

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: P163301

Luminaire Tested: **LDRC-SL2-F02-E-7030-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P163301
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-7030-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) 3000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2682 lumens
Efficiency: N/A
Efficacy: 48.8 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

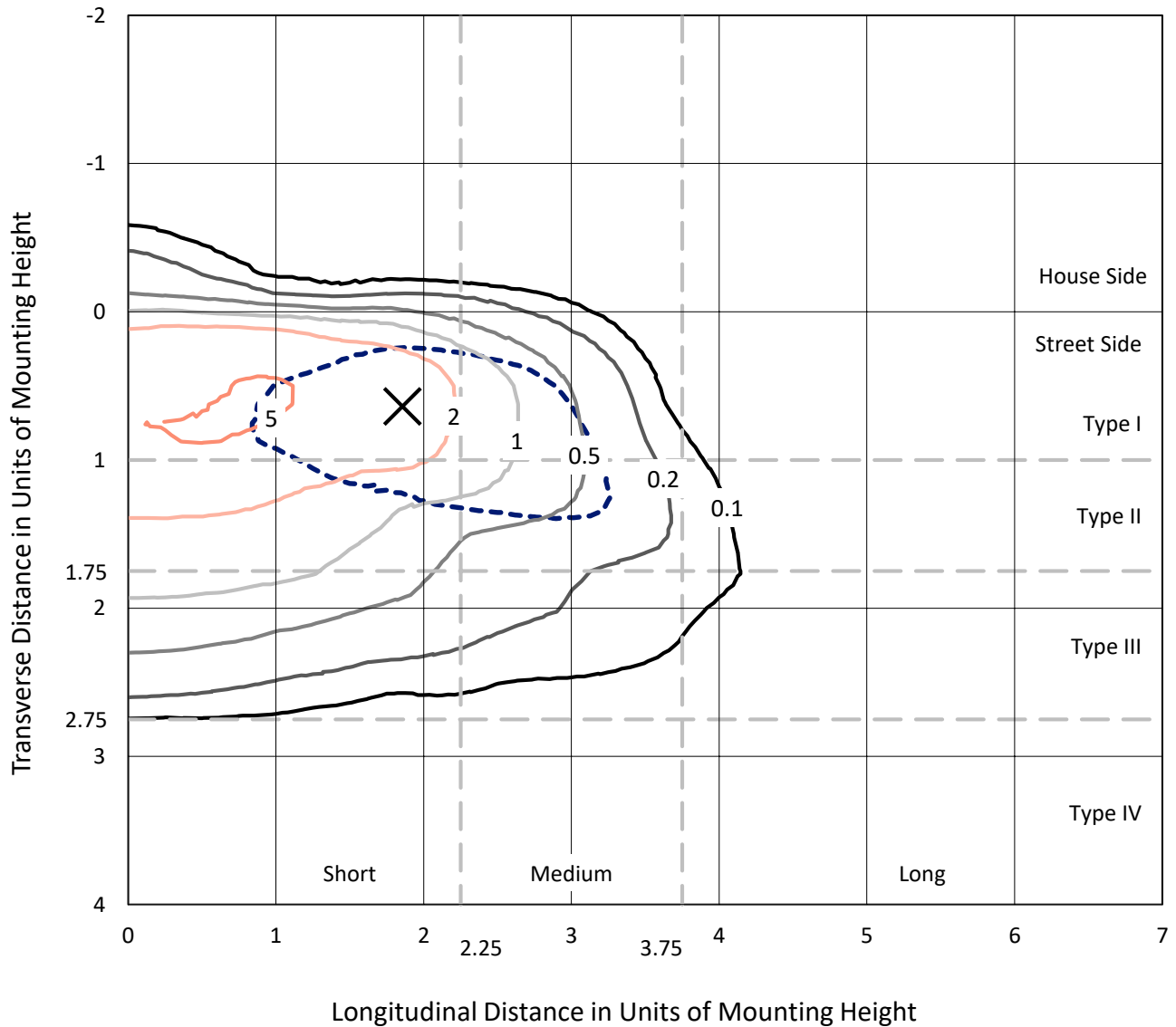
Input Watts (W): 55
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P163301
 CATALOG NUMBER: LDRC-SL2-F02-E-7030-HSS

Iso-Footcandle Lines of Horizontal Illumination

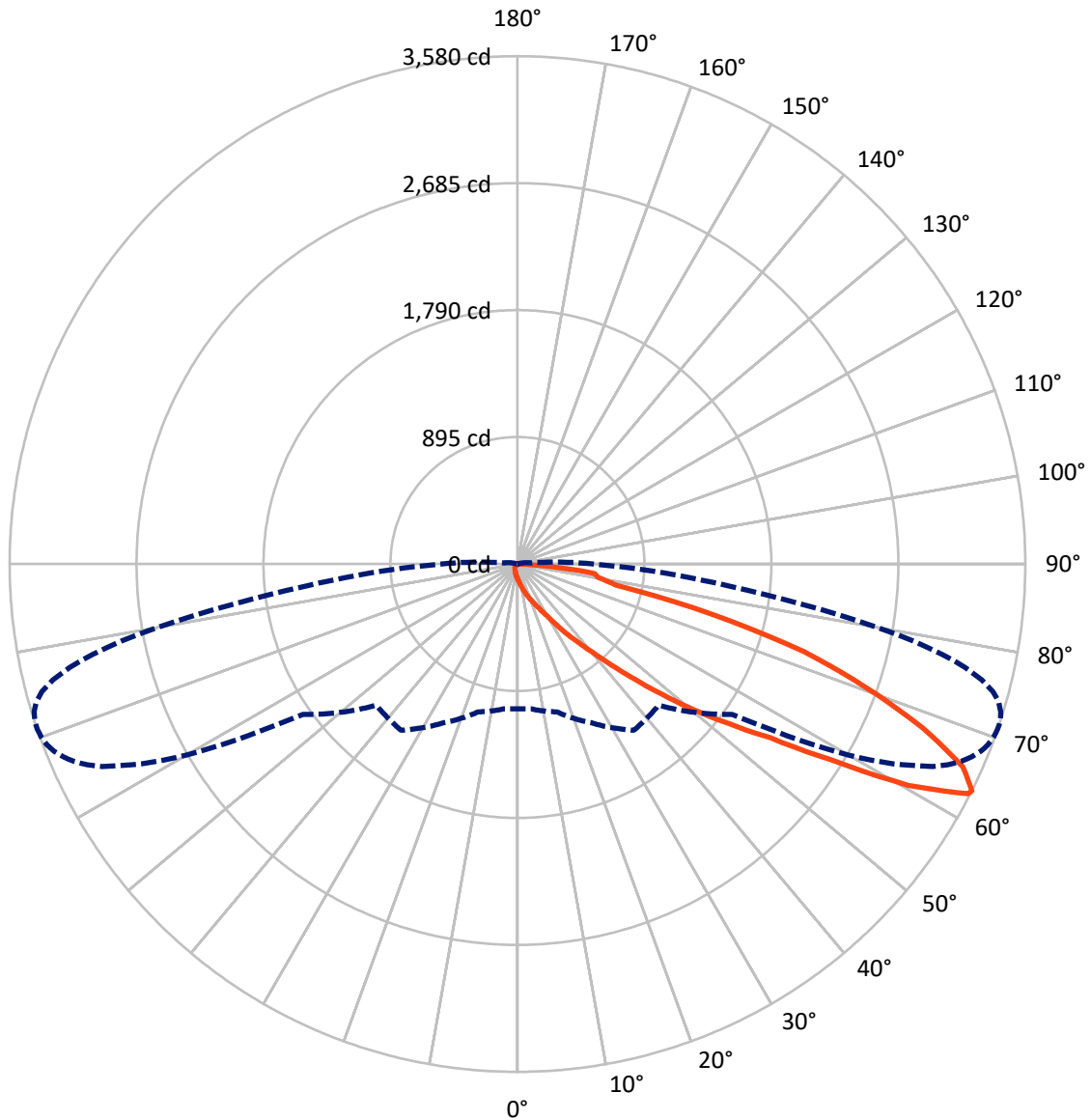
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 5.6 fc
 Type II - Short - Non-Cutoff

REPORT NUMBER: P163301
CATALOG NUMBER: LDRC-SL2-F02-E-7030-HSS

Luminous Intensity Polar Plot



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

REPORT NUMBER: P163301

CATALOG NUMBER: LDRC-SL2-F02-E-7030-HSS

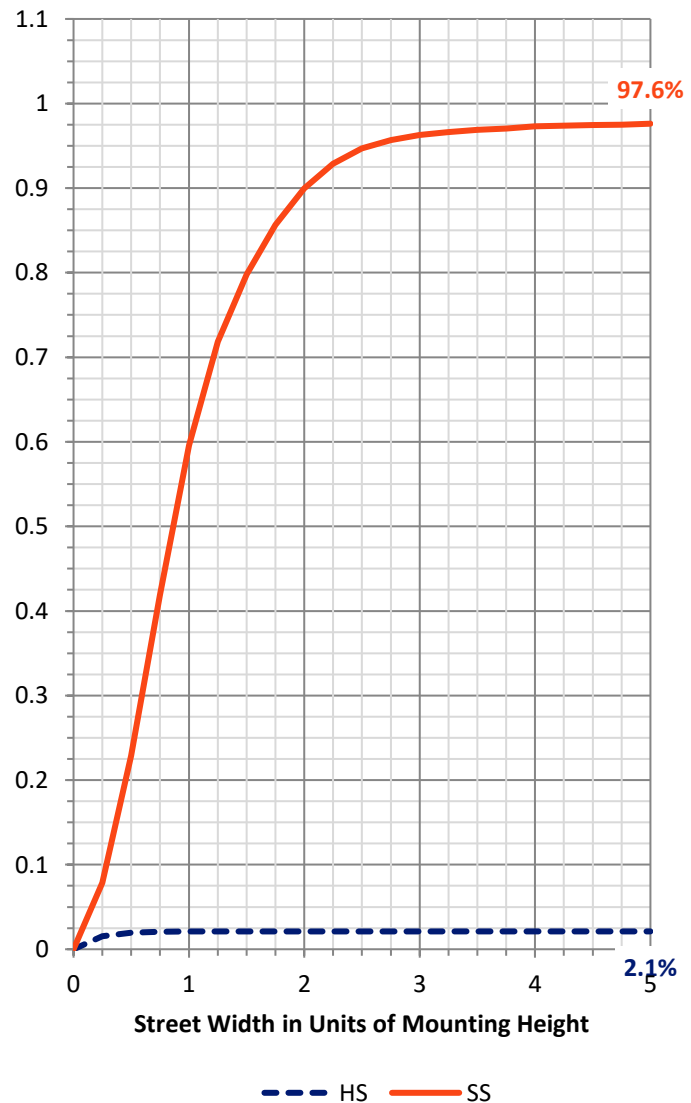
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	56.9	0.0	56.9
	% Fixture	2.1	0.0	2.1
Street Side	Lumens	2625.1	0.0	2625.1
	% Fixture	97.9	0.0	97.9
Total	Lumens	2682.0	0.0	2682.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	11.4	0.4
10°-20°	44.1	1.6
20°-30°	89.6	3.3
30°-40°	218.8	8.2
40°-50°	489.4	18.2
50°-60°	688.2	25.7
60°-70°	809.3	30.2
70°-80°	292.2	10.9
80°-90°	39.1	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°	2682.0	100.0
0°-180°	2682.0	100.0



REPORT NUMBER: P163301

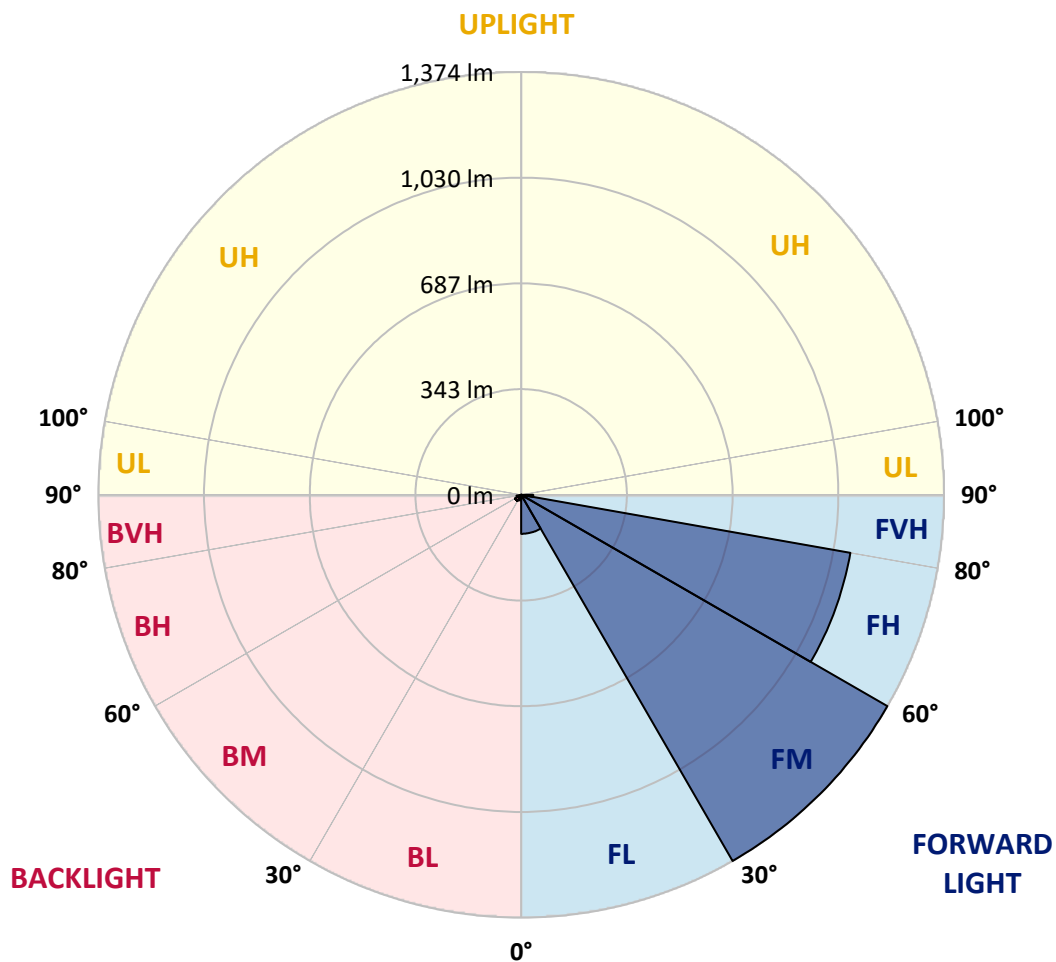
CATALOG NUMBER: LDRC-SL2-F02-E-7030-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	126.7	4.7			
FM (30°-60°)	1373.5	51.2			
FH (60°-80°)	1085.9	40.5			G1/1800
FVH (80°-90°)	39.0	1.5			G1/100
BL (0°-30°)	18.3	0.7	B0/110		
BM (30°-60°)	22.9	0.9	B0/220		
BH (60°-80°)	15.6	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: P163301

CATALOG NUMBER: LDRC-SL2-F02-E-7030-HSS

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	56°	57°	58°	59°
0°	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9
2.5°	134.6	136.0	135.1	132.6	129.7	125.8	122.4	122.4	121.9	120.4	120.9
5°	176.5	177.0	175.0	169.2	163.8	155.5	146.3	145.3	144.3	142.9	142.4
7.5°	217.5	219.4	217.5	211.1	200.4	187.7	173.1	171.6	168.7	168.7	166.8
10°	259.4	259.4	257.4	250.1	240.4	222.3	203.8	201.4	198.0	197.0	194.0
12.5°	289.1	289.1	288.1	284.3	276.4	260.4	237.9	235.5	231.1	229.6	226.2
15°	300.8	300.8	301.3	304.7	305.2	297.9	274.5	272.6	268.2	264.3	262.8
17.5°	308.1	307.7	307.7	312.5	321.3	326.2	311.1	309.1	304.3	302.3	297.4
20°	324.2	323.3	320.3	320.3	328.6	345.7	345.7	345.2	339.8	338.4	335.9
22.5°	348.1	347.2	338.4	331.1	335.0	356.4	376.4	375.4	373.5	371.5	370.1
25°	387.1	383.7	368.6	347.2	343.7	366.7	399.8	402.2	403.7	403.7	404.7
27.5°	446.1	441.7	414.9	374.9	359.8	383.2	425.6	430.5	434.9	435.9	440.3
30°	528.0	520.3	481.7	423.2	388.6	407.6	463.7	469.0	475.4	477.3	484.2
32.5°	662.6	658.2	621.2	533.4	459.3	455.4	516.8	523.7	532.0	535.4	543.7
35°	867.4	868.4	838.1	759.2	656.8	603.1	611.9	617.8	620.7	630.9	635.3
37.5°	1006.4	1008.8	1015.6	984.4	911.3	856.7	787.9	794.3	779.1	780.6	781.1
40°	1082.4	1090.2	1130.2	1160.4	1154.6	1122.9	1067.8	1071.2	1042.9	1036.6	1005.9
42.5°	1133.1	1143.4	1207.2	1300.8	1348.7	1377.4	1364.7	1363.3	1341.3	1333.0	1307.2
45°	1164.8	1174.1	1254.5	1392.5	1502.7	1586.6	1621.2	1625.1	1606.6	1598.3	1576.8
47.5°	1163.4	1174.1	1260.4	1426.6	1589.0	1723.1	1820.6	1825.5	1836.7	1829.4	1830.8
50°	1099.0	1109.2	1196.0	1368.6	1563.7	1785.5	1964.0	1979.6	1997.6	2009.8	2015.6
52.5°	1021.0	1028.3	1105.3	1269.2	1455.4	1759.7	2048.8	2075.6	2102.4	2125.4	2141.4
55°	992.2	1000.5	1061.0	1197.0	1368.6	1651.4	2088.3	2127.8	2165.8	2203.3	2234.1
57.5°	1007.3	1015.1	1058.5	1162.9	1317.0	1537.3	2099.5	2160.9	2223.3	2284.3	2344.8
60°	1062.9	1071.2	1108.2	1194.6	1303.3	1471.5	2055.6	2157.5	2261.4	2367.7	2467.6
62.5°	1041.0	1044.4	1099.0	1250.2	1400.8	1415.4	1896.2	2038.6	2197.0	2360.8	2522.2
63°	1020.0	1023.9	1079.5	1235.0	1430.6	1407.2	1847.0	1997.1	2164.4	2340.8	2516.4
65°	924.9	925.4	967.9	1090.7	1397.4	1421.8	1627.5	1770.9	1963.0	2174.6	2396.4
67.5°	690.4	687.0	728.0	821.6	1097.1	1422.3	1396.9	1477.3	1611.0	1798.7	1997.6
70°	244.8	239.4	305.7	435.4	683.6	1163.4	1200.4	1205.8	1242.8	1344.2	1469.1
72.5°	79.5	80.9	97.5	159.4	315.0	783.0	1086.8	1070.2	1060.5	1060.0	1076.6
75°	31.7	32.2	39.0	70.7	141.4	377.4	951.8	961.0	964.4	969.3	974.7
77.5°	15.1	16.6	21.9	39.5	70.2	186.7	681.2	759.6	804.5	839.1	860.1
80°	5.4	6.3	12.2	24.4	32.7	85.8	358.9	433.0	498.8	583.6	656.8
82.5°	0.0	0.0	2.4	17.1	18.0	34.6	147.2	172.6	197.5	256.0	328.6
85°	0.0	0.0	0.0	4.9	5.4	5.9	49.7	60.0	67.3	78.5	90.7
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.4	2.9	7.3	11.2
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: P163301

CATALOG NUMBER: LDRC-SL2-F02-E-7030-HSS

CANDELA DISTRIBUTION (continued):

	60°	61°	62°	64°	65°	66°	67°	68°	69°	70°	71°
0°	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9
2.5°	119.9	119.5	119.5	118.5	118.0	117.0	116.5	115.1	114.6	114.6	114.6
5°	141.9	139.9	138.9	136.5	135.1	134.6	132.1	131.2	129.7	130.2	127.8
7.5°	166.3	162.9	161.4	158.0	157.0	153.6	152.6	150.2	148.7	145.8	144.8
10°	193.1	188.7	186.3	180.9	179.4	177.0	174.1	171.1	168.7	165.8	164.3
12.5°	223.8	219.9	217.9	210.6	207.2	203.8	199.9	196.0	192.1	189.7	186.3
15°	259.9	253.6	251.6	244.8	238.9	234.5	229.2	224.3	221.4	216.5	213.1
17.5°	295.5	289.1	287.7	277.4	271.1	268.2	262.3	256.0	250.6	245.7	240.4
20°	331.1	326.7	322.8	313.0	306.2	301.3	293.5	287.2	282.8	276.0	269.1
22.5°	366.7	362.3	359.4	349.1	342.8	335.9	329.1	322.3	316.0	307.7	299.8
25°	403.2	400.3	398.8	389.6	383.7	377.4	370.6	362.8	354.9	345.7	337.4
27.5°	441.3	442.2	439.3	437.3	431.0	426.6	415.9	410.5	404.7	393.5	383.2
30°	489.5	492.4	491.5	492.9	489.0	486.1	477.8	471.0	464.2	453.5	441.7
32.5°	550.5	554.4	556.3	561.7	559.7	558.8	556.3	546.6	541.7	523.2	518.3
35°	644.6	642.6	650.9	655.3	653.4	652.4	649.5	644.1	638.2	625.1	612.9
37.5°	767.0	768.9	771.8	763.1	757.2	756.7	747.9	742.6	734.3	719.7	705.0
40°	991.2	979.0	965.4	928.3	912.3	903.0	877.2	869.8	855.7	835.7	820.6
42.5°	1282.8	1270.6	1229.7	1167.8	1134.6	1088.8	1067.8	1042.0	1022.0	989.3	971.7
45°	1572.4	1537.3	1532.4	1460.3	1419.3	1358.9	1321.3	1277.9	1232.6	1189.7	1158.5
47.5°	1816.7	1808.9	1785.0	1741.2	1703.1	1652.4	1604.1	1537.3	1490.5	1429.6	1373.5
50°	2012.2	2011.7	2003.0	1977.6	1945.9	1905.0	1862.5	1806.0	1752.9	1678.2	1618.3
52.5°	2158.5	2166.3	2169.2	2161.4	2149.2	2113.2	2091.7	2044.4	1999.6	1936.2	1871.3
55°	2265.8	2294.6	2309.2	2325.7	2322.3	2309.7	2308.7	2278.0	2257.5	2207.3	2161.4
57.5°	2398.4	2445.7	2491.0	2571.5	2574.4	2602.7	2617.3	2631.9	2635.8	2615.8	2600.7
60°	2567.1	2663.6	2749.5	2917.7	2961.5	3030.8	3075.6	3124.4	3165.8	3169.2	3168.3
62.5°	2686.1	2834.8	2973.2	3222.9	3308.2	3388.2	3448.1	3495.5	3524.2	3553.5	3567.1
63°	2689.5	2852.3	2999.6	3257.0	3346.7	3422.8	3479.8	3523.7	3554.0	3571.5	3580.3
65°	2607.1	2804.6	2980.1	3236.5	3320.9	3397.4	3427.2	3455.9	3470.6	3477.4	3451.6
67.5°	2209.7	2402.8	2607.6	2894.2	2966.4	3058.1	3082.5	3097.1	3103.9	3102.4	3080.5
70°	1652.4	1814.3	2042.0	2369.6	2465.2	2554.9	2610.5	2634.4	2642.2	2639.7	2607.1
72.5°	1153.6	1248.7	1436.4	1801.1	1931.3	2046.4	2115.1	2150.7	2158.0	2143.4	2113.2
75°	968.8	973.7	1016.1	1215.5	1337.4	1460.3	1537.8	1560.3	1545.6	1501.3	1424.2
77.5°	865.0	875.7	875.7	905.4	929.3	963.5	970.8	916.2	852.8	770.9	704.6
80°	725.5	763.1	789.4	811.3	813.8	807.0	788.9	758.2	709.4	647.0	577.8
82.5°	440.8	514.9	545.1	658.2	713.8	751.4	748.4	707.5	670.4	605.6	546.6
85°	111.2	119.9	130.2	169.2	189.7	231.6	257.9	270.1	274.5	252.1	228.2
87.5°	10.7	7.3	12.2	9.3	13.1	9.7	13.1	12.2	15.1	16.1	17.6
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: P163301

CATALOG NUMBER: LDRC-SL2-F02-E-7030-HSS

CANDELA DISTRIBUTION (continued):

	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°	82°
0°	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9
2.5°	113.6	113.1	112.6	112.1	111.7	111.2	110.2	110.2	109.2	108.7	108.2
5°	126.3	125.3	124.8	123.8	122.4	121.4	119.9	118.0	116.5	116.1	115.1
7.5°	142.4	139.9	138.9	137.5	135.5	132.6	130.7	129.2	126.8	125.3	122.4
10°	160.4	158.0	155.1	152.1	149.2	145.8	143.3	141.4	137.5	135.5	132.1
12.5°	183.3	178.9	175.5	171.6	167.7	163.8	160.9	155.1	151.6	147.2	144.3
15°	206.7	202.8	198.9	194.0	188.2	181.9	178.9	173.6	169.2	162.3	158.5
17.5°	235.0	227.7	221.9	216.0	210.6	204.8	198.9	190.6	184.3	178.5	170.6
20°	262.8	254.0	247.7	239.9	232.1	222.8	216.0	210.2	201.4	193.6	185.3
22.5°	292.5	283.8	273.5	265.7	255.0	247.7	238.4	228.7	219.9	209.7	199.4
25°	328.6	319.4	307.7	297.4	285.2	275.0	263.8	252.6	241.9	230.1	217.0
27.5°	373.0	363.2	350.6	338.4	322.3	309.6	298.9	283.8	270.1	255.5	240.4
30°	429.1	418.3	402.8	385.2	369.1	354.9	339.8	319.8	304.7	287.2	267.7
32.5°	502.2	489.5	468.6	452.0	432.0	413.5	392.5	372.5	351.1	328.1	305.7
35°	594.4	582.7	558.3	533.9	512.0	490.0	463.7	440.8	410.5	382.8	354.0
37.5°	689.9	668.9	646.5	620.2	592.9	566.6	534.4	502.7	468.1	437.9	401.8
40°	799.1	773.8	755.3	727.0	688.5	650.9	621.2	581.7	538.3	497.8	455.4
42.5°	948.8	920.5	887.4	844.5	816.7	772.8	734.3	687.5	630.4	585.1	533.9
45°	1121.9	1083.4	1051.2	1009.8	976.1	921.5	876.7	814.3	757.2	697.7	635.3
47.5°	1319.4	1271.6	1224.8	1183.8	1130.2	1076.6	1019.5	953.2	880.1	814.7	740.6
50°	1546.1	1478.3	1413.5	1360.8	1287.2	1225.3	1163.4	1088.8	1007.8	932.8	848.4
52.5°	1798.2	1719.7	1633.9	1552.9	1467.6	1388.1	1313.5	1227.7	1137.5	1045.8	951.8
55°	2102.4	2043.4	1942.5	1839.6	1725.5	1619.2	1523.2	1416.9	1307.2	1186.8	1087.8
57.5°	2578.8	2550.0	2465.7	2362.8	2214.1	2084.9	1922.0	1791.9	1632.9	1467.1	1339.4
60°	3224.3	3188.8	3141.5	3058.1	2940.1	2764.6	2585.1	2382.8	2140.9	1911.3	1693.3
62.5°	3568.6	3555.9	3517.4	3459.8	3349.7	3211.2	3030.3	2808.0	2534.9	2256.0	1978.1
63°	3578.8	3562.7	3529.6	3471.1	3374.0	3239.9	3062.5	2846.5	2579.3	2295.0	2011.3
65°	3440.4	3434.0	3400.4	3336.5	3270.2	3167.8	3030.3	2844.5	2620.2	2351.6	2069.3
67.5°	3051.3	3032.2	2980.6	2961.1	2914.7	2843.6	2738.7	2611.0	2450.6	2239.5	1995.6
70°	2580.7	2552.5	2487.6	2453.0	2396.4	2351.6	2287.7	2196.5	2097.5	1950.3	1768.4
72.5°	2082.0	2023.4	1964.0	1873.8	1794.8	1714.8	1644.1	1579.7	1471.0	1411.5	1273.6
75°	1352.1	1245.7	1143.9	1007.3	884.5	775.7	669.9	616.3	504.6	459.3	394.5
77.5°	641.6	582.2	502.2	440.3	361.3	295.0	240.9	180.9	141.9	111.2	84.8
80°	517.8	467.6	419.3	363.2	303.8	242.3	185.8	138.9	98.5	68.3	48.3
82.5°	461.7	407.1	347.7	309.1	268.7	219.9	180.4	147.2	108.7	79.5	54.1
85°	179.4	151.2	116.5	95.1	74.1	61.0	55.1	38.0	29.7	23.4	18.0
87.5°	15.6	12.7	10.2	6.8	7.3	3.9	4.4	2.9	2.4	2.4	2.0
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: P163301

CATALOG NUMBER: LDRC-SL2-F02-E-7030-HSS

CANDELA DISTRIBUTION (continued):

	83°	84°	85°	86°	87°	88°	89°	90°	95°	105°	115°
0°	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9
2.5°	107.8	107.3	106.8	105.8	105.8	104.8	104.4	103.8	101.4	96.1	91.7
5°	113.1	112.1	111.2	109.7	108.7	107.3	106.3	104.8	99.5	89.2	80.4
7.5°	120.9	119.0	117.5	114.6	113.1	111.2	109.7	107.3	98.5	82.9	70.7
10°	130.2	126.8	124.3	120.9	118.0	115.5	113.1	109.7	97.5	76.1	61.9
12.5°	141.4	137.5	132.6	128.7	124.8	121.4	118.0	113.6	96.1	70.2	55.1
15°	152.6	146.8	143.3	138.0	132.6	127.8	122.9	119.0	96.5	63.9	49.3
17.5°	165.3	159.4	152.1	146.3	140.4	134.1	128.2	120.4	94.1	59.0	44.8
20°	177.5	169.2	162.3	155.1	146.8	138.9	131.6	124.8	92.1	54.1	41.0
22.5°	190.6	180.9	172.1	162.9	152.6	143.8	135.1	126.3	88.7	49.7	37.5
25°	206.7	195.5	182.8	171.6	160.9	150.2	138.9	128.2	85.3	45.8	35.1
27.5°	226.2	211.6	198.9	184.8	169.7	156.0	143.8	132.1	81.9	42.9	32.7
30°	251.1	234.0	216.0	198.0	181.9	166.3	149.2	134.6	78.5	40.0	30.2
32.5°	284.3	262.8	240.9	219.9	198.5	178.5	160.4	141.4	76.5	37.5	27.8
35°	328.1	300.4	273.5	247.2	221.4	197.0	173.6	152.1	76.5	34.6	24.9
37.5°	369.6	337.4	303.3	270.6	239.9	211.6	183.8	158.0	72.7	32.2	22.4
40°	414.5	375.9	335.9	297.4	260.4	225.3	193.6	163.8	69.2	29.3	20.0
42.5°	483.2	434.4	382.3	337.4	293.0	249.6	210.2	175.0	64.8	26.3	17.6
45°	573.4	511.5	450.0	395.4	338.9	285.7	238.9	195.5	63.9	23.9	15.1
47.5°	669.9	596.8	524.6	454.9	388.6	326.7	270.6	218.4	63.9	21.4	13.1
50°	766.0	674.3	597.3	516.3	441.7	368.6	301.8	242.3	64.4	19.5	10.7
52.5°	852.8	754.8	668.5	574.8	492.4	407.6	335.0	265.7	63.4	17.1	8.8
55°	973.2	858.1	758.2	654.8	558.3	462.7	380.3	300.8	63.9	15.1	7.3
57.5°	1195.0	1060.0	939.6	804.0	692.9	569.5	469.5	373.0	69.7	12.7	5.4
60°	1513.4	1337.9	1168.7	1003.4	862.0	715.3	585.6	472.0	81.9	10.2	3.9
62.5°	1727.5	1497.8	1296.0	1113.6	949.3	795.7	654.3	525.1	90.2	8.3	2.4
63°	1749.4	1512.0	1309.1	1120.9	953.2	799.6	657.2	529.0	90.7	7.8	2.4
65°	1790.9	1536.4	1316.5	1122.4	949.3	794.3	655.3	528.5	91.7	6.3	2.0
67.5°	1743.6	1498.8	1274.0	1080.5	915.2	762.6	630.9	509.0	91.2	4.4	1.4
70°	1559.3	1356.4	1159.0	978.6	828.4	690.4	574.4	464.2	83.9	2.9	1.0
72.5°	1144.8	1006.9	853.8	723.6	624.1	518.3	442.2	348.6	64.8	2.0	0.5
75°	339.4	309.1	259.9	229.2	202.3	167.2	148.7	116.1	33.1	1.0	0.0
77.5°	67.8	61.4	55.1	50.2	47.3	40.5	38.5	31.7	13.7	0.5	0.0
80°	35.6	29.3	24.9	21.9	19.0	15.6	13.1	10.7	2.4	0.0	0.0
82.5°	34.1	22.9	16.6	13.7	11.7	9.3	7.3	5.4	1.4	0.0	0.0
85°	12.7	9.7	7.3	5.9	4.9	4.4	3.4	2.9	0.0	0.0	0.0
87.5°	2.0	1.4	1.4	1.0	1.0	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: P163301

CATALOG NUMBER: LDRC-SL2-F02-E-7030-HSS

CANDELA DISTRIBUTION (continued):

	125°	135°	145°	155°	165°	175°	180°
0°	102.9	102.9	102.9	102.9	102.9	102.9	102.9
2.5°	87.3	83.4	81.4	79.0	79.0	78.5	79.5
5°	72.7	67.3	63.4	60.5	61.0	59.5	60.0
7.5°	61.4	56.1	52.7	50.7	50.2	49.7	49.7
10°	53.1	48.3	45.3	43.9	43.4	43.4	43.4
12.5°	47.3	42.4	40.0	39.0	39.0	38.5	38.5
15°	42.4	38.5	36.1	35.1	35.1	34.6	35.1
17.5°	38.5	34.6	32.7	31.7	31.7	31.2	31.2
20°	35.1	31.7	29.7	28.3	28.3	27.8	28.3
22.5°	32.2	28.8	26.3	25.4	24.9	24.4	24.9
25°	29.3	25.8	23.4	21.9	21.4	21.4	21.0
27.5°	26.8	23.4	20.5	19.0	18.5	18.5	18.0
30°	24.4	20.5	17.6	16.1	15.6	15.6	15.6
32.5°	21.9	17.6	15.1	13.7	13.1	13.1	13.1
35°	19.5	15.1	12.7	11.2	10.7	10.7	10.7
37.5°	16.6	12.7	9.7	8.8	8.3	7.8	7.8
40°	14.1	9.7	7.3	6.3	5.4	5.4	5.4
42.5°	11.7	7.8	5.4	3.9	3.4	2.9	3.4
45°	9.7	5.9	3.4	2.0	1.4	1.4	1.4
47.5°	7.8	3.9	1.4	0.5	0.5	0.5	0.5
50°	5.9	2.4	0.5	0.0	0.0	0.5	0.5
52.5°	4.4	1.4	0.0	0.0	0.0	0.0	0.0
55°	2.4	0.5	0.0	0.0	0.0	0.0	0.0
57.5°	1.4	0.0	0.0	0.0	0.0	0.0	0.0
60°	1.0	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)