

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: P163232

Luminaire Tested: **LDRL-SL2-F01-E-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P163232  
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-F01-E-HSS  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(1) LIGHTBARS WITH AccuLED OPTICS - TYPE 2 W/ SPILL LIGHT CONTROL AND HOUSE SIDE SHIELD  
Light Source: (7) 4000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1468.2 lumens  
Efficiency: N/A  
Efficacy: 56.7 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 1' x H: 0.1')  
IES Classification: Type II - Short - Non-Cutoff  
BUG Rating: B0 - U0 - G1

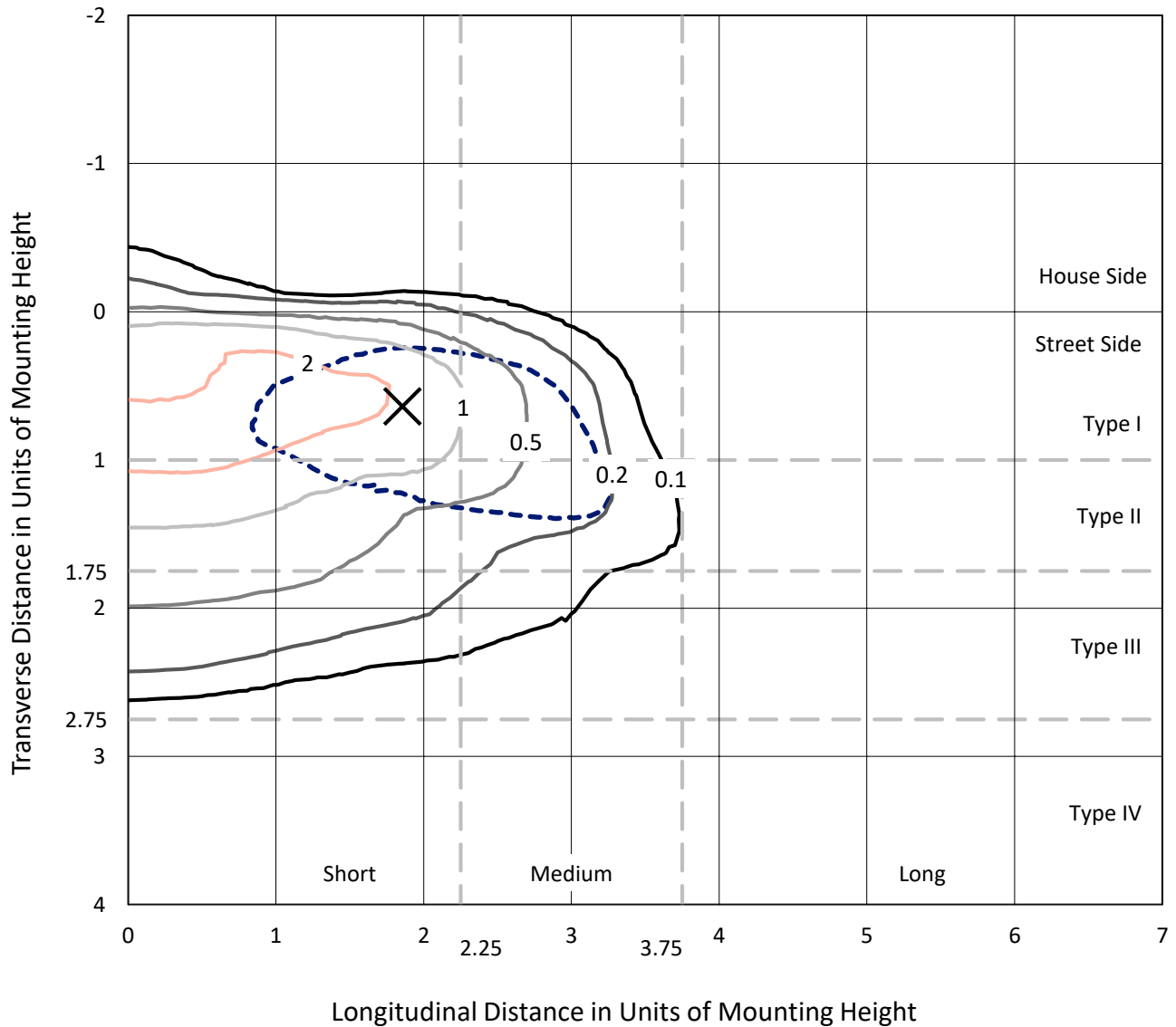
Input Watts (W): 25.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



REPORT NUMBER: P163232  
 CATALOG NUMBER: LDRL-SL2-F01-E-HSS

### Iso-Footcandle Lines of Horizontal Illumination

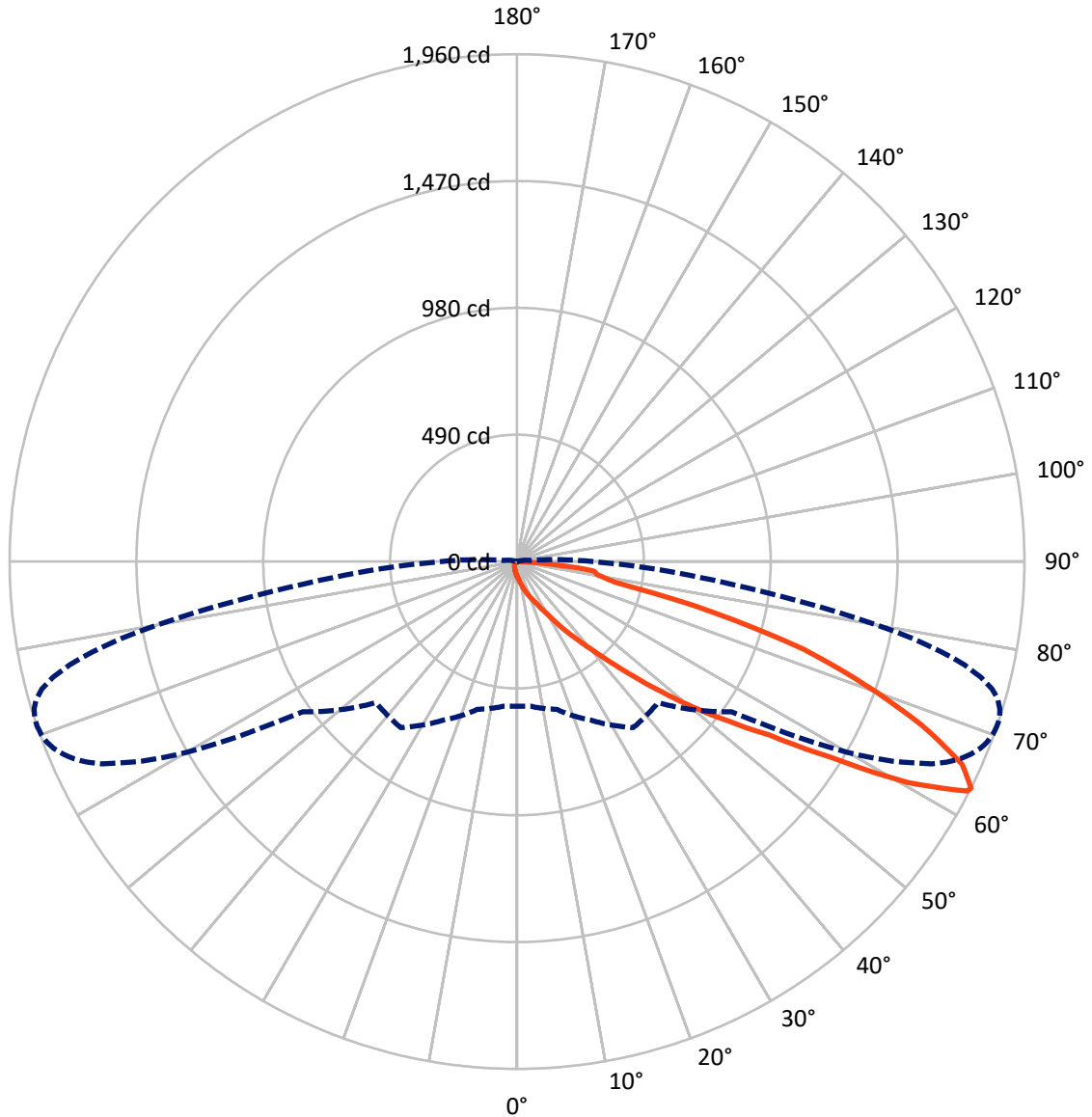
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.1 fc  
 Type II - Short - Non-Cutoff

REPORT NUMBER: P163232  
CATALOG NUMBER: LDRL-SL2-F01-E-HSS

### Luminous Intensity Polar Plot



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

REPORT NUMBER: P163232

CATALOG NUMBER: LDRL-SL2-F01-E-HSS

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	31.2	0.0	31.2
	% Fixture	2.1	0.0	2.1
<b>Street Side</b>	Lumens	1437.1	0.0	1437.1
	% Fixture	97.9	0.0	97.9
<b>Total</b>	Lumens	1468.2	0.0	1468.2
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	6.2	0.4
10°-20°	24.1	1.6
20°-30°	49.0	3.3
30°-40°	119.8	8.2
40°-50°	267.9	18.2
50°-60°	376.7	25.7
60°-70°	443.0	30.2
70°-80°	160.0	10.9
80°-90°	21.4	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°	1468.2	100.0
0°-180°	1468.2	100.0



REPORT NUMBER: P163232

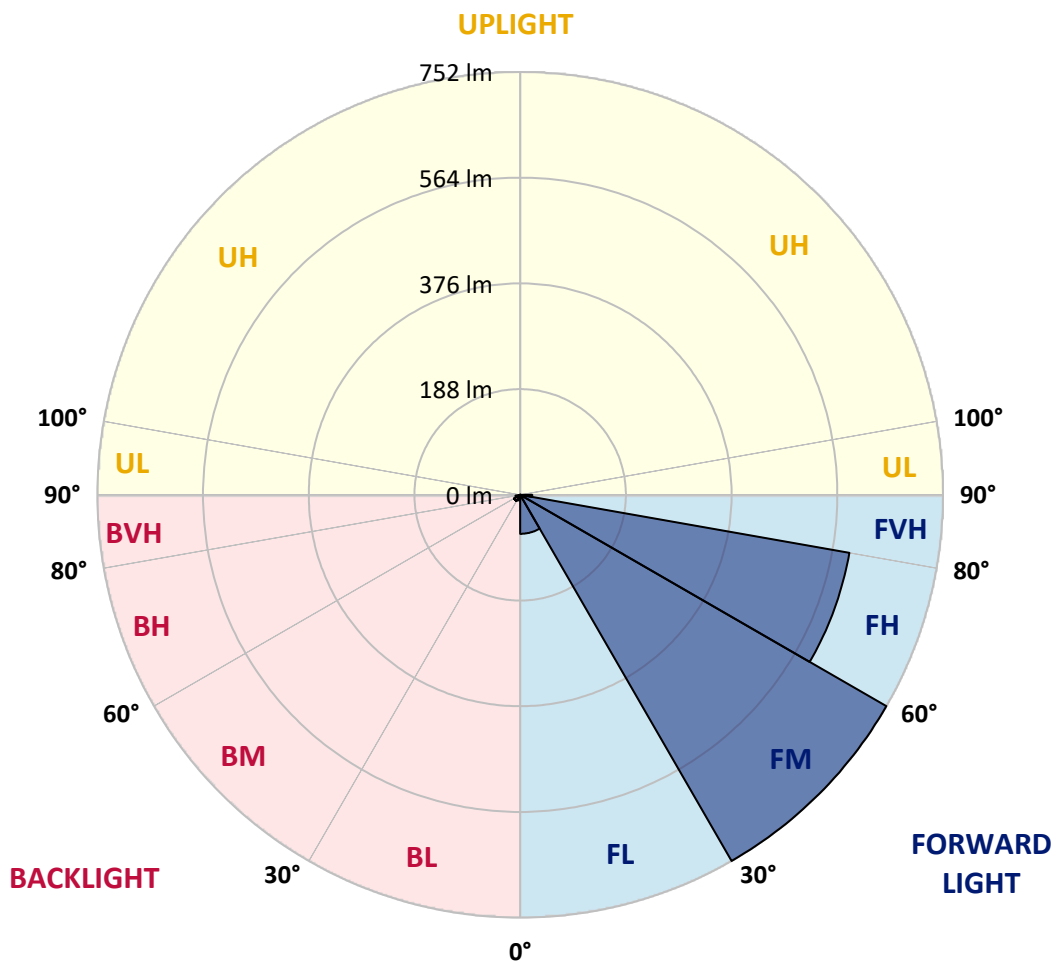
CATALOG NUMBER: LDRL-SL2-F01-E-HSS

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	69.4	4.7			
FM (30°-60°)	751.9	51.2			
FH (60°-80°)	594.4	40.5			G0/660
FVH (80°-90°)	21.3	1.5			G1/100
BL (0°-30°)	10.0	0.7	B0/110		
BM (30°-60°)	12.6	0.9	B0/220		
BH (60°-80°)	8.5	0.6	B0/110		G0/110
BVH (80°-90°)	0.0	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: P163232

CATALOG NUMBER: LDRL-SL2-F01-E-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	56°	57°	58°	59°
0°	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3
2.5°	73.7	74.5	73.9	72.6	71.0	68.9	67.0	67.0	66.7	65.9	66.2
5°	96.6	96.9	95.8	92.6	89.7	85.1	80.1	79.5	79.0	78.2	77.9
7.5°	119.0	120.1	119.0	115.6	109.7	102.8	94.8	94.0	92.4	92.4	91.3
10°	142.0	142.0	140.9	136.9	131.6	121.7	111.6	110.2	108.4	107.8	106.2
12.5°	158.3	158.3	157.7	155.6	151.3	142.5	130.3	128.9	126.5	125.7	123.8
15°	164.7	164.7	165.0	166.8	167.1	163.1	150.3	149.2	146.8	144.7	143.9
17.5°	168.7	168.4	168.4	171.1	175.9	178.6	170.3	169.2	166.6	165.5	162.8
20°	177.5	177.0	175.4	175.4	179.9	189.2	189.2	189.0	186.0	185.2	183.9
22.5°	190.6	190.1	185.2	181.2	183.4	195.1	206.1	205.5	204.5	203.4	202.6
25°	211.9	210.1	201.8	190.1	188.2	200.7	218.9	220.2	221.0	221.0	221.5
27.5°	244.2	241.8	227.2	205.3	197.0	209.8	233.0	235.7	238.1	238.6	241.0
30°	289.1	284.8	263.7	231.7	212.7	223.1	253.8	256.8	260.2	261.3	265.0
32.5°	362.7	360.3	340.1	292.0	251.4	249.3	282.9	286.7	291.2	293.1	297.6
35°	474.8	475.4	458.8	415.6	359.5	330.2	335.0	338.2	339.8	345.4	347.8
37.5°	550.9	552.2	556.0	538.9	498.9	469.0	431.3	434.8	426.5	427.3	427.6
40°	592.6	596.8	618.7	635.3	632.1	614.7	584.6	586.4	570.9	567.5	550.6
42.5°	620.3	625.9	660.9	712.1	738.3	754.0	747.1	746.3	734.3	729.7	715.6
45°	637.7	642.7	686.8	762.3	822.6	868.6	887.5	889.6	879.5	875.0	863.2
47.5°	636.9	642.7	690.0	781.0	869.9	943.3	996.7	999.3	1005.5	1001.5	1002.3
50°	601.6	607.2	654.7	749.2	856.0	977.5	1075.1	1083.7	1093.6	1100.2	1103.4
52.5°	558.9	562.9	605.1	694.8	796.7	963.3	1121.6	1136.3	1150.9	1163.5	1172.3
55°	543.2	547.7	580.8	655.3	749.2	904.0	1143.2	1164.8	1185.7	1206.2	1223.0
57.5°	551.5	555.7	579.5	636.6	720.9	841.6	1149.3	1183.0	1217.1	1250.5	1283.6
60°	581.9	586.4	606.7	653.9	713.5	805.5	1125.3	1181.1	1238.0	1296.2	1350.9
62.5°	569.9	571.7	601.6	684.4	766.8	774.9	1038.0	1116.0	1202.7	1292.4	1380.8
63°	558.4	560.5	591.0	676.1	783.1	770.3	1011.1	1093.3	1184.8	1281.5	1377.6
65°	506.3	506.6	529.8	597.1	765.0	778.3	891.0	969.4	1074.6	1190.5	1311.9
67.5°	378.0	376.1	398.5	449.8	600.6	778.6	764.7	808.8	881.9	984.7	1093.6
70°	134.0	131.1	167.4	238.4	374.2	636.9	657.2	660.1	680.4	735.9	804.2
72.5°	43.5	44.3	53.4	87.3	172.4	428.7	595.0	585.9	580.5	580.3	589.4
75°	17.4	17.6	21.3	38.7	77.4	206.6	521.0	526.1	528.0	530.6	533.6
77.5°	8.3	9.1	12.0	21.6	38.4	102.2	372.9	415.8	440.4	459.4	470.8
80°	2.9	3.5	6.7	13.3	17.9	47.0	196.5	237.0	273.1	319.5	359.5
82.5°	0.0	0.0	1.3	9.3	9.9	19.0	80.6	94.5	108.1	140.1	179.9
85°	0.0	0.0	0.0	2.7	2.9	3.2	27.2	32.8	36.8	43.0	49.6
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	1.6	4.0	6.1
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: P163232

CATALOG NUMBER: LDRL-SL2-F01-E-HSS

**CANDELA DISTRIBUTION (continued):**

	60°	61°	62°	64°	65°	66°	67°	68°	69°	70°	71°
0°	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3
2.5°	65.7	65.4	65.4	64.9	64.6	64.1	63.8	63.0	62.7	62.7	62.7
5°	77.7	76.6	76.1	74.7	73.9	73.7	72.3	71.8	71.0	71.3	69.9
7.5°	91.0	89.2	88.3	86.5	86.0	84.1	83.5	82.2	81.4	79.8	79.3
10°	105.7	103.3	102.0	99.0	98.2	96.9	95.3	93.7	92.4	90.8	89.9
12.5°	122.5	120.4	119.3	115.3	113.4	111.6	109.4	107.3	105.2	103.8	102.0
15°	142.3	138.8	137.7	134.0	130.8	128.4	125.4	122.8	121.2	118.5	116.6
17.5°	161.8	158.3	157.5	151.9	148.4	146.8	143.6	140.1	137.2	134.5	131.6
20°	181.2	178.8	176.7	171.4	167.6	165.0	160.7	157.2	154.8	151.1	147.3
22.5°	200.7	198.3	196.7	191.1	187.6	183.9	180.2	176.4	173.0	168.4	164.1
25°	220.7	219.1	218.3	213.3	210.1	206.6	202.9	198.6	194.3	189.2	184.7
27.5°	241.6	242.1	240.5	239.4	236.0	233.6	227.7	224.7	221.5	215.4	209.8
30°	268.0	269.6	269.1	269.8	267.7	266.1	261.6	257.8	254.1	248.2	241.8
32.5°	301.3	303.5	304.6	307.5	306.4	305.9	304.6	299.2	296.5	286.4	283.7
35°	352.9	351.8	356.3	358.7	357.7	357.1	355.5	352.6	349.4	342.2	335.5
37.5°	419.9	420.9	422.5	417.7	414.5	414.2	409.4	406.5	402.0	394.0	386.0
40°	542.6	536.0	528.5	508.2	499.4	494.3	480.2	476.2	468.4	457.5	449.2
42.5°	702.3	695.6	673.2	639.3	621.1	596.0	584.6	570.4	559.5	541.6	532.0
45°	860.8	841.6	838.9	799.4	777.0	743.9	723.3	699.6	674.8	651.3	634.2
47.5°	994.5	990.3	977.2	953.2	932.3	904.6	878.2	841.6	816.0	782.6	751.9
50°	1101.6	1101.3	1096.5	1082.6	1065.3	1042.9	1019.6	988.7	959.6	918.7	885.9
52.5°	1181.6	1185.9	1187.5	1183.2	1176.6	1156.8	1145.1	1119.2	1094.6	1059.9	1024.4
55°	1240.4	1256.1	1264.1	1273.2	1271.3	1264.4	1263.8	1247.0	1235.8	1208.3	1183.2
57.5°	1313.0	1338.9	1363.7	1407.7	1409.3	1424.8	1432.8	1440.8	1443.0	1432.0	1423.7
60°	1405.3	1458.2	1505.1	1597.2	1621.2	1659.2	1683.7	1710.4	1733.1	1735.0	1734.4
62.5°	1470.4	1551.9	1627.7	1764.3	1811.0	1854.8	1887.6	1913.5	1929.3	1945.3	1952.8
63°	1472.3	1561.5	1642.1	1783.0	1832.1	1873.8	1905.0	1929.0	1945.6	1955.2	1960.0
65°	1427.2	1535.3	1631.4	1771.8	1818.0	1859.9	1876.2	1891.9	1899.9	1903.6	1889.5
67.5°	1209.7	1315.4	1427.5	1584.4	1623.9	1674.1	1687.5	1695.5	1699.2	1698.4	1686.4
70°	904.6	993.2	1117.8	1297.2	1349.5	1398.6	1429.1	1442.2	1446.4	1445.1	1427.2
72.5°	631.5	683.6	786.3	986.0	1057.3	1120.3	1157.9	1177.4	1181.4	1173.4	1156.8
75°	530.4	533.0	556.3	665.4	732.2	799.4	841.9	854.1	846.1	821.8	779.7
77.5°	473.5	479.4	479.4	495.7	508.7	527.4	531.4	501.5	466.8	422.0	385.7
80°	397.2	417.7	432.1	444.1	445.5	441.8	431.9	415.1	388.4	354.2	316.3
82.5°	241.3	281.9	298.4	360.3	390.8	411.3	409.7	387.3	367.0	331.5	299.2
85°	60.9	65.7	71.3	92.6	103.8	126.8	141.2	147.9	150.3	138.0	124.9
87.5°	5.9	4.0	6.7	5.1	7.2	5.3	7.2	6.7	8.3	8.8	9.6
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: P163232

CATALOG NUMBER: LDRL-SL2-F01-E-HSS

**CANDELA DISTRIBUTION (continued):**

	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°	82°
0°	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3
2.5°	62.2	61.9	61.7	61.4	61.1	60.9	60.3	60.3	59.8	59.5	59.3
5°	69.1	68.6	68.3	67.8	67.0	66.5	65.7	64.6	63.8	63.5	63.0
7.5°	77.9	76.6	76.1	75.3	74.2	72.6	71.5	70.7	69.4	68.6	67.0
10°	87.8	86.5	84.9	83.3	81.7	79.8	78.5	77.4	75.3	74.2	72.3
12.5°	100.4	98.0	96.1	94.0	91.8	89.7	88.1	84.9	83.0	80.6	79.0
15°	113.2	111.0	108.9	106.2	103.0	99.6	98.0	95.0	92.6	88.9	86.7
17.5°	128.6	124.7	121.5	118.2	115.3	112.1	108.9	104.4	100.9	97.7	93.4
20°	143.9	139.1	135.6	131.3	127.0	122.0	118.2	115.0	110.2	106.0	101.4
22.5°	160.2	155.3	149.7	145.5	139.6	135.6	130.5	125.2	120.4	114.8	109.2
25°	179.9	174.8	168.4	162.8	156.1	150.5	144.4	138.3	132.4	126.0	118.8
27.5°	204.2	198.9	191.9	185.2	176.4	169.5	163.6	155.3	147.9	139.9	131.6
30°	234.9	229.0	220.5	210.9	202.1	194.3	186.0	175.1	166.8	157.2	146.5
32.5°	274.9	268.0	256.5	247.4	236.5	226.3	214.9	203.9	192.2	179.6	167.4
35°	325.4	319.0	305.6	292.3	280.3	268.2	253.8	241.3	224.7	209.5	193.8
37.5°	377.7	366.2	353.9	339.5	324.6	310.1	292.5	275.2	256.2	239.7	219.9
40°	437.5	423.6	413.5	398.0	376.9	356.3	340.1	318.4	294.7	272.5	249.3
42.5°	519.4	503.9	485.8	462.3	447.1	423.1	402.0	376.4	345.1	320.3	292.3
45°	614.2	593.1	575.5	552.8	534.4	504.5	479.9	445.8	414.5	382.0	347.8
47.5°	722.3	696.1	670.5	648.1	618.7	589.4	558.1	521.8	481.8	446.0	405.4
50°	846.4	809.3	773.8	745.0	704.7	670.8	636.9	596.0	551.7	510.6	464.4
52.5°	984.4	941.4	894.4	850.1	803.4	759.9	719.1	672.1	622.7	572.5	521.0
55°	1150.9	1118.7	1063.4	1007.1	944.6	886.4	833.8	775.7	715.6	649.7	595.5
57.5°	1411.7	1396.0	1349.8	1293.5	1212.1	1141.3	1052.2	980.9	893.9	803.2	733.2
60°	1765.1	1745.6	1719.8	1674.1	1609.5	1513.4	1415.2	1304.4	1172.0	1046.3	927.0
62.5°	1953.6	1946.6	1925.5	1894.0	1833.7	1757.9	1658.9	1537.2	1387.7	1235.0	1082.9
63°	1959.2	1950.4	1932.2	1900.2	1847.1	1773.7	1676.5	1558.3	1412.0	1256.4	1101.0
65°	1883.4	1879.9	1861.5	1826.5	1790.2	1734.2	1658.9	1557.2	1434.4	1287.3	1132.8
67.5°	1670.4	1659.9	1631.7	1621.0	1595.6	1556.7	1499.3	1429.3	1341.5	1226.0	1092.5
70°	1412.8	1397.3	1361.8	1342.9	1311.9	1287.3	1252.4	1202.5	1148.3	1067.7	968.1
72.5°	1139.7	1107.7	1075.1	1025.8	982.5	938.8	900.0	864.8	805.3	772.7	697.2
75°	740.2	682.0	626.2	551.5	484.2	424.7	366.7	337.4	276.3	251.4	215.9
77.5°	351.3	318.7	274.9	241.0	197.8	161.5	131.9	99.0	77.7	60.9	46.4
80°	283.5	256.0	229.5	198.9	166.3	132.7	101.7	76.1	53.9	37.4	26.4
82.5°	252.8	222.9	190.3	169.2	147.1	120.4	98.8	80.6	59.5	43.5	29.6
85°	98.2	82.8	63.8	52.0	40.6	33.4	30.2	20.8	16.3	12.8	9.9
87.5°	8.5	6.9	5.6	3.7	4.0	2.1	2.4	1.6	1.3	1.3	1.1
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: P163232

CATALOG NUMBER: LDRL-SL2-F01-E-HSS

**CANDELA DISTRIBUTION (continued):**

	83°	84°	85°	86°	87°	88°	89°	90°	95°	105°	115°
0°	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3
2.5°	59.0	58.7	58.4	57.9	57.9	57.4	57.1	56.8	55.5	52.6	50.2
5°	61.9	61.4	60.9	60.0	59.5	58.7	58.2	57.4	54.5	48.8	44.0
7.5°	66.2	65.1	64.3	62.7	61.9	60.9	60.0	58.7	53.9	45.4	38.7
10°	71.3	69.4	68.1	66.2	64.6	63.3	61.9	60.0	53.4	41.6	33.9
12.5°	77.4	75.3	72.6	70.5	68.3	66.5	64.6	62.2	52.6	38.4	30.2
15°	83.5	80.3	78.5	75.5	72.6	69.9	67.3	65.1	52.9	35.0	27.0
17.5°	90.5	87.3	83.3	80.1	76.9	73.4	70.2	65.9	51.5	32.3	24.6
20°	97.2	92.6	88.9	84.9	80.3	76.1	72.1	68.3	50.4	29.6	22.4
22.5°	104.4	99.0	94.2	89.2	83.5	78.7	73.9	69.1	48.6	27.2	20.6
25°	113.2	107.0	100.1	94.0	88.1	82.2	76.1	70.2	46.7	25.1	19.2
27.5°	123.8	115.8	108.9	101.2	92.9	85.4	78.7	72.3	44.8	23.5	17.9
30°	137.5	128.1	118.2	108.4	99.6	91.0	81.7	73.7	43.0	21.9	16.5
32.5°	155.6	143.9	131.9	120.4	108.6	97.7	87.8	77.4	41.9	20.6	15.2
35°	179.6	164.4	149.7	135.3	121.2	107.8	95.0	83.3	41.9	19.0	13.6
37.5°	202.3	184.7	166.0	148.1	131.3	115.8	100.6	86.5	39.8	17.6	12.3
40°	226.9	205.8	183.9	162.8	142.5	123.3	106.0	89.7	37.9	16.0	10.9
42.5°	264.5	237.8	209.3	184.7	160.4	136.7	115.0	95.8	35.5	14.4	9.6
45°	313.9	280.0	246.4	216.5	185.5	156.4	130.8	107.0	35.0	13.1	8.3
47.5°	366.7	326.7	287.2	249.0	212.7	178.8	148.1	119.6	35.0	11.7	7.2
50°	419.3	369.1	327.0	282.7	241.8	201.8	165.2	132.7	35.2	10.7	5.9
52.5°	466.8	413.2	365.9	314.7	269.6	223.1	183.4	145.5	34.7	9.3	4.8
55°	532.8	469.8	415.1	358.5	305.6	253.3	208.2	164.7	35.0	8.3	4.0
57.5°	654.2	580.3	514.4	440.2	379.3	311.8	257.0	204.2	38.2	6.9	2.9
60°	828.5	732.4	639.8	549.3	471.9	391.6	320.6	258.4	44.8	5.6	2.1
62.5°	945.7	820.0	709.5	609.6	519.7	435.6	358.2	287.5	49.4	4.5	1.3
63°	957.7	827.7	716.7	613.6	521.8	437.7	359.8	289.6	49.6	4.3	1.3
65°	980.4	841.1	720.7	614.4	519.7	434.8	358.7	289.3	50.2	3.5	1.1
67.5°	954.5	820.5	697.5	591.5	501.0	417.5	345.4	278.7	49.9	2.4	0.8
70°	853.6	742.6	634.5	535.7	453.5	378.0	314.4	254.1	45.9	1.6	0.5
72.5°	626.7	551.2	467.4	396.1	341.7	283.7	242.1	190.8	35.5	1.1	0.3
75°	185.8	169.2	142.3	125.4	110.8	91.6	81.4	63.5	18.1	0.5	0.0
77.5°	37.1	33.6	30.2	27.5	25.9	22.2	21.1	17.4	7.5	0.3	0.0
80°	19.5	16.0	13.6	12.0	10.4	8.5	7.2	5.9	1.3	0.0	0.0
82.5°	18.7	12.5	9.1	7.5	6.4	5.1	4.0	2.9	0.8	0.0	0.0
85°	6.9	5.3	4.0	3.2	2.7	2.4	1.9	1.6	0.0	0.0	0.0
87.5°	1.1	0.8	0.8	0.5	0.5	0.3	0.3	0.3	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: P163232

CATALOG NUMBER: LDRL-SL2-F01-E-HSS

**CANDELA DISTRIBUTION (continued):**

	125°	135°	145°	155°	165°	175°	180°
0°	56.3	56.3	56.3	56.3	56.3	56.3	56.3
2.5°	47.8	45.6	44.6	43.2	43.2	43.0	43.5
5°	39.8	36.8	34.7	33.1	33.4	32.6	32.8
7.5°	33.6	30.7	28.8	27.8	27.5	27.2	27.2
10°	29.1	26.4	24.8	24.0	23.8	23.8	23.8
12.5°	25.9	23.2	21.9	21.3	21.3	21.1	21.1
15°	23.2	21.1	19.7	19.2	19.2	19.0	19.2
17.5°	21.1	19.0	17.9	17.4	17.4	17.1	17.1
20°	19.2	17.4	16.3	15.5	15.5	15.2	15.5
22.5°	17.6	15.8	14.4	13.9	13.6	13.3	13.6
25°	16.0	14.1	12.8	12.0	11.7	11.7	11.5
27.5°	14.7	12.8	11.2	10.4	10.1	10.1	9.9
30°	13.3	11.2	9.6	8.8	8.5	8.5	8.5
32.5°	12.0	9.6	8.3	7.5	7.2	7.2	7.2
35°	10.7	8.3	6.9	6.1	5.9	5.9	5.9
37.5°	9.1	6.9	5.3	4.8	4.5	4.3	4.3
40°	7.7	5.3	4.0	3.5	2.9	2.9	2.9
42.5°	6.4	4.3	2.9	2.1	1.9	1.6	1.9
45°	5.3	3.2	1.9	1.1	0.8	0.8	0.8
47.5°	4.3	2.1	0.8	0.3	0.3	0.3	0.3
50°	3.2	1.3	0.3	0.0	0.0	0.3	0.3
52.5°	2.4	0.8	0.0	0.0	0.0	0.0	0.0
55°	1.3	0.3	0.0	0.0	0.0	0.0	0.0
57.5°	0.8	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.3	0.0	0.0	0.0	0.0	0.0	0.0
63°	0.3	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.3	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)