

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: P146886

Luminaire Tested: **LDRL-T4-F05-E-7050**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P146886  
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-F05-E-7050  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(5) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT  
Light Source: (35) 5000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12446.1 lumens  
Efficiency: N/A  
Efficacy: 93.4 lumens/watt  
Luminous Opening: Rectangular (W 0.83' x L: 1' x H: 0')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B2 - U0 - G3

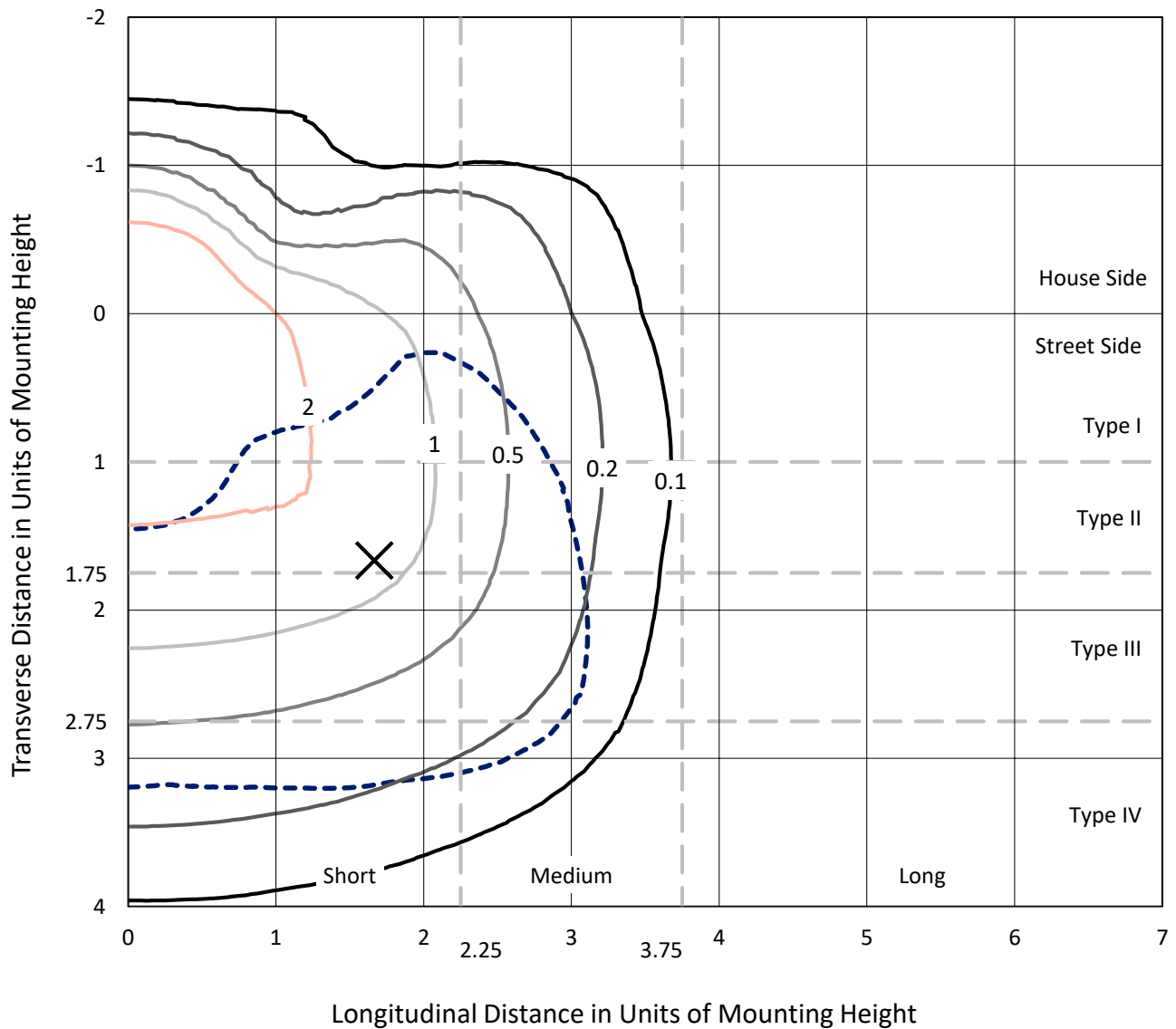
Input Watts (W): 133.3  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



REPORT NUMBER: P146886  
 CATALOG NUMBER: LDRL-T4-F05-E-7050

### Iso-Footcandle Lines of Horizontal Illumination

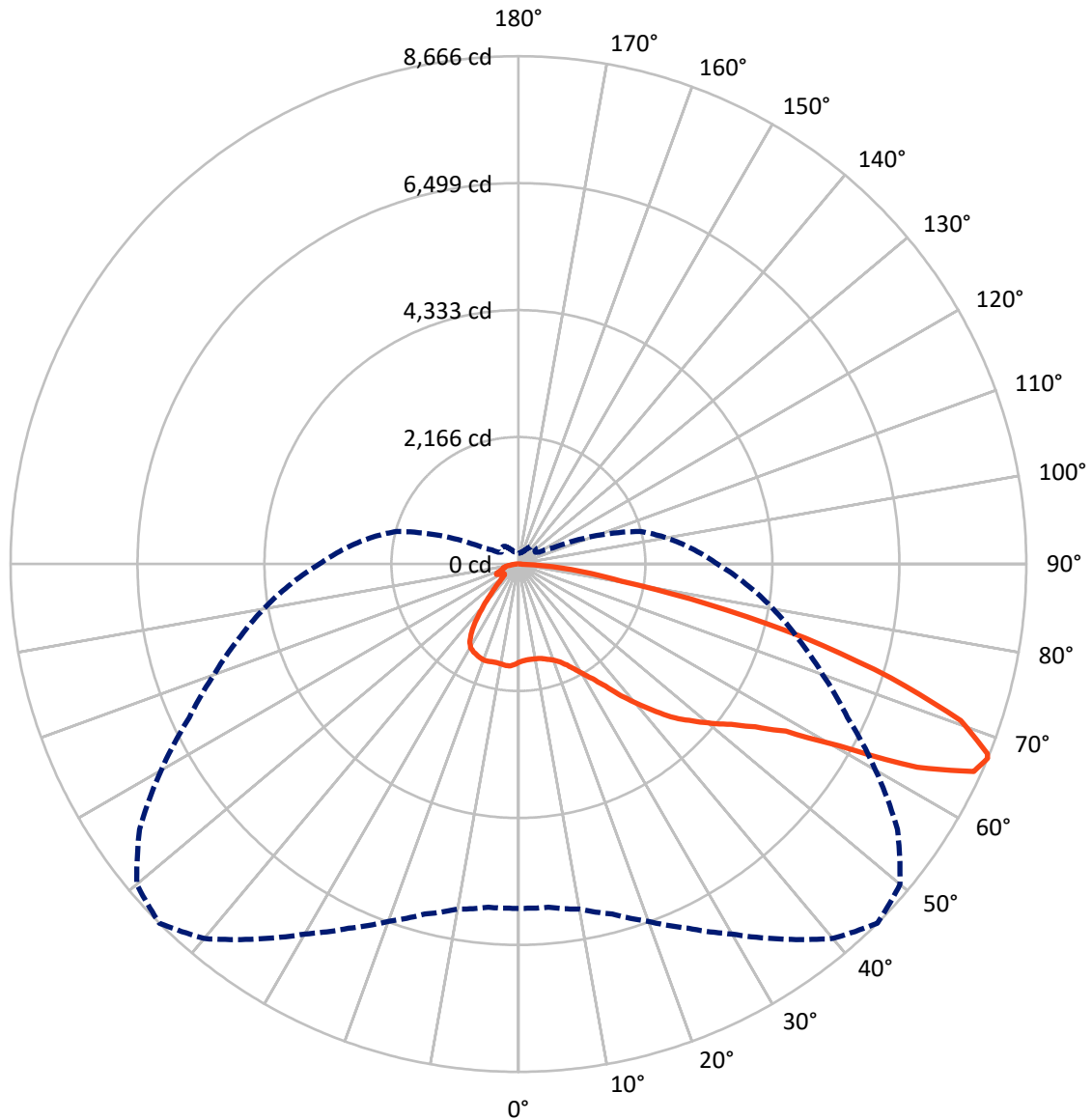
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.3 fc  
 Type IV - Short - Semi-Cutoff

REPORT NUMBER: P146886  
CATALOG NUMBER: LDRL-T4-F05-E-7050

### Luminous Intensity Polar Plot



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

REPORT NUMBER: P146886

CATALOG NUMBER: LDRL-T4-F05-E-7050

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2521.9	0.0	2521.9
	% Fixture	20.3	0.0	20.3
<b>Street Side</b>	Lumens	9924.2	0.0	9924.2
	% Fixture	79.7	0.0	79.7
<b>Total</b>	Lumens	12446.1	0.0	12446.1
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	161.5	1.3
10°-20°	484.9	3.9
20°-30°	824.2	6.6
30°-40°	1238.6	10.0
40°-50°	1610.6	12.9
50°-60°	2211.2	17.8
60°-70°	3488.2	28.0
70°-80°	2107.7	16.9
80°-90°	319.3	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°	12446.1	100.0
0°-180°	12446.1	100.0



REPORT NUMBER: P146886

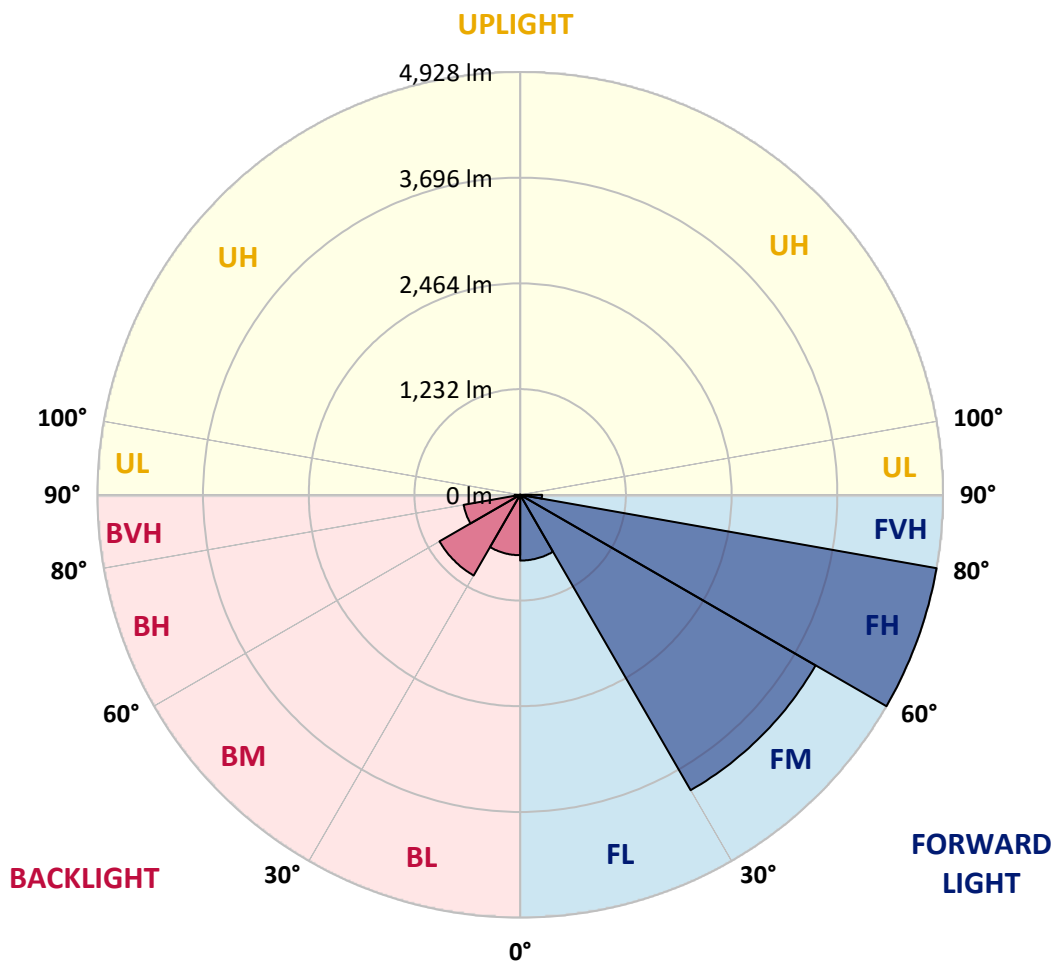
CATALOG NUMBER: LDRL-T4-F05-E-7050

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	766.4	6.2			
FM	(30°-60°)	3975.2	31.9			
FH	(60°-80°)	4927.7	39.6			G2/5000
FVH	(80°-90°)	255.0	2.0			G3/500
BL	(0°-30°)	704.1	5.7	B2/1000		
BM	(30°-60°)	1085.2	8.7	B2/2500		
BH	(60°-80°)	668.2	5.4	B2/1000		G2/1000
BVH	(80°-90°)	64.3	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G3**

Type IV Short





REPORT NUMBER: P146886

CATALOG NUMBER: LDRL-T4-F05-E-7050

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5
2.5°	1638.2	1641.6	1639.1	1639.1	1639.9	1640.8	1642.5	1645.9	1646.7	1651.8	1652.6
5°	1605.2	1606.1	1606.1	1606.9	1612.0	1616.2	1620.5	1626.4	1631.5	1640.8	1646.7
7.5°	1593.3	1596.7	1595.9	1597.6	1602.7	1606.9	1612.0	1620.5	1633.2	1640.8	1649.3
10°	1612.8	1615.4	1612.8	1613.7	1614.5	1618.8	1620.5	1626.4	1636.6	1643.3	1651.0
12.5°	1657.7	1657.7	1655.2	1653.5	1651.0	1651.8	1648.4	1647.6	1652.6	1653.5	1654.3
15°	1717.0	1723.8	1715.3	1708.6	1705.2	1701.8	1690.8	1686.5	1685.7	1678.1	1670.4
17.5°	1777.2	1778.9	1773.8	1766.2	1761.1	1753.4	1744.1	1735.7	1725.5	1713.6	1698.4
20°	1844.1	1844.9	1838.2	1827.1	1821.2	1811.9	1800.0	1785.6	1772.9	1754.3	1737.4
22.5°	1937.3	1936.4	1922.9	1913.5	1905.1	1894.1	1877.1	1857.6	1837.3	1815.3	1791.6
25°	2044.0	2044.0	2034.7	2019.4	2015.2	1999.1	1980.5	1957.6	1936.4	1905.1	1876.3
27.5°	2166.0	2166.8	2149.9	2141.4	2132.1	2115.1	2102.4	2084.7	2055.9	2024.5	1994.9
30°	2310.8	2306.6	2293.0	2275.2	2271.9	2258.3	2240.5	2227.8	2192.2	2170.2	2137.2
32.5°	2448.0	2454.8	2451.4	2431.1	2434.5	2420.9	2405.7	2396.4	2359.1	2337.9	2307.4
35°	2653.0	2659.0	2664.1	2656.4	2660.7	2653.0	2640.3	2615.8	2585.3	2557.3	2515.0
37.5°	2812.3	2818.2	2821.6	2840.2	2867.4	2893.6	2905.5	2892.8	2894.5	2852.1	2795.3
40°	2942.7	2957.1	2977.5	3013.0	3067.3	3117.2	3144.3	3165.5	3176.5	3136.7	3063.0
42.5°	3073.2	3088.4	3116.4	3173.1	3247.7	3319.7	3376.4	3441.7	3453.5	3443.4	3380.7
45°	3209.6	3227.4	3262.1	3326.5	3413.7	3507.7	3599.2	3691.6	3738.1	3745.8	3669.5
47.5°	3373.9	3399.3	3431.5	3504.4	3589.1	3694.9	3809.3	3927.9	4000.7	4000.7	3912.6
50°	3578.9	3607.7	3634.8	3707.6	3792.4	3901.6	4033.8	4165.9	4265.0	4271.0	4164.2
52.5°	3866.1	3870.3	3886.4	3953.3	4027.0	4149.0	4274.3	4427.7	4542.0	4547.1	4424.3
55°	4215.0	4215.0	4233.7	4289.6	4358.2	4459.0	4588.6	4758.9	4879.2	4905.4	4747.9
57.5°	4674.2	4691.1	4700.4	4765.6	4812.2	4919.0	5027.4	5212.9	5366.2	5383.2	5223.1
60°	5421.3	5389.1	5440.8	5498.4	5607.6	5685.6	5870.2	6056.6	6252.3	6298.9	6126.9
62.5°	6157.4	6192.1	6255.7	6359.8	6547.0	6721.5	6985.8	7268.8	7572.9	7635.5	7504.2
65°	6203.1	6224.3	6312.4	6492.0	6747.8	7058.7	7422.9	7849.0	8302.2	8536.8	8316.6
67°	5874.5	5880.4	5980.4	6184.5	6491.1	6859.6	7290.8	7810.9	8342.8	8665.6	8501.3
67.5°	5770.3	5781.3	5879.6	6087.9	6398.0	6774.9	7214.5	7749.0	8293.7	8630.9	8482.6
70°	5158.7	5158.7	5264.6	5474.6	5765.2	6132.8	6592.8	7132.4	7724.5	8008.3	7882.0
72.5°	4391.2	4363.3	4482.7	4642.0	4879.2	5200.2	5570.4	5996.4	6442.0	6648.7	6598.7
75°	3191.8	3244.3	3306.1	3423.9	3629.7	3883.0	4099.8	4480.2	4830.0	5058.7	4998.6
77.5°	1741.6	1761.9	1933.0	2003.3	2183.8	2371.8	2609.8	2876.7	3152.0	3296.0	3237.5
80°	1035.1	1074.9	1176.6	1260.4	1357.9	1501.0	1673.8	1732.3	1786.5	1783.1	1677.2
82.5°	653.9	702.2	812.3	884.3	935.2	1018.2	1112.2	1185.9	1202.0	1122.4	999.5
85°	105.9	175.3	458.3	538.7	570.9	615.8	685.3	716.6	669.2	584.5	605.7
87.5°	41.5	50.0	139.8	177.0	187.2	98.3	170.3	199.9	101.6	51.7	116.9
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: P146886

CATALOG NUMBER: LDRL-T4-F05-E-7050

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5
2.5°	1657.7	1662.0	1666.2	1671.3	1673.0	1677.2	1684.8	1684.0	1689.9	1692.5	1696.7
5°	1654.3	1663.7	1670.4	1679.8	1683.1	1692.5	1702.6	1706.0	1713.6	1719.6	1724.6
7.5°	1661.1	1671.3	1679.8	1690.8	1698.4	1706.0	1713.6	1723.0	1729.7	1734.0	1737.4
10°	1663.7	1674.7	1684.8	1694.2	1702.6	1708.6	1717.0	1724.6	1731.4	1734.0	1734.8
12.5°	1664.5	1672.1	1682.3	1692.5	1700.1	1707.7	1713.6	1722.1	1727.2	1728.0	1726.3
15°	1671.3	1672.1	1678.9	1690.8	1698.4	1706.0	1710.2	1714.5	1717.9	1715.3	1712.8
17.5°	1691.6	1685.7	1685.7	1691.6	1695.8	1699.2	1700.1	1699.2	1695.8	1690.8	1686.5
20°	1724.6	1712.8	1703.5	1700.1	1693.3	1684.8	1673.8	1663.7	1651.0	1645.0	1644.2
22.5°	1776.3	1758.5	1741.6	1724.6	1702.6	1678.1	1652.6	1630.6	1612.8	1603.5	1604.4
25°	1864.4	1838.2	1818.7	1789.0	1753.4	1718.7	1685.7	1656.0	1634.9	1617.9	1621.3
27.5°	1983.0	1953.4	1936.4	1902.5	1861.9	1817.8	1778.9	1738.2	1707.7	1686.5	1690.8
30°	2121.9	2113.5	2085.5	2051.6	2013.5	1963.5	1905.1	1844.1	1789.0	1754.3	1747.5
32.5°	2289.6	2280.3	2249.8	2221.0	2171.9	2116.8	2040.6	1944.0	1857.6	1791.6	1762.8
35°	2496.3	2473.5	2436.2	2408.2	2353.2	2282.0	2183.8	2053.3	1922.0	1822.9	1750.9
37.5°	2753.8	2697.1	2635.3	2562.4	2481.1	2394.7	2281.2	2128.7	1966.1	1825.4	1697.5
40°	2999.5	2908.0	2805.5	2690.3	2591.2	2487.0	2369.3	2194.8	1995.7	1807.7	1617.1
42.5°	3273.1	3130.8	2991.9	2833.5	2703.0	2579.3	2444.7	2241.4	2001.6	1759.4	1512.9
45°	3536.5	3353.6	3167.2	2971.5	2805.5	2668.3	2515.0	2281.2	1999.9	1708.6	1409.5
47.5°	3771.2	3552.6	3322.2	3102.0	2908.9	2758.1	2590.4	2335.4	2022.8	1694.2	1340.9
50°	3990.6	3738.1	3467.9	3223.1	3013.0	2858.9	2686.1	2420.9	2093.1	1727.2	1330.8
52.5°	4216.7	3942.3	3633.1	3369.7	3150.3	2971.5	2797.0	2530.2	2191.4	1795.0	1353.6
55°	4511.5	4196.4	3866.9	3574.7	3323.1	3130.8	2929.2	2662.4	2297.3	1873.7	1396.8
57.5°	4950.3	4581.8	4207.4	3893.2	3602.6	3362.9	3141.8	2836.0	2472.6	1992.3	1491.7
60°	5738.1	5329.8	4896.1	4485.3	4150.7	3870.3	3589.1	3209.6	2796.2	2261.7	1709.4
62.5°	7024.8	6459.8	5860.1	5319.6	4859.7	4480.2	4083.8	3628.0	3146.0	2588.7	2038.9
65°	7798.2	7018.9	6255.7	5628.8	5085.0	4598.8	4119.3	3629.7	3163.0	2675.9	2187.1
67°	7893.9	7039.2	6194.7	5527.2	4944.4	4415.0	3894.9	3394.2	2976.6	2568.3	2146.5
67.5°	7865.1	6998.5	6137.1	5462.8	4874.1	4361.6	3850.0	3337.5	2930.9	2522.6	2116.0
70°	7297.6	6449.6	5597.5	4941.8	4377.7	3853.3	3369.7	2856.3	2542.1	2249.8	1898.3
72.5°	6056.6	5395.0	4680.9	4134.6	3647.5	3193.5	2768.2	2338.8	2086.3	1879.7	1632.3
75°	4491.2	3884.7	3280.7	2952.1	2574.3	2210.9	1882.2	1564.5	1467.1	1418.0	1272.3
77.5°	2773.3	2228.7	1773.8	1476.5	1174.0	919.9	731.9	595.5	620.9	722.6	769.1
80°	1380.7	1019.9	789.5	627.7	507.4	410.0	300.7	220.2	263.4	312.6	354.1
82.5°	831.0	656.5	519.3	439.6	357.5	276.1	195.7	149.1	165.2	221.9	244.0
85°	515.9	413.4	330.4	276.1	228.7	169.4	111.0	110.1	116.9	147.4	168.6
87.5°	151.6	102.5	81.3	84.7	94.0	77.9	58.4	50.0	61.8	84.7	94.9
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: P146886

CATALOG NUMBER: LDRL-T4-F05-E-7050

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5	1675.5
2.5°	1697.5	1703.5	1706.0	1706.9	1707.7	1712.8	1712.8	1717.9	1719.6	1719.6	1721.3
5°	1729.7	1735.7	1738.2	1739.0	1740.7	1743.3	1742.4	1745.8	1747.5	1746.7	1746.7
7.5°	1741.6	1743.3	1743.3	1745.8	1748.4	1745.8	1744.1	1745.8	1745.0	1745.8	1745.8
10°	1737.4	1735.7	1735.7	1734.0	1736.5	1731.4	1731.4	1733.1	1732.3	1734.0	1736.5
12.5°	1727.2	1726.3	1723.8	1723.0	1726.3	1723.0	1723.8	1726.3	1728.0	1731.4	1735.7
15°	1712.8	1710.2	1710.2	1713.6	1722.1	1724.6	1728.0	1732.3	1733.1	1734.8	1736.5
17.5°	1688.2	1692.5	1702.6	1714.5	1730.6	1736.5	1738.2	1735.7	1727.2	1720.4	1713.6
20°	1654.3	1673.0	1699.2	1724.6	1744.1	1743.3	1732.3	1716.2	1695.8	1681.4	1672.1
22.5°	1625.5	1662.0	1702.6	1733.1	1745.8	1729.7	1704.3	1679.8	1656.0	1634.9	1616.2
25°	1645.9	1680.6	1715.3	1734.0	1733.1	1705.2	1671.3	1644.2	1612.0	1582.3	1551.0
27.5°	1711.9	1733.1	1743.3	1737.4	1719.6	1682.3	1645.0	1606.9	1565.4	1529.8	1493.4
30°	1756.8	1756.8	1746.7	1723.0	1691.6	1650.1	1604.4	1555.2	1506.1	1464.6	1423.1
32.5°	1742.4	1709.4	1679.8	1647.6	1612.0	1567.1	1514.6	1461.2	1405.3	1357.0	1321.4
35°	1679.8	1608.6	1546.8	1501.0	1463.7	1410.4	1349.4	1288.4	1242.7	1209.6	1189.3
37.5°	1567.9	1454.4	1364.6	1308.7	1251.1	1196.1	1125.8	1097.8	1057.2	1036.8	1029.2
40°	1432.4	1266.4	1153.7	1081.7	1020.7	952.1	904.7	886.9	871.6	867.4	864.0
42.5°	1276.5	1069.0	935.2	860.6	786.9	737.0	715.8	704.8	702.2	702.2	706.5
45°	1114.8	868.3	714.1	653.9	593.0	566.7	561.6	556.5	557.4	554.8	556.5
47.5°	989.4	697.1	538.7	483.7	452.3	443.9	437.9	436.2	436.2	432.0	426.9
50°	924.2	582.8	422.7	379.5	361.7	355.8	355.8	352.4	345.6	341.4	330.4
52.5°	907.2	523.5	365.9	328.7	313.4	308.3	303.3	298.2	288.0	278.7	266.0
55°	920.8	504.9	348.1	313.4	296.5	290.5	286.3	277.8	263.4	249.9	235.5
57.5°	977.5	516.7	354.9	317.7	302.4	298.2	293.9	281.2	263.4	244.0	227.9
60°	1132.5	572.6	383.7	340.5	327.8	328.7	322.7	306.6	281.2	253.3	229.6
62.5°	1332.4	650.6	421.0	372.7	371.0	379.5	379.5	351.5	310.0	267.7	235.5
65°	1446.8	675.1	426.1	376.9	391.3	415.9	414.2	376.9	320.2	267.7	232.9
67°	1418.0	648.9	404.9	352.4	369.3	397.3	393.9	358.3	304.9	256.7	226.2
67.5°	1395.1	640.4	399.8	346.5	363.4	386.3	386.3	350.7	298.2	253.3	223.6
70°	1228.3	565.8	374.4	323.6	323.6	329.5	325.3	299.9	264.3	232.9	213.5
72.5°	1024.1	494.7	354.1	307.5	291.4	288.0	282.1	264.3	241.4	219.4	202.5
75°	793.7	437.9	338.0	290.5	269.4	261.7	255.8	242.3	224.5	205.8	191.4
77.5°	555.7	375.3	316.8	276.1	253.3	247.3	238.0	222.8	208.4	192.3	178.7
80°	344.8	310.0	276.1	249.0	225.3	216.9	205.0	191.4	179.6	170.3	160.1
82.5°	245.7	227.9	205.8	191.4	166.9	141.5	151.6	152.5	144.8	138.9	136.4
85°	164.3	148.2	137.2	124.5	110.1	99.1	101.6	109.3	110.1	107.6	107.6
87.5°	89.8	76.2	73.7	76.2	66.1	62.7	63.5	70.3	71.2	71.2	72.0
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: P146886

CATALOG NUMBER: LDRL-T4-F05-E-7050

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1675.5	1675.5	1675.5	1675.5
2.5°	1722.1	1724.6	1723.8	1725.5
5°	1748.4	1750.1	1749.2	1750.1
7.5°	1744.1	1747.5	1749.2	1746.7
10°	1737.4	1742.4	1745.8	1745.8
12.5°	1739.0	1747.5	1752.6	1752.6
15°	1737.4	1744.1	1745.8	1745.8
17.5°	1711.1	1711.1	1711.9	1708.6
20°	1665.4	1660.3	1658.6	1652.6
22.5°	1600.1	1588.3	1580.6	1576.4
25°	1525.6	1506.9	1495.1	1488.3
27.5°	1463.7	1447.7	1435.8	1429.0
30°	1395.1	1376.5	1369.7	1364.6
32.5°	1296.0	1278.2	1273.2	1268.9
35°	1167.3	1161.3	1147.8	1138.5
37.5°	1018.2	1010.6	1005.5	1002.1
40°	862.3	863.2	858.9	851.3
42.5°	706.5	714.9	706.5	704.8
45°	554.8	564.2	564.2	566.7
47.5°	427.8	426.1	429.5	430.3
50°	323.6	318.5	316.8	314.3
52.5°	256.7	250.7	247.3	243.1
55°	226.2	219.4	216.0	215.2
57.5°	216.0	207.5	202.5	201.6
60°	213.5	201.6	194.8	193.1
62.5°	213.5	199.1	191.4	188.9
65°	210.9	196.5	189.7	187.2
67°	207.5	194.8	188.1	186.4
67.5°	205.8	194.0	188.1	185.5
70°	201.6	191.4	184.7	182.1
72.5°	192.3	183.8	177.0	175.3
75°	182.1	174.5	170.3	168.6
77.5°	170.3	163.5	158.4	154.2
80°	152.5	144.8	137.2	135.5
82.5°	129.6	121.1	115.2	114.4
85°	104.2	97.4	90.6	90.6
87.5°	72.8	68.6	64.4	60.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)