2	1530.0	1556.7	1781.9	1938.9	2149.2	2380.9	2623.8
67.5°	755.9	752.2	797.0	899.5	1201.1	1557.2	1529.4	1617.5	1763.8	1969.3	2187.1
70°	268.0	262.1	334.7	476.7	748.4	1273.7	1314.3	1320.2	1360.7	1471.8	1608.5
72.5°	87.0	88.6	106.8	174.5	344.9	857.3	1189.9	1171.8	1161.1	1160.6	1178.7
75°	34.7	35.2	42.7	77.4	154.8	413.2	1042.0	1052.2	1055.9	1061.3	1067.1
77.5°	16.5	18.2	24.0	43.2	76.9	204.5	745.8	831.7	880.8	918.7	941.7
80°	5.9	6.9	13.3	26.7	35.8	93.9	392.9	474.0	546.1	639.0	719.1
82.5°	0.0	0.0	2.7	18.7	19.7	37.9	161.2	189.0	216.2	280.2	359.8
85°	0.0	0.0	0.0	5.3	5.9	6.4	54.5	65.6	73.7	86.0	99.3
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.6	3.2	8.0	12.3
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: P163302

CATALOG NUMBER: LDRC-SL2-F02-E-HSS

CANDELA DISTRIBUTION (continued):

	60°	61°	62°	64°	65°	66°	67°	68°	69°	70°	71°
0°	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6
2.5°	131.3	130.8	130.8	129.7	129.2	128.1	127.6	126.0	125.4	125.4	125.4
5°	155.3	153.2	152.1	149.5	147.9	147.3	144.7	143.6	142.0	142.5	139.9
7.5°	182.0	178.3	176.7	173.0	171.9	168.1	167.1	164.4	162.8	159.6	158.5
10°	211.4	206.6	203.9	198.1	196.4	193.8	190.6	187.4	184.7	181.5	179.9
12.5°	245.0	240.8	238.6	230.6	226.9	223.2	218.9	214.6	210.3	207.7	203.9
15°	284.5	277.6	275.5	268.0	261.6	256.8	250.9	245.6	242.4	237.0	233.3
17.5°	323.5	316.6	315.0	303.8	296.8	293.6	287.2	280.2	274.4	269.1	263.2
20°	362.5	357.7	353.4	342.7	335.3	329.9	321.4	314.4	309.6	302.1	294.7
22.5°	401.4	396.6	393.4	382.2	375.3	367.8	360.3	352.9	345.9	336.8	328.3
25°	441.5	438.3	436.7	426.5	420.1	413.2	405.7	397.2	388.6	378.5	369.4
27.5°	483.1	484.2	481.0	478.8	471.9	467.1	455.4	449.5	443.1	430.8	419.6
30°	536.0	539.2	538.1	539.7	535.4	532.2	523.2	515.7	508.2	496.5	483.7
32.5°	602.7	607.0	609.1	615.0	612.8	611.8	609.1	598.4	593.1	572.8	567.5
35°	705.7	703.6	712.7	717.5	715.3	714.3	711.1	705.2	698.8	684.4	671.0
37.5°	839.7	841.9	845.1	835.5	829.1	828.5	818.9	813.0	804.0	787.9	771.9
40°	1085.3	1071.9	1057.0	1016.4	998.8	988.6	960.4	952.4	936.9	915.0	898.4
42.5°	1404.5	1391.2	1346.3	1278.5	1242.2	1192.1	1169.1	1140.8	1118.9	1083.2	1063.9
45°	1721.6	1683.2	1677.8	1598.8	1554.0	1487.8	1446.7	1399.2	1349.5	1302.5	1268.4
47.5°	1989.1	1980.5	1954.4	1906.3	1864.7	1809.2	1756.3	1683.2	1631.9	1565.2	1503.8
50°	2203.1	2202.6	2193.0	2165.2	2130.5	2085.7	2039.2	1977.3	1919.1	1837.5	1771.8
52.5°	2363.3	2371.8	2375.0	2366.5	2353.1	2313.6	2290.1	2238.4	2189.3	2119.8	2048.9
55°	2480.7	2512.2	2528.3	2546.4	2542.6	2528.8	2527.7	2494.1	2471.7	2416.7	2366.5
57.5°	2625.9	2677.7	2727.4	2815.4	2818.6	2849.6	2865.6	2881.6	2885.9	2864.0	2847.5
60°	2810.6	2916.3	3010.3	3194.5	3242.5	3318.3	3367.4	3420.8	3466.2	3469.9	3468.9
62.5°	2940.9	3103.7	3255.3	3528.7	3622.1	3709.6	3775.3	3827.1	3858.5	3890.6	3905.5
63°	2944.6	3122.9	3284.1	3566.0	3664.2	3747.5	3810.0	3858.0	3891.1	3910.3	3920.0
65°	2854.4	3070.6	3262.8	3543.6	3635.9	3719.7	3752.3	3783.8	3799.8	3807.3	3779.0
67.5°	2419.3	2630.7	2854.9	3168.8	3247.8	3348.2	3374.9	3390.9	3398.4	3396.8	3372.8
70°	1809.2	1986.4	2235.7	2594.4	2699.1	2797.3	2858.1	2884.3	2892.8	2890.2	2854.4
72.5°	1263.1	1367.1	1572.7	1972.0	2114.5	2240.5	2315.8	2354.7	2362.8	2346.7	2313.6
75°	1060.7	1066.1	1112.5	1330.8	1464.3	1598.8	1683.7	1708.3	1692.3	1643.7	1559.3
77.5°	947.0	958.8	958.8	991.3	1017.5	1054.9	1062.9	1003.1	933.7	844.0	771.4
80°	794.4	835.5	864.3	888.3	891.0	883.5	863.7	830.1	776.7	708.4	632.6
82.5°	482.6	563.7	596.8	720.7	781.5	822.7	819.4	774.6	734.0	663.0	598.4
85°	121.7	131.3	142.5	185.2	207.7	253.6	282.4	295.7	300.6	276.0	249.8
87.5°	11.8	8.0	13.3	10.1	14.4	10.7	14.4	13.3	16.5	17.6	19.2
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: P163302

CATALOG NUMBER: LDRC-SL2-F02-E-HSS

CANDELA DISTRIBUTION (continued):

	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°	82°
0°	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6
2.5°	124.4	123.9	123.3	122.8	122.2	121.7	120.7	120.7	119.6	119.0	118.5
5°	138.3	137.2	136.7	135.6	134.0	132.9	131.3	129.2	127.6	127.1	126.0
7.5°	155.9	153.2	152.1	150.5	148.4	145.2	143.1	141.5	138.8	137.2	134.0
10°	175.6	173.0	169.8	166.6	163.4	159.6	156.9	154.8	150.5	148.4	144.7
12.5°	200.7	195.9	192.2	187.9	183.6	179.4	176.2	169.8	166.0	161.2	158.0
15°	226.4	222.1	217.8	212.5	206.1	199.1	195.9	190.0	185.2	177.8	173.5
17.5°	257.3	249.3	242.9	236.5	230.6	224.2	217.8	208.7	201.8	195.4	186.8
20°	287.7	278.1	271.2	262.6	254.1	244.0	236.5	230.1	220.5	211.9	202.8
22.5°	320.3	310.7	299.5	290.9	279.2	271.2	261.0	250.4	240.8	229.6	218.3
25°	359.8	349.7	336.8	325.7	312.3	301.1	288.8	276.5	264.8	252.0	237.6
27.5°	408.4	397.7	383.8	370.5	352.9	339.0	327.2	310.7	295.7	279.7	263.2
30°	469.8	458.0	441.0	421.7	404.1	388.6	372.1	350.2	333.6	314.4	293.1
32.5°	549.8	536.0	513.0	494.9	473.0	452.7	429.7	407.8	384.4	359.3	334.7
35°	650.7	637.9	611.3	584.5	560.5	536.5	507.7	482.6	449.5	419.1	387.6
37.5°	755.4	732.4	707.9	679.0	649.1	620.3	585.1	550.4	512.5	479.4	439.9
40°	875.0	847.2	826.9	795.9	753.8	712.7	680.1	636.9	589.4	545.0	498.6
42.5°	1038.8	1007.9	971.6	924.6	894.2	846.1	804.0	752.7	690.2	640.6	584.5
45°	1228.3	1186.2	1150.9	1105.6	1068.7	1009.0	959.8	891.5	829.1	763.9	695.6
47.5°	1444.6	1392.2	1341.0	1296.1	1237.4	1178.7	1116.2	1043.7	963.6	892.0	810.9
50°	1692.8	1618.6	1547.6	1489.9	1409.3	1341.5	1273.7	1192.1	1103.4	1021.2	928.9
52.5°	1968.8	1882.8	1788.9	1700.3	1606.8	1519.8	1438.2	1344.2	1245.4	1145.1	1042.0
55°	2301.9	2237.3	2126.8	2014.1	1889.2	1772.9	1667.7	1551.3	1431.2	1299.3	1191.0
57.5°	2823.5	2792.0	2699.6	2587.0	2424.1	2282.7	2104.4	1961.8	1787.8	1606.3	1466.4
60°	3530.2	3491.3	3439.5	3348.2	3219.0	3026.8	2830.4	2608.9	2344.1	2092.6	1854.0
62.5°	3907.1	3893.2	3851.1	3788.1	3667.4	3515.8	3317.8	3074.4	2775.4	2470.0	2165.7
63°	3918.3	3900.7	3864.4	3800.4	3694.1	3547.3	3353.0	3116.5	2824.0	2512.8	2202.1
65°	3766.7	3759.8	3723.0	3653.0	3580.4	3468.3	3317.8	3114.4	2868.8	2574.7	2265.6
67.5°	3340.7	3319.9	3263.3	3242.0	3191.2	3113.3	2998.5	2858.7	2683.1	2451.9	2185.0
70°	2825.6	2794.6	2723.6	2685.7	2623.8	2574.7	2504.7	2404.9	2296.5	2135.3	1936.2
72.5°	2279.5	2215.4	2150.3	2051.5	1965.0	1877.5	1800.1	1729.6	1610.6	1545.4	1394.4
75°	1480.3	1363.9	1252.4	1102.9	968.4	849.3	733.5	674.8	552.5	502.9	431.9
77.5°	702.5	637.4	549.8	482.0	395.6	323.0	263.7	198.1	155.3	121.7	92.9
80°	566.9	512.0	459.1	397.7	332.6	265.3	203.4	152.1	107.8	74.7	52.8
82.5°	505.6	445.8	380.6	338.5	294.2	240.8	197.5	161.2	119.0	87.0	59.2
85°	196.4	165.5	127.6	104.1	81.1	66.7	60.3	41.6	32.6	25.6	19.7
87.5°	17.1	13.9	11.2	7.5	8.0	4.3	4.8	3.2	2.7	2.7	2.1
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: P163302

CATALOG NUMBER: LDRC-SL2-F02-E-HSS

CANDELA DISTRIBUTION (continued):

	83°	84°	85°	86°	87°	88°	89°	90°	95°	105°	115°
0°	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6	112.6
2.5°	118.0	117.5	116.9	115.8	115.8	114.8	114.3	113.7	111.0	105.2	100.4
5°	123.9	122.8	121.7	120.1	119.0	117.5	116.4	114.8	108.9	97.7	88.1
7.5°	132.4	130.3	128.6	125.4	123.9	121.7	120.1	117.5	107.8	90.7	77.4
10°	142.5	138.8	136.1	132.4	129.2	126.5	123.9	120.1	106.8	83.3	67.8
12.5°	154.8	150.5	145.2	140.9	136.7	132.9	129.2	124.4	105.2	76.9	60.3
15°	167.1	160.7	156.9	151.1	145.2	139.9	134.5	130.3	105.7	69.9	53.9
17.5°	181.0	174.5	166.6	160.2	153.7	146.8	140.4	131.9	103.0	64.6	49.1
20°	194.3	185.2	177.8	169.8	160.7	152.1	144.1	136.7	100.9	59.2	44.8
22.5°	208.7	198.1	188.5	178.3	167.1	157.5	147.9	138.3	97.1	54.5	41.1
25°	226.4	214.1	200.2	187.9	176.2	164.4	152.1	140.4	93.4	50.2	38.4
27.5°	247.7	231.7	217.8	202.3	185.8	170.8	157.5	144.7	89.7	47.0	35.8
30°	274.9	256.2	236.5	216.7	199.1	182.0	163.4	147.3	86.0	43.8	33.1
32.5°	311.2	287.7	263.7	240.8	217.3	195.4	175.6	154.8	83.8	41.1	30.4
35°	359.3	328.9	299.5	270.6	242.4	215.7	190.0	166.6	83.8	37.9	27.2
37.5°	404.6	369.4	332.1	296.3	262.6	231.7	201.3	173.0	79.5	35.2	24.6
40°	453.8	411.6	367.8	325.7	285.1	246.6	211.9	179.4	75.8	32.0	21.9
42.5°	529.0	475.6	418.5	369.4	320.8	273.3	230.1	191.7	71.0	28.8	19.2
45°	627.8	560.0	492.7	432.9	371.0	312.8	261.6	214.1	69.9	26.2	16.5
47.5°	733.5	653.4	574.4	498.1	425.5	357.7	296.3	239.2	69.9	23.5	14.4
50°	838.7	738.3	653.9	565.3	483.7	403.6	330.4	265.3	70.5	21.4	11.8
52.5°	933.7	826.4	731.9	629.4	539.2	446.3	366.7	290.9	69.4	18.7	9.6
55°	1065.5	939.5	830.1	717.0	611.3	506.6	416.4	329.4	69.9	16.5	8.0
57.5°	1308.4	1160.6	1028.7	880.3	758.6	623.5	514.1	408.4	76.3	13.9	5.9
60°	1657.0	1464.8	1279.6	1098.6	943.8	783.1	641.1	516.7	89.7	11.2	4.3
62.5°	1891.4	1639.9	1418.9	1219.3	1039.4	871.2	716.4	574.9	98.8	9.1	2.7
63°	1915.4	1655.4	1433.3	1227.3	1043.7	875.5	719.6	579.2	99.3	8.6	2.7
65°	1960.8	1682.1	1441.4	1228.9	1039.4	869.6	717.5	578.7	100.4	6.9	2.1
67.5°	1909.0	1641.0	1394.9	1183.0	1002.0	834.9	690.8	557.3	99.8	4.8	1.6
70°	1707.2	1485.1	1268.9	1071.4	907.0	755.9	628.9	508.2	91.8	3.2	1.1
72.5°	1253.4	1102.4	934.8	792.2	683.3	567.5	484.2	381.7	71.0	2.1	0.5
75°	371.6	338.5	284.5	250.9	221.5	183.1	162.8	127.1	36.3	1.1	0.0
77.5°	74.2	67.3	60.3	55.0	51.8	44.3	42.2	34.7	15.0	0.5	0.0
80°	39.0	32.0	27.2	24.0	20.8	17.1	14.4	11.8	2.7	0.0	0.0
82.5°	37.4	25.1	18.2	15.0	12.8	10.1	8.0	5.9	1.6	0.0	0.0
85°	13.9	10.7	8.0	6.4	5.3	4.8	3.7	3.2	0.0	0.0	0.0
87.5°	2.1	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: P163302

CATALOG NUMBER: LDRC-SL2-F02-E-HSS

CANDELA DISTRIBUTION (continued):

	125°	135°	145°	155°	165°	175°	180°
0°	112.6	112.6	112.6	112.6	112.6	112.6	112.6
2.5°	95.6	91.3	89.2	86.5	86.5	86.0	87.0
5°	79.5	73.7	69.4	66.2	66.7	65.1	65.6
7.5°	67.3	61.4	57.7	55.5	55.0	54.5	54.5
10°	58.2	52.8	49.6	48.0	47.5	47.5	47.5
12.5°	51.8	46.4	43.8	42.7	42.7	42.2	42.2
15°	46.4	42.2	39.5	38.4	38.4	37.9	38.4
17.5°	42.2	37.9	35.8	34.7	34.7	34.2	34.2
20°	38.4	34.7	32.6	31.0	31.0	30.4	31.0
22.5°	35.2	31.5	28.8	27.8	27.2	26.7	27.2
25°	32.0	28.3	25.6	24.0	23.5	23.5	22.9
27.5°	29.4	25.6	22.4	20.8	20.3	20.3	19.7
30°	26.7	22.4	19.2	17.6	17.1	17.1	17.1
32.5°	24.0	19.2	16.5	15.0	14.4	14.4	14.4
35°	21.4	16.5	13.9	12.3	11.8	11.8	11.8
37.5°	18.2	13.9	10.7	9.6	9.1	8.6	8.6
40°	15.5	10.7	8.0	6.9	5.9	5.9	5.9
42.5°	12.8	8.6	5.9	4.3	3.7	3.2	3.7
45°	10.7	6.4	3.7	2.1	1.6	1.6	1.6
47.5°	8.6	4.3	1.6	0.5	0.5	0.5	0.5
50°	6.4	2.7	0.5	0.0	0.0	0.5	0.5
52.5°	4.8	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)