

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: P146360

Luminaire Tested: **LDRL-T2-E05-E**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P146360
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33694)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-T2-E05-E
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(5) LIGHTBARS WITH AccuLED OPTICS - TYPE 2
Light Source: (105) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14992.8 lumens
Efficiency: N/A
Efficacy: 117.8 lumens/watt
Luminous Opening: Rectangular (W 0.83' x L: 1' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G3

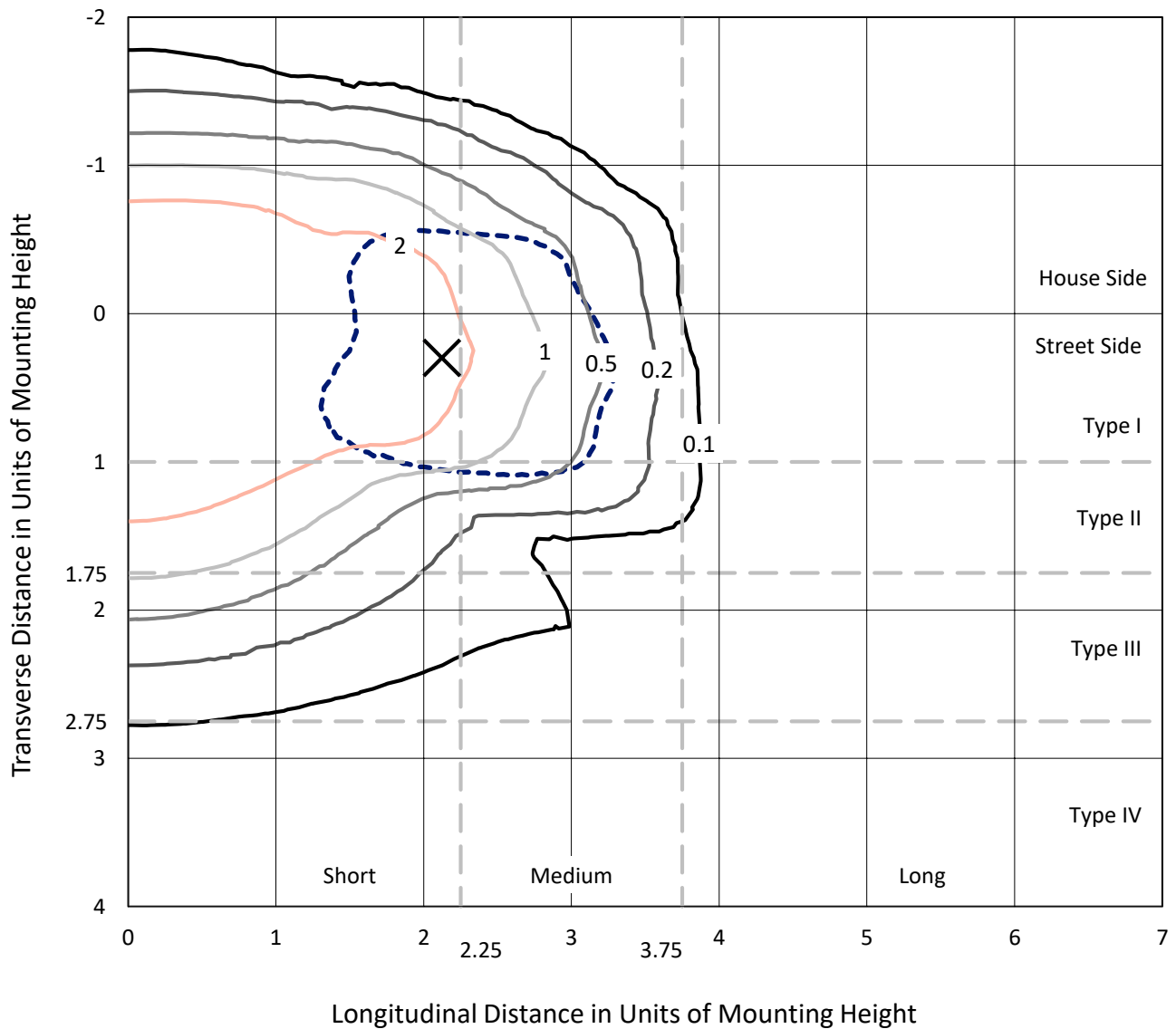
Input Watts (W): 127.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P146360
 CATALOG NUMBER: LDRL-T2-E05-E

Iso-Footcandle Lines of Horizontal Illumination

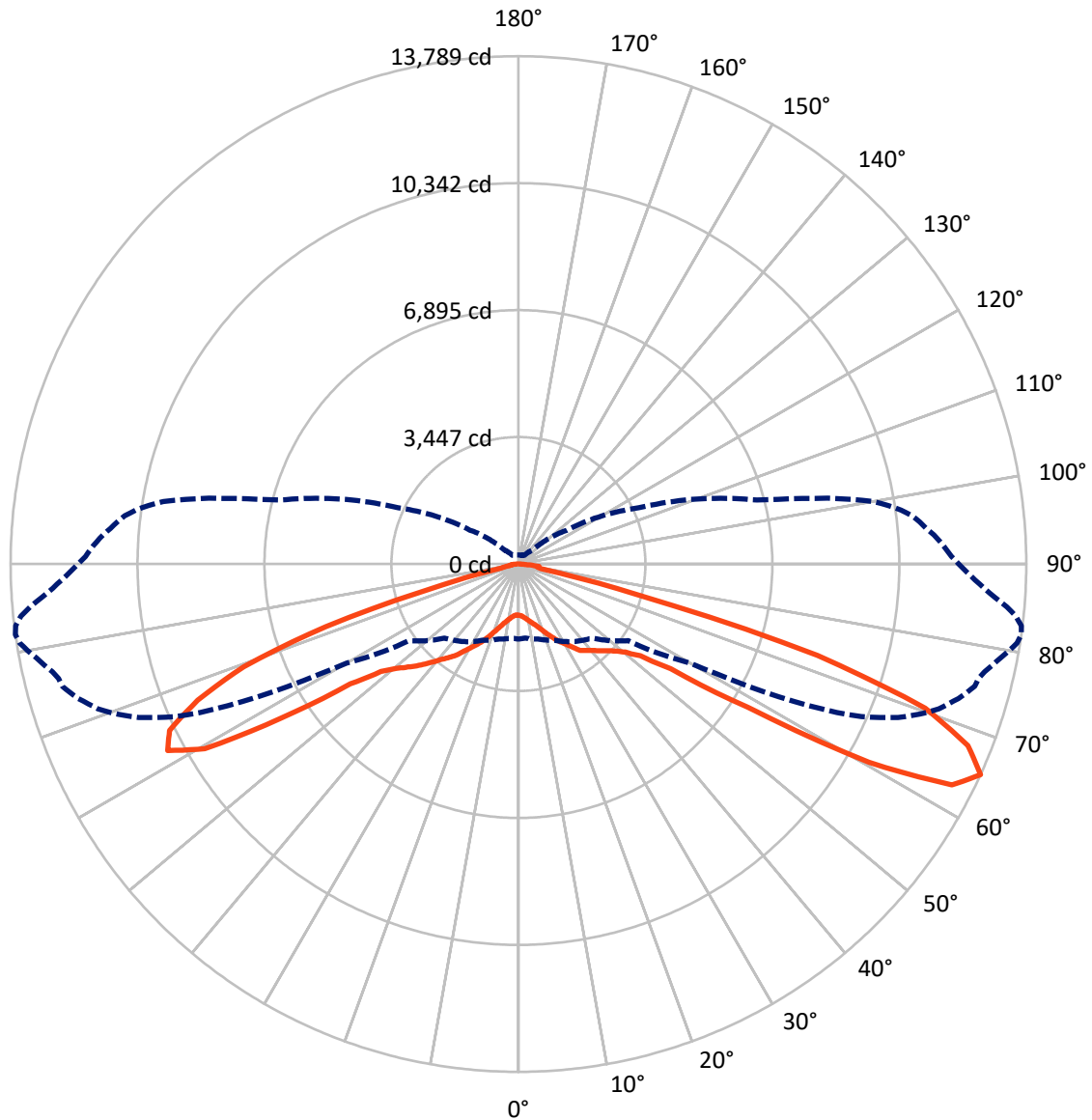
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.5 fc
 Type II - Short - Semi-Cutoff

REPORT NUMBER: P146360
CATALOG NUMBER: LDRL-T2-E05-E

Luminous Intensity Polar Plot



— Vertical Plane Through 82-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

REPORT NUMBER: P146360
 CATALOG NUMBER: LDRL-T2-E05-E

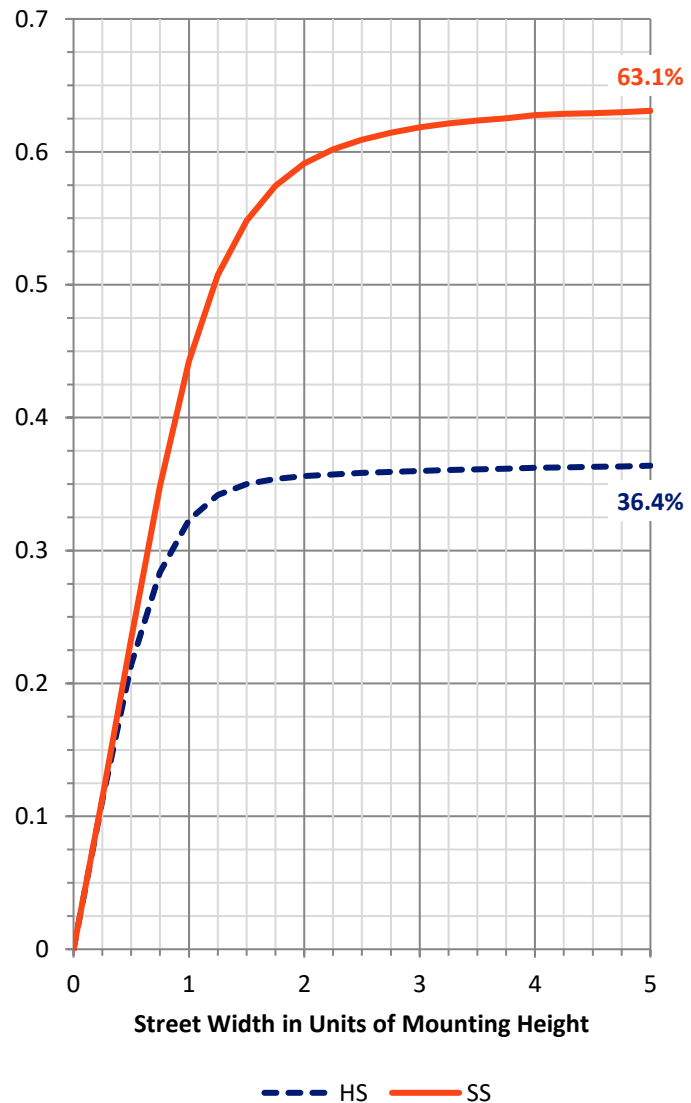
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5519.0	0.0	5519.0
	% Fixture	36.8	0.0	36.8
Street Side	Lumens	9473.9	0.0	9473.9
	% Fixture	63.2	0.0	63.2
Total	Lumens	14992.8	0.0	14992.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.9	0.9
10°-20°	496.5	3.3
20°-30°	984.8	6.6
30°-40°	1680.4	11.2
40°-50°	2519.8	16.8
50°-60°	3507.3	23.4
60°-70°	4029.4	26.9
70°-80°	1390.5	9.3
80°-90°	243.2	1.6
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°	14992.8	100.0
0°-180°	14992.8	100.0

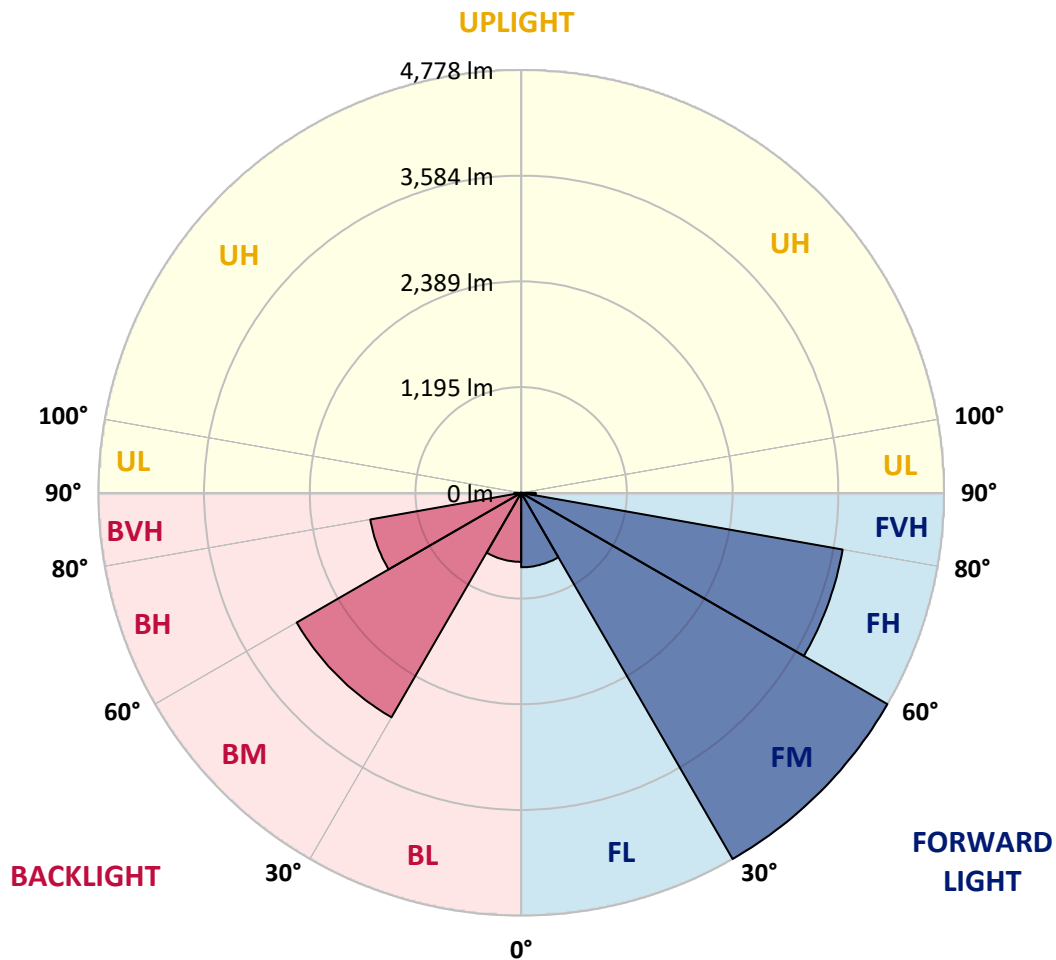


REPORT NUMBER: P146360
 CATALOG NUMBER: LDRL-T2-E05-E

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	841.6	5.6			
FM	(30°-60°)	4778.4	31.9			
FH	(60°-80°)	3688.7	24.6			G2/5000
FVH	(80°-90°)	165.1	1.1			G2/225
BL	(0°-30°)	780.7	5.2	B2/1000		
BM	(30°-60°)	2929.1	19.5	B3/5000		
BH	(60°-80°)	1731.2	11.5	B3/2500		G3/2500
BVH	(80°-90°)	78.0	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3
 Type II Short





REPORT NUMBER: P146360
 CATALOG NUMBER: LDRL-T2-E05-E

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	61°	62°	64°
0°	1389	1389	1389	1389	1389	1389	1389	1389	1389	1389	1389
2.5°	1466	1465	1464	1460	1458	1450	1442	1437	1433	1435	1429
5°	1551	1551	1547	1542	1536	1525	1505	1495	1493	1493	1486
7.5°	1638	1644	1633	1629	1619	1602	1579	1566	1562	1562	1556
10°	1748	1745	1733	1725	1705	1682	1651	1636	1630	1635	1625
12.5°	1864	1863	1845	1830	1802	1765	1724	1704	1700	1700	1694
15°	1982	1983	1963	1935	1891	1841	1795	1776	1771	1769	1762
17.5°	2072	2082	2062	2026	1972	1917	1868	1849	1848	1846	1838
20°	2123	2125	2114	2088	2040	1987	1953	1944	1943	1944	1946
22.5°	2121	2124	2120	2110	2079	2050	2046	2051	2054	2051	2058
25°	2105	2109	2109	2114	2106	2116	2148	2162	2163	2165	2180
27.5°	2140	2144	2143	2152	2159	2194	2252	2277	2280	2287	2301
30°	2302	2303	2285	2284	2291	2319	2378	2407	2404	2418	2427
32.5°	2558	2566	2548	2529	2526	2530	2541	2561	2558	2565	2577
35°	2850	2851	2841	2852	2858	2831	2779	2774	2758	2761	2765
37.5°	3118	3125	3144	3214	3254	3188	3086	3022	3012	3007	2972
40°	3369	3404	3450	3541	3596	3620	3475	3346	3311	3297	3242
42.5°	3663	3681	3735	3839	3912	4021	3924	3782	3741	3681	3612
45°	3912	3924	3958	4046	4199	4381	4392	4293	4261	4201	4100
47.5°	4079	4078	4103	4189	4388	4666	4831	4827	4790	4769	4683
50°	4144	4143	4159	4255	4472	4836	5200	5325	5324	5332	5288
52.5°	4156	4155	4157	4234	4455	4895	5466	5761	5804	5858	5907
55°	4066	4076	4098	4179	4391	4871	5663	6170	6273	6383	6561
57.5°	3858	3877	3953	4098	4323	4812	5800	6676	6885	7151	7633
60°	3560	3577	3682	3874	4125	4555	5641	6888	7285	7747	8735
62.5°	3033	3081	3137	3273	3536	3882	4927	6530	7145	7823	9183
65°	2037	2017	2110	2283	2572	2841	3630	5386	6164	7097	8780
67.5°	1261	1264	1327	1496	1714	1923	2301	3433	4123	5010	7034
70°	1042	1054	1105	1262	1448	1684	1708	1820	2129	2558	4345
72.5°	827	832	884	1015	1278	1602	2028	1383	1359	1424	2204
75°	513	517	543	627	829	1248	2233	1590	1490	1406	1420
77.5°	265	273	287	325	435	697	1758	2016	1902	1788	1565
80°	150	150	163	172	206	284	894	2182	2384	2433	2185
82.5°	67	75	101	108	118	130	296	1311	1819	2272	2808
85°	40	39	64	70	73	62	111	535	850	1244	1861
87.5°	16	17	27	29	34	25	42	115	169	245	346
90°	0	0	0	0	0	0	0	0	0	0	0



REPORT NUMBER: P146360
 CATALOG NUMBER: LDRL-T2-E05-E

CANDELA DISTRIBUTION (continued):

	65°	66°	67°	68°	69°	70°	71°	72°	73°	74°	75°
0°	1389	1389	1389	1389	1389	1389	1389	1389	1389	1389	1389
2.5°	1428	1428	1427	1426	1425	1422	1421	1419	1418	1415	1414
5°	1485	1482	1481	1479	1478	1474	1474	1470	1467	1463	1462
7.5°	1553	1549	1546	1544	1543	1536	1536	1530	1529	1524	1522
10°	1622	1619	1615	1613	1612	1608	1604	1600	1597	1594	1590
12.5°	1691	1685	1683	1680	1678	1675	1674	1665	1665	1662	1658
15°	1758	1757	1750	1749	1747	1748	1742	1743	1740	1735	1733
17.5°	1840	1833	1836	1831	1832	1830	1828	1827	1829	1828	1830
20°	1942	1940	1943	1936	1943	1944	1942	1947	1945	1947	1941
22.5°	2063	2056	2056	2061	2064	2073	2068	2072	2076	2079	2075
25°	2185	2183	2187	2191	2197	2205	2203	2204	2212	2217	2218
27.5°	2309	2309	2321	2321	2329	2338	2341	2345	2351	2358	2358
30°	2437	2437	2448	2458	2462	2473	2479	2485	2496	2498	2507
32.5°	2583	2586	2597	2603	2612	2625	2627	2634	2647	2651	2658
35°	2773	2763	2773	2784	2789	2785	2807	2816	2825	2830	2839
37.5°	2969	2952	2953	2951	2939	2946	2946	2944	2950	2949	2953
40°	3217	3187	3178	3159	3133	3119	3104	3102	3087	3093	3082
42.5°	3557	3512	3488	3429	3397	3359	3322	3290	3273	3254	3240
45°	4024	3971	3913	3818	3763	3687	3638	3565	3516	3475	3446
47.5°	4610	4521	4474	4385	4289	4174	4069	3967	3884	3794	3723
50°	5291	5180	5143	5025	4971	4842	4730	4604	4474	4338	4208
52.5°	5894	5881	5896	5817	5815	5750	5626	5479	5358	5221	5050
55°	6617	6746	6774	6763	6822	6820	6808	6793	6697	6503	6444
57.5°	7893	8038	8252	8349	8563	8588	8786	8709	8856	8816	8843
60°	9192	9637	10043	10352	10652	10925	11259	11402	11509	11676	11852
62.5°	9773	10334	10818	11258	11631	11977	12264	12536	12750	12942	13090
65°	9538	10189	10661	11120	11468	11790	12075	12279	12492	12666	12823
67.5°	7941	8808	9424	9945	10382	10749	11045	11326	11477	11667	11752
70°	5260	6372	7243	7947	8640	9056	9407	9734	9906	10060	10155
72.5°	2889	3649	4579	5416	6082	6628	7037	7347	7524	7656	7519
75°	1637	2012	2467	2930	3435	3820	3928	4060	4091	4023	3847
77.5°	1505	1505	1506	1495	1517	1544	1528	1501	1379	1352	1314
80°	1957	1744	1516	1245	1015	856	807	811	850	926	1010
82.5°	2774	2564	2235	1822	1450	1138	933	839	838	914	1023
85°	2023	2040	1967	1740	1388	1093	883	678	612	612	604
87.5°	354	365	315	282	197	139	125	110	109	113	104
90°	0	0	0	0	0	0	0	0	0	0	0



REPORT NUMBER: P146360
 CATALOG NUMBER: LDRL-T2-E05-E

CANDELA DISTRIBUTION (continued):

	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°	86°
0°	1389	1389	1389	1389	1389	1389	1389	1389	1389	1389	1389
2.5°	1414	1412	1410	1409	1409	1407	1407	1405	1406	1405	1402
5°	1460	1459	1456	1451	1450	1446	1447	1443	1443	1441	1436
7.5°	1518	1516	1514	1510	1506	1506	1499	1499	1494	1492	1488
10°	1587	1581	1578	1574	1573	1572	1565	1565	1559	1558	1555
12.5°	1655	1651	1648	1646	1641	1640	1637	1634	1631	1629	1628
15°	1729	1727	1724	1724	1724	1719	1716	1714	1714	1711	1713
17.5°	1825	1828	1824	1822	1819	1824	1819	1819	1822	1822	1815
20°	1944	1948	1944	1945	1943	1944	1945	1947	1951	1944	1945
22.5°	2076	2077	2080	2077	2082	2079	2085	2090	2089	2087	2088
25°	2220	2217	2218	2227	2234	2232	2233	2241	2239	2237	2238
27.5°	2366	2364	2367	2375	2383	2382	2380	2386	2386	2381	2383
30°	2511	2514	2519	2519	2523	2527	2524	2531	2532	2528	2533
32.5°	2664	2670	2668	2682	2682	2683	2686	2685	2695	2687	2690
35°	2848	2850	2862	2872	2878	2883	2883	2886	2891	2887	2893
37.5°	2960	2964	2968	2974	2974	2974	2979	2980	2983	2982	2984
40°	3083	3084	3085	3086	3090	3092	3087	3094	3089	3091	3094
42.5°	3232	3218	3220	3217	3224	3215	3217	3225	3221	3227	3227
45°	3405	3389	3375	3367	3367	3355	3357	3360	3365	3373	3387
47.5°	3661	3606	3579	3551	3537	3522	3527	3528	3530	3543	3578
50°	4080	3988	3917	3832	3800	3774	3759	3760	3760	3787	3822
52.5°	4890	4719	4550	4402	4275	4214	4143	4125	4126	4149	4173
55°	6289	6054	5875	5546	5446	5165	5017	4932	4866	4898	4933
57.5°	8799	8582	8440	8047	7689	7587	7344	7147	7066	6972	6978
60°	11878	11766	11730	11500	11371	10970	10938	10689	10454	10251	10334
62.5°	13204	13256	13298	13379	13410	13372	13211	13101	12908	12642	12479
65°	12869	12988	13167	13336	13538	13706	13789	13757	13583	13309	12967
67.5°	11813	11934	12088	12302	12611	12938	13166	13311	13173	12926	12578
70°	10150	10268	10273	10572	10905	11317	11721	11873	11716	11551	11260
72.5°	7602	7531	7597	7652	7842	8102	8494	8477	8237	8109	7662
75°	3573	3525	3455	3409	3365	3273	3317	3129	3064	3090	2704
77.5°	1285	1219	1113	1010	880	729	615	540	503	504	481
80°	1078	1110	1095	993	847	689	516	391	334	310	295
82.5°	1169	1330	1410	1347	1138	876	564	341	250	214	205
85°	648	649	629	601	533	366	244	162	130	116	112
87.5°	110	105	105	98	86	84	75	71	63	58	56
90°	0	0	0	0	0	0	0	0	0	0	0



REPORT NUMBER: P146360
 CATALOG NUMBER: LDRL-T2-E05-E

CANDELA DISTRIBUTION (continued):

	87°	88°	89°	90°	91°	92°	93°	94°	95°	96°	97°
0°	1389	1389	1389	1389	1389	1389	1389	1389	1389	1389	1389
2.5°	1399	1397	1396	1395	1395	1394	1394	1392	1390	1389	1388
5°	1431	1429	1427	1425	1425	1423	1421	1419	1416	1411	1410
7.5°	1485	1481	1481	1474	1474	1470	1467	1467	1463	1455	1454
10°	1552	1545	1542	1538	1536	1532	1532	1528	1526	1523	1513
12.5°	1624	1619	1617	1612	1609	1609	1607	1600	1605	1598	1593
15°	1711	1710	1701	1704	1703	1702	1703	1697	1696	1696	1690
17.5°	1820	1812	1813	1813	1815	1815	1807	1811	1812	1810	1808
20°	1948	1945	1948	1942	1948	1948	1952	1951	1952	1954	1954
22.5°	2085	2093	2094	2096	2089	2101	2101	2103	2108	2108	2110
25°	2251	2247	2242	2249	2251	2259	2261	2261	2269	2269	2272
27.5°	2389	2393	2392	2396	2394	2405	2409	2421	2418	2424	2432
30°	2531	2539	2535	2536	2541	2548	2556	2568	2570	2586	2590
32.5°	2695	2701	2706	2708	2708	2720	2733	2737	2758	2770	2784
35°	2903	2904	2907	2910	2908	2921	2934	2938	2960	2963	2992
37.5°	2991	2993	3005	3011	3015	3031	3055	3073	3097	3120	3153
40°	3101	3113	3124	3133	3148	3170	3207	3225	3261	3304	3336
42.5°	3240	3262	3270	3287	3324	3351	3388	3427	3475	3527	3565
45°	3405	3426	3456	3475	3518	3561	3620	3654	3703	3763	3805
47.5°	3605	3634	3664	3703	3754	3799	3858	3902	3951	4000	4046
50°	3854	3897	3937	3978	4046	4084	4142	4188	4234	4283	4325
52.5°	4189	4254	4305	4333	4425	4463	4534	4566	4604	4648	4702
55°	4920	5021	5107	5157	5297	5347	5439	5486	5460	5516	5613
57.5°	7034	7158	7261	7329	7472	7542	7547	7723	7619	7722	7737
60°	10113	10211	10186	10187	10142	10077	10202	10012	10092	10097	9918
62.5°	12178	12028	11958	11842	11707	11603	11532	11379	11257	11160	10971
65°	12664	12404	12174	11957	11758	11620	11470	11306	11115	10954	10770
67.5°	12194	11830	11489	11203	10931	10749	10532	10376	10136	9924	9784
70°	10831	10327	9929	9746	9476	9085	8878	8683	8536	8344	8259
72.5°	7598	6976	6669	6681	6407	6127	6134	6015	5825	5819	5790
75°	2792	2540	2363	2371	2269	2160	2190	2222	2160	2286	2091
77.5°	444	432	428	419	397	413	402	423	426	449	451
80°	283	271	268	263	262	262	260	260	260	261	259
82.5°	189	182	181	178	183	184	185	193	200	202	210
85°	103	98	98	96	100	101	110	121	135	141	154
87.5°	52	55	54	56	59	66	73	80	88	99	108
90°	0	0	0	0	0	0	0	0	0	0	0



REPORT NUMBER: P146360
 CATALOG NUMBER: LDRL-T2-E05-E

CANDELA DISTRIBUTION (continued):

	98°	99°	100°	101°	102°	103°	104°	105°	115°	125°	135°
0°	1389	1389	1389	1389	1389	1389	1389	1389	1389	1389	1389
2.5°	1386	1385	1385	1383	1383	1382	1380	1378	1369	1358	1351
5°	1407	1405	1404	1402	1399	1399	1396	1392	1375	1357	1346
7.5°	1450	1449	1446	1442	1438	1434	1432	1430	1404	1387	1379
10°	1512	1511	1504	1503	1497	1498	1493	1489	1472	1453	1442
12.5°	1591	1595	1591	1582	1584	1581	1576	1571	1556	1541	1524
15°	1689	1684	1680	1688	1681	1680	1683	1684	1666	1650	1626
17.5°	1811	1811	1809	1811	1807	1810	1808	1810	1802	1780	1745
20°	1950	1958	1958	1955	1954	1960	1963	1952	1954	1935	1872
22.5°	2112	2118	2120	2117	2118	2126	2131	2123	2141	2110	2013
25°	2279	2288	2284	2285	2293	2302	2311	2303	2338	2290	2163
27.5°	2444	2452	2450	2456	2469	2481	2491	2488	2546	2483	2321
30°	2600	2619	2623	2630	2646	2666	2682	2681	2756	2671	2450
32.5°	2792	2813	2821	2836	2867	2881	2901	2903	2978	2836	2559
35°	3014	3035	3052	3063	3098	3115	3135	3144	3194	2990	2635
37.5°	3186	3204	3237	3260	3291	3325	3348	3359	3387	3122	2670
40°	3374	3413	3445	3480	3514	3541	3562	3579	3568	3232	2655
42.5°	3612	3653	3696	3726	3744	3780	3790	3802	3712	3282	2587
45°	3860	3893	3929	3951	3975	3993	3996	3997	3819	3253	2464
47.5°	4099	4127	4152	4164	4176	4177	4172	4164	3876	3155	2316
50°	4361	4378	4389	4390	4401	4380	4366	4329	3870	3005	2160
52.5°	4738	4734	4720	4719	4684	4644	4618	4565	3829	2843	1980
55°	5604	5566	5610	5498	5405	5343	5196	5089	3870	2692	1773
57.5°	7685	7555	7569	7388	7190	6819	6600	6304	4192	2608	1512
60°	9880	9666	9464	9143	8722	8251	7827	7364	4512	2505	1234
62.5°	10786	10510	10159	9706	9165	8581	7995	7467	4336	2195	889
65°	10494	10164	9790	9199	8585	7906	7264	6706	3611	1605	537
67.5°	9457	9173	8712	8154	7394	6713	6078	5562	2662	992	308
70°	7963	7570	7176	6640	5839	5197	4606	4150	1689	490	227
72.5°	5496	5185	4870	4390	3792	3350	2842	2467	884	264	209
75°	2141	2107	2071	1853	1650	1322	1161	1047	368	229	206
77.5°	470	498	514	487	464	414	396	354	246	235	204
80°	259	259	259	262	257	257	254	249	230	235	200
82.5°	212	215	219	220	219	220	218	217	225	236	190
85°	162	172	178	186	194	199	201	202	207	224	166
87.5°	115	123	136	138	147	158	162	168	165	170	78
90°	0	0	0	0	0	0	0	0	0	0	0



REPORT NUMBER: P146360
 CATALOG NUMBER: LDRL-T2-E05-E

CANDELA DISTRIBUTION (continued):

	145°	155°	165°	175°	180°
0°	1389	1389	1389	1389	1389
2.5°	1345	1337	1334	1333	1331
5°	1337	1332	1328	1325	1327
7.5°	1373	1370	1363	1361	1364
10°	1437	1430	1420	1421	1420
12.5°	1517	1498	1482	1475	1470
15°	1599	1562	1529	1514	1508
17.5°	1690	1627	1576	1549	1544
20°	1786	1699	1633	1601	1596
22.5°	1897	1777	1693	1649	1642
25°	2005	1847	1735	1681	1672
27.5°	2103	1900	1760	1696	1687
30°	2185	1942	1781	1708	1698
32.5°	2239	1965	1788	1709	1697
35°	2256	1950	1758	1667	1657
37.5°	2220	1889	1678	1575	1567
40°	2138	1776	1552	1445	1435
42.5°	2010	1633	1406	1293	1284
45°	1868	1480	1251	1138	1129
47.5°	1713	1318	1088	984	970
50°	1543	1142	922	820	807
52.5°	1344	950	746	654	646
55°	1111	757	594	527	519
57.5°	864	576	472	439	426
60°	627	438	376	360	353
62.5°	426	327	303	298	293
65°	289	256	249	250	247
67.5°	228	215	211	213	212
70°	200	190	189	191	190
72.5°	189	176	178	181	180
75°	184	170	174	176	171
77.5°	179	161	173	177	167
80°	172	153	181	179	160
82.5°	157	135	177	162	144
85°	128	101	199	143	105
87.5°	82	61	138	109	70
90°	0	0	0	0	0

(END OF REPORT)