

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: P146840

Luminaire Tested: **LDRL-T4-E01-E**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P146840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33696)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: LDRL-T4-E01-E  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(1) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT  
Light Source: (21) 4000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2938.6 lumens  
Efficiency: N/A  
Efficacy: 119.0 lumens/watt  
Luminous Opening: Rectangular (W 0.17' x L: 1' x H: 0')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B1 - U0 - G1

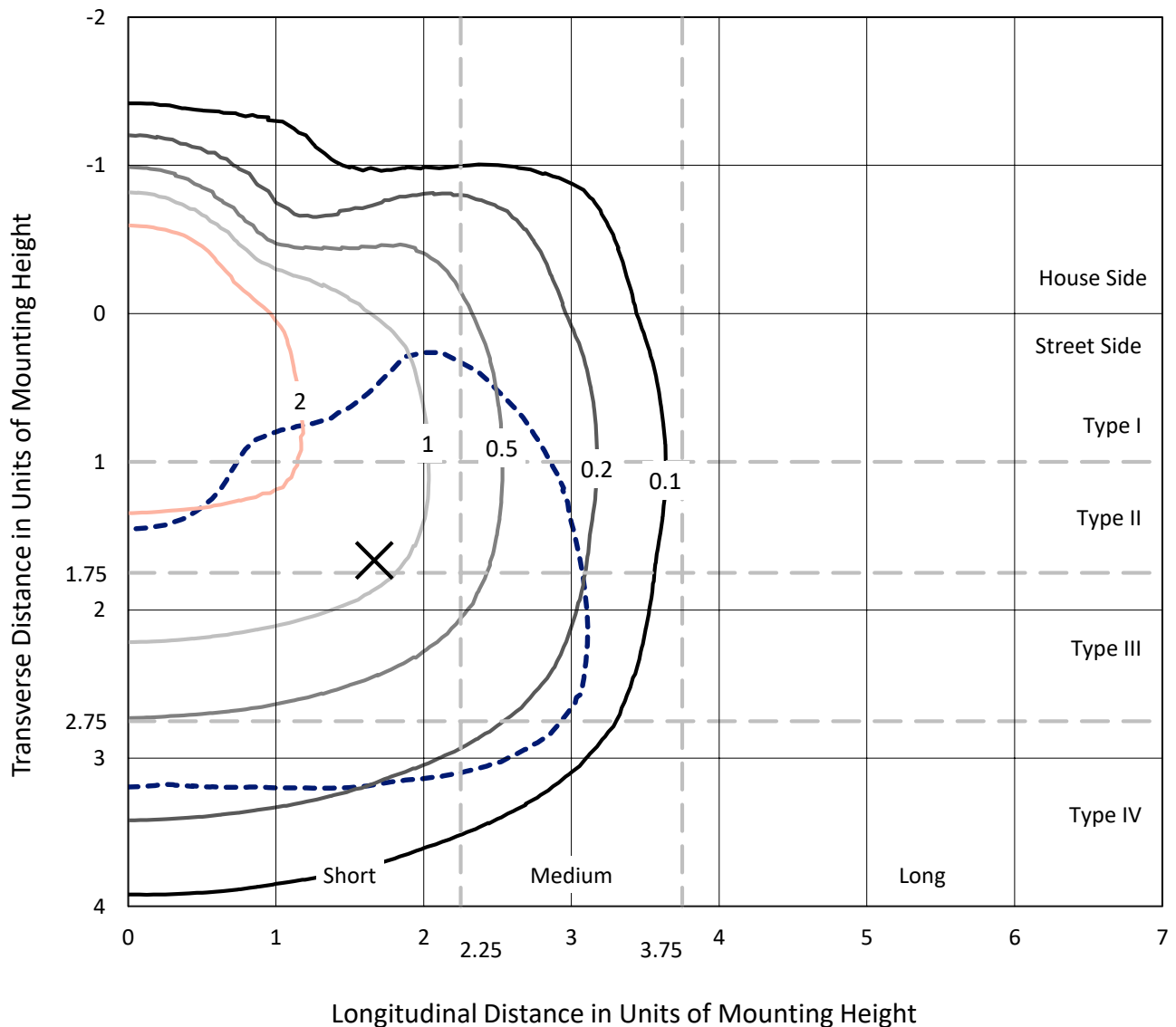
Input Watts (W): 24.7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

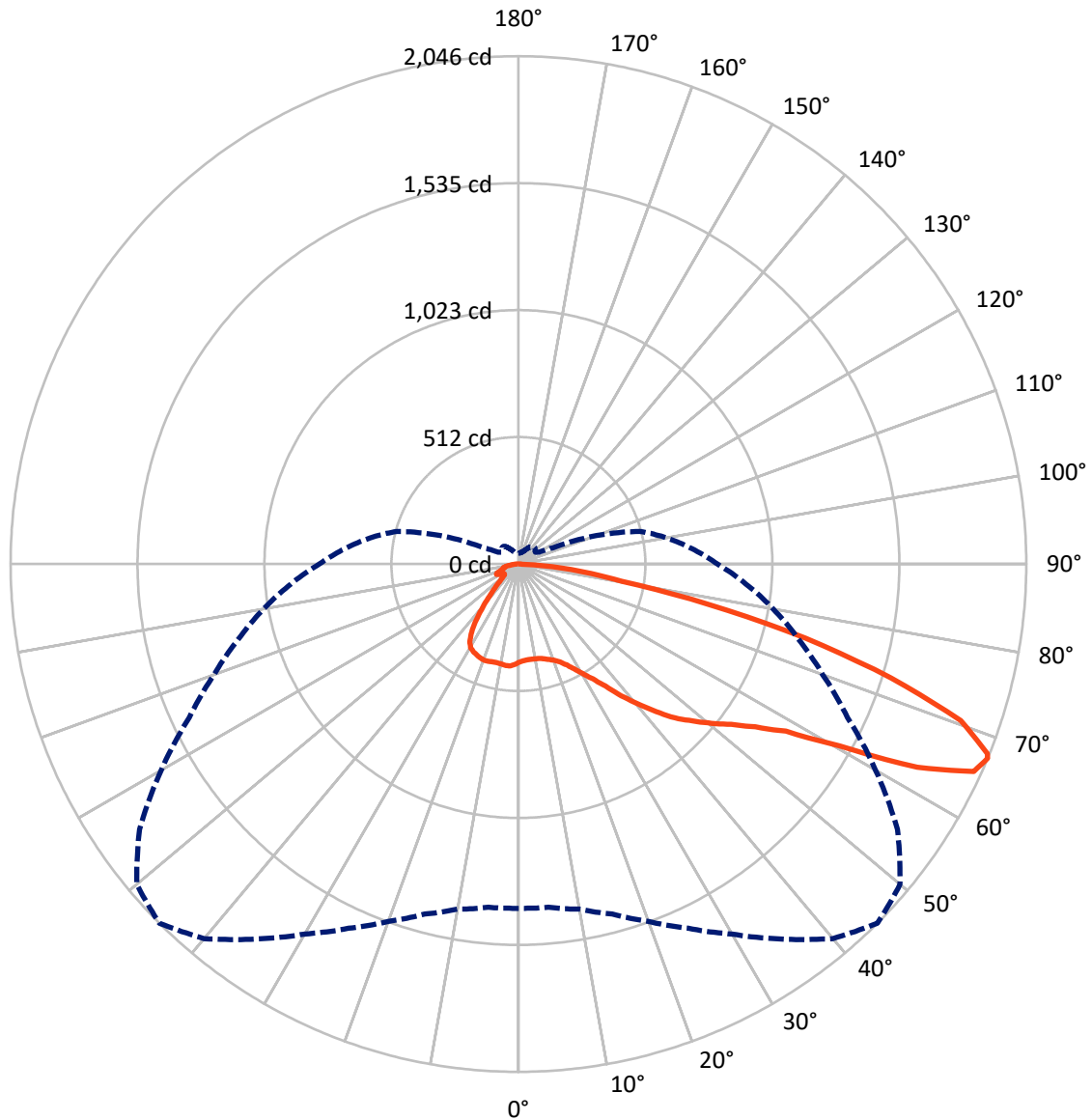
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4 fc  
 Type IV - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral      - - - Horizontal Cone Through 67-Deg Vertical

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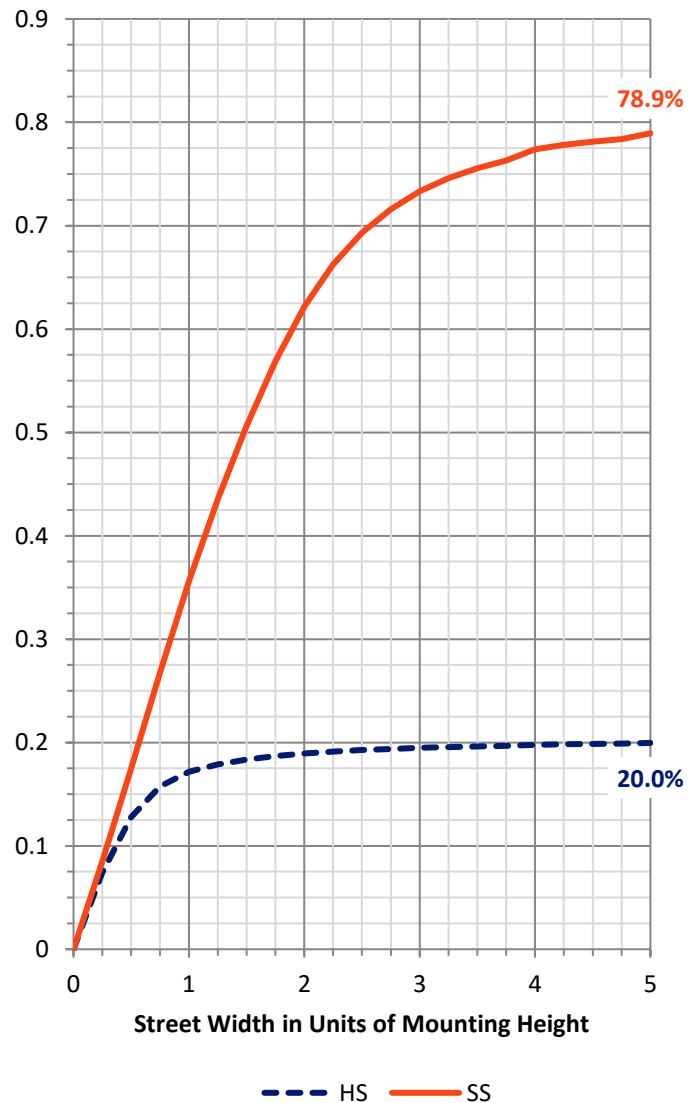
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	595.4	0.0	595.4
	% Fixture	20.3	0.0	20.3
<b>Street Side</b>	Lumens	2343.2	0.0	2343.2
	% Fixture	79.7	0.0	79.7
<b>Total</b>	Lumens	2938.6	0.0	2938.6
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	38.1	1.3
10°-20°	114.5	3.9
20°-30°	194.6	6.6
30°-40°	292.4	10.0
40°-50°	380.3	12.9
50°-60°	522.1	17.8
60°-70°	823.6	28.0
70°-80°	497.6	16.9
80°-90°	75.4	2.6
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°	2938.6	100.0
0°-180°	2938.6	100.0



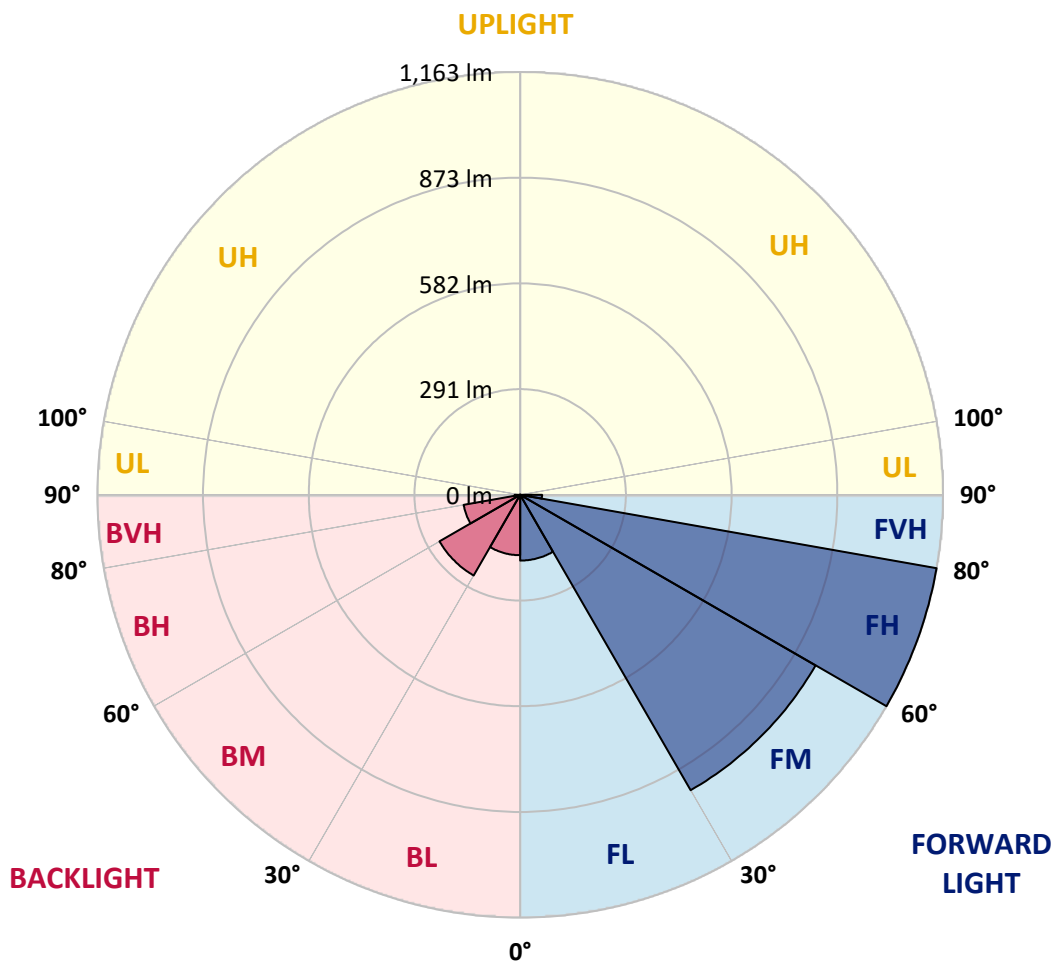
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	181.0	6.2			
FM	(30°-60°)	938.6	31.9			
FH	(60°-80°)	1163.5	39.6			G1/1800
FVH	(80°-90°)	60.2	2.0			G1/100
BL	(0°-30°)	166.2	5.7	B1/500		
BM	(30°-60°)	256.2	8.7	B1/1000		
BH	(60°-80°)	157.8	5.4	B1/500		G1/500
BVH	(80°-90°)	15.2	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G1**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6
2.5°	386.8	387.6	387.0	387.0	387.2	387.4	387.8	388.6	388.8	390.0	390.2
5°	379.0	379.2	379.2	379.4	380.6	381.6	382.6	384.0	385.2	387.4	388.8
7.5°	376.2	377.0	376.8	377.2	378.4	379.4	380.6	382.6	385.6	387.4	389.4
10°	380.8	381.4	380.8	381.0	381.2	382.2	382.6	384.0	386.4	388.0	389.8
12.5°	391.4	391.4	390.8	390.4	389.8	390.0	389.2	389.0	390.2	390.4	390.6
15°	405.4	407.0	405.0	403.4	402.6	401.8	399.2	398.2	398.0	396.2	394.4
17.5°	419.6	420.0	418.8	417.0	415.8	414.0	411.8	409.8	407.4	404.6	401.0
20°	435.4	435.6	434.0	431.4	430.0	427.8	425.0	421.6	418.6	414.2	410.2
22.5°	457.4	457.2	454.0	451.8	449.8	447.2	443.2	438.6	433.8	428.6	423.0
25°	482.6	482.6	480.4	476.8	475.8	472.0	467.6	462.2	457.2	449.8	443.0
27.5°	511.4	511.6	507.6	505.6	503.4	499.4	496.4	492.2	485.4	478.0	471.0
30°	545.6	544.6	541.4	537.2	536.4	533.2	529.0	526.0	517.6	512.4	504.6
32.5°	578.0	579.6	578.8	574.0	574.8	571.6	568.0	565.8	557.0	552.0	544.8
35°	626.4	627.8	629.0	627.2	628.2	626.4	623.4	617.6	610.4	603.8	593.8
37.5°	664.0	665.4	666.2	670.6	677.0	683.2	686.0	683.0	683.4	673.4	660.0
40°	694.8	698.2	703.0	711.4	724.2	736.0	742.4	747.4	750.0	740.6	723.2
42.5°	725.6	729.2	735.8	749.2	766.8	783.8	797.2	812.6	815.4	813.0	798.2
45°	757.8	762.0	770.2	785.4	806.0	828.2	849.8	871.6	882.6	884.4	866.4
47.5°	796.6	802.6	810.2	827.4	847.4	872.4	899.4	927.4	944.6	944.6	923.8
50°	845.0	851.8	858.2	875.4	895.4	921.2	952.4	983.6	1007.0	1008.4	983.2
52.5°	912.8	913.8	917.6	933.4	950.8	979.6	1009.2	1045.4	1072.4	1073.6	1044.6
55°	995.2	995.2	999.6	1012.8	1029.0	1052.8	1083.4	1123.6	1152.0	1158.2	1121.0
57.5°	1103.6	1107.6	1109.8	1125.2	1136.2	1161.4	1187.0	1230.8	1267.0	1271.0	1233.2
60°	1280.0	1272.4	1284.6	1298.2	1324.0	1342.4	1386.0	1430.0	1476.2	1487.2	1446.6
62.5°	1453.8	1462.0	1477.0	1501.6	1545.8	1587.0	1649.4	1716.2	1788.0	1802.8	1771.8
65°	1464.6	1469.6	1490.4	1532.8	1593.2	1666.6	1752.6	1853.2	1960.2	2015.6	1963.6
67°	1387.0	1388.4	1412.0	1460.2	1532.6	1619.6	1721.4	1844.2	1969.8	2046.0	2007.2
67.5°	1362.4	1365.0	1388.2	1437.4	1510.6	1599.6	1703.4	1829.6	1958.2	2037.8	2002.8
70°	1218.0	1218.0	1243.0	1292.6	1361.2	1448.0	1556.6	1684.0	1823.8	1890.8	1861.0
72.5°	1036.8	1030.2	1058.4	1096.0	1152.0	1227.8	1315.2	1415.8	1521.0	1569.8	1558.0
75°	753.6	766.0	780.6	808.4	857.0	916.8	968.0	1057.8	1140.4	1194.4	1180.2
77.5°	411.2	416.0	456.4	473.0	515.6	560.0	616.2	679.2	744.2	778.2	764.4
80°	244.4	253.8	277.8	297.6	320.6	354.4	395.2	409.0	421.8	421.0	396.0
82.5°	154.4	165.8	191.8	208.8	220.8	240.4	262.6	280.0	283.8	265.0	236.0
85°	25.0	41.4	108.2	127.2	134.8	145.4	161.8	169.2	158.0	138.0	143.0
87.5°	9.8	11.8	33.0	41.8	44.2	23.2	40.2	47.2	24.0	12.2	27.6
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°	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6
2.5°	391.4	392.4	393.4	394.6	395.0	396.0	397.8	397.6	399.0	399.6	400.6
5°	390.6	392.8	394.4	396.6	397.4	399.6	402.0	402.8	404.6	406.0	407.2
7.5°	392.2	394.6	396.6	399.2	401.0	402.8	404.6	406.8	408.4	409.4	410.2
10°	392.8	395.4	397.8	400.0	402.0	403.4	405.4	407.2	408.8	409.4	409.6
12.5°	393.0	394.8	397.2	399.6	401.4	403.2	404.6	406.6	407.8	408.0	407.6
15°	394.6	394.8	396.4	399.2	401.0	402.8	403.8	404.8	405.6	405.0	404.4
17.5°	399.4	398.0	398.0	399.4	400.4	401.2	401.4	401.2	400.4	399.2	398.2
20°	407.2	404.4	402.2	401.4	399.8	397.8	395.2	392.8	389.8	388.4	388.2
22.5°	419.4	415.2	411.2	407.2	402.0	396.2	390.2	385.0	380.8	378.6	378.8
25°	440.2	434.0	429.4	422.4	414.0	405.8	398.0	391.0	386.0	382.0	382.8
27.5°	468.2	461.2	457.2	449.2	439.6	429.2	420.0	410.4	403.2	398.2	399.2
30°	501.0	499.0	492.4	484.4	475.4	463.6	449.8	435.4	422.4	414.2	412.6
32.5°	540.6	538.4	531.2	524.4	512.8	499.8	481.8	459.0	438.6	423.0	416.2
35°	589.4	584.0	575.2	568.6	555.6	538.8	515.6	484.8	453.8	430.4	413.4
37.5°	650.2	636.8	622.2	605.0	585.8	565.4	538.6	502.6	464.2	431.0	400.8
40°	708.2	686.6	662.4	635.2	611.8	587.2	559.4	518.2	471.2	426.8	381.8
42.5°	772.8	739.2	706.4	669.0	638.2	609.0	577.2	529.2	472.6	415.4	357.2
45°	835.0	791.8	747.8	701.6	662.4	630.0	593.8	538.6	472.2	403.4	332.8
47.5°	890.4	838.8	784.4	732.4	686.8	651.2	611.6	551.4	477.6	400.0	316.6
50°	942.2	882.6	818.8	761.0	711.4	675.0	634.2	571.6	494.2	407.8	314.2
52.5°	995.6	930.8	857.8	795.6	743.8	701.6	660.4	597.4	517.4	423.8	319.6
55°	1065.2	990.8	913.0	844.0	784.6	739.2	691.6	628.6	542.4	442.4	329.8
57.5°	1168.8	1081.8	993.4	919.2	850.6	794.0	741.8	669.6	583.8	470.4	352.2
60°	1354.8	1258.4	1156.0	1059.0	980.0	913.8	847.4	757.8	660.2	534.0	403.6
62.5°	1658.6	1525.2	1383.6	1256.0	1147.4	1057.8	964.2	856.6	742.8	611.2	481.4
65°	1841.2	1657.2	1477.0	1329.0	1200.6	1085.8	972.6	857.0	746.8	631.8	516.4
67°	1863.8	1662.0	1462.6	1305.0	1167.4	1042.4	919.6	801.4	702.8	606.4	506.8
67.5°	1857.0	1652.4	1449.0	1289.8	1150.8	1029.8	909.0	788.0	692.0	595.6	499.6
70°	1723.0	1522.8	1321.6	1166.8	1033.6	909.8	795.6	674.4	600.2	531.2	448.2
72.5°	1430.0	1273.8	1105.2	976.2	861.2	754.0	653.6	552.2	492.6	443.8	385.4
75°	1060.4	917.2	774.6	697.0	607.8	522.0	444.4	369.4	346.4	334.8	300.4
77.5°	654.8	526.2	418.8	348.6	277.2	217.2	172.8	140.6	146.6	170.6	181.6
80°	326.0	240.8	186.4	148.2	119.8	96.8	71.0	52.0	62.2	73.8	83.6
82.5°	196.2	155.0	122.6	103.8	84.4	65.2	46.2	35.2	39.0	52.4	57.6
85°	121.8	97.6	78.0	65.2	54.0	40.0	26.2	26.0	27.6	34.8	39.8
87.5°	35.8	24.2	19.2	20.0	22.2	18.4	13.8	11.8	14.6	20.0	22.4
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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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6
2.5°	400.8	402.2	402.8	403.0	403.2	404.4	404.4	405.6	406.0	406.0	406.4
5°	408.4	409.8	410.4	410.6	411.0	411.6	411.4	412.2	412.6	412.4	412.4
7.5°	411.2	411.6	411.6	412.2	412.8	412.2	411.8	412.2	412.0	412.2	412.2
10°	410.2	409.8	409.8	409.4	410.0	408.8	408.8	409.2	409.0	409.4	410.0
12.5°	407.8	407.6	407.0	406.8	407.6	406.8	407.0	407.6	408.0	408.8	409.8
15°	404.4	403.8	403.8	404.6	406.6	407.2	408.0	409.0	409.2	409.6	410.0
17.5°	398.6	399.6	402.0	404.8	408.6	410.0	410.4	409.8	407.8	406.2	404.6
20°	390.6	395.0	401.2	407.2	411.8	411.6	409.0	405.2	400.4	397.0	394.8
22.5°	383.8	392.4	402.0	409.2	412.2	408.4	402.4	396.6	391.0	386.0	381.6
25°	388.6	396.8	405.0	409.4	409.2	402.6	394.6	388.2	380.6	373.6	366.2
27.5°	404.2	409.2	411.6	410.2	406.0	397.2	388.4	379.4	369.6	361.2	352.6
30°	414.8	414.8	412.4	406.8	399.4	389.6	378.8	367.2	355.6	345.8	336.0
32.5°	411.4	403.6	396.6	389.0	380.6	370.0	357.6	345.0	331.8	320.4	312.0
35°	396.6	379.8	365.2	354.4	345.6	333.0	318.6	304.2	293.4	285.6	280.8
37.5°	370.2	343.4	322.2	309.0	295.4	282.4	265.8	259.2	249.6	244.8	243.0
40°	338.2	299.0	272.4	255.4	241.0	224.8	213.6	209.4	205.8	204.8	204.0
42.5°	301.4	252.4	220.8	203.2	185.8	174.0	169.0	166.4	165.8	165.8	166.8
45°	263.2	205.0	168.6	154.4	140.0	133.8	132.6	131.4	131.6	131.0	131.4
47.5°	233.6	164.6	127.2	114.2	106.8	104.8	103.4	103.0	103.0	102.0	100.8
50°	218.2	137.6	99.8	89.6	85.4	84.0	84.0	83.2	81.6	80.6	78.0
52.5°	214.2	123.6	86.4	77.6	74.0	72.8	71.6	70.4	68.0	65.8	62.8
55°	217.4	119.2	82.2	74.0	70.0	68.6	67.6	65.6	62.2	59.0	55.6
57.5°	230.8	122.0	83.8	75.0	71.4	70.4	69.4	66.4	62.2	57.6	53.8
60°	267.4	135.2	90.6	80.4	77.4	77.6	76.2	72.4	66.4	59.8	54.2
62.5°	314.6	153.6	99.4	88.0	87.6	89.6	89.6	83.0	73.2	63.2	55.6
65°	341.6	159.4	100.6	89.0	92.4	98.2	97.8	89.0	75.6	63.2	55.0
67°	334.8	153.2	95.6	83.2	87.2	93.8	93.0	84.6	72.0	60.6	53.4
67.5°	329.4	151.2	94.4	81.8	85.8	91.2	91.2	82.8	70.4	59.8	52.8
70°	290.0	133.6	88.4	76.4	76.4	77.8	76.8	70.8	62.4	55.0	50.4
72.5°	241.8	116.8	83.6	72.6	68.8	68.0	66.6	62.4	57.0	51.8	47.8
75°	187.4	103.4	79.8	68.6	63.6	61.8	60.4	57.2	53.0	48.6	45.2
77.5°	131.2	88.6	74.8	65.2	59.8	58.4	56.2	52.6	49.2	45.4	42.2
80°	81.4	73.2	65.2	58.8	53.2	51.2	48.4	45.2	42.4	40.2	37.8
82.5°	58.0	53.8	48.6	45.2	39.4	33.4	35.8	36.0	34.2	32.8	32.2
85°	38.8	35.0	32.4	29.4	26.0	23.4	24.0	25.8	26.0	25.4	25.4
87.5°	21.2	18.0	17.4	18.0	15.6	14.8	15.0	16.6	16.8	16.8	17.0
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: P146840  
 CATALOG NUMBER: LDRL-T4-E01-E

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	395.6	395.6	395.6	395.6
2.5°	406.6	407.2	407.0	407.4
5°	412.8	413.2	413.0	413.2
7.5°	411.8	412.6	413.0	412.4
10°	410.2	411.4	412.2	412.2
12.5°	410.6	412.6	413.8	413.8
15°	410.2	411.8	412.2	412.2
17.5°	404.0	404.0	404.2	403.4
20°	393.2	392.0	391.6	390.2
22.5°	377.8	375.0	373.2	372.2
25°	360.2	355.8	353.0	351.4
27.5°	345.6	341.8	339.0	337.4
30°	329.4	325.0	323.4	322.2
32.5°	306.0	301.8	300.6	299.6
35°	275.6	274.2	271.0	268.8
37.5°	240.4	238.6	237.4	236.6
40°	203.6	203.8	202.8	201.0
42.5°	166.8	168.8	166.8	166.4
45°	131.0	133.2	133.2	133.8
47.5°	101.0	100.6	101.4	101.6
50°	76.4	75.2	74.8	74.2
52.5°	60.6	59.2	58.4	57.4
55°	53.4	51.8	51.0	50.8
57.5°	51.0	49.0	47.8	47.6
60°	50.4	47.6	46.0	45.6
62.5°	50.4	47.0	45.2	44.6
65°	49.8	46.4	44.8	44.2
67°	49.0	46.0	44.4	44.0
67.5°	48.6	45.8	44.4	43.8
70°	47.6	45.2	43.6	43.0
72.5°	45.4	43.4	41.8	41.4
75°	43.0	41.2	40.2	39.8
77.5°	40.2	38.6	37.4	36.4
80°	36.0	34.2	32.4	32.0
82.5°	30.6	28.6	27.2	27.0
85°	24.6	23.0	21.4	21.4
87.5°	17.2	16.2	15.2	14.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)