

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P242463

Luminaire Tested: S123DRP-S775D830-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242463
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-S775D830-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

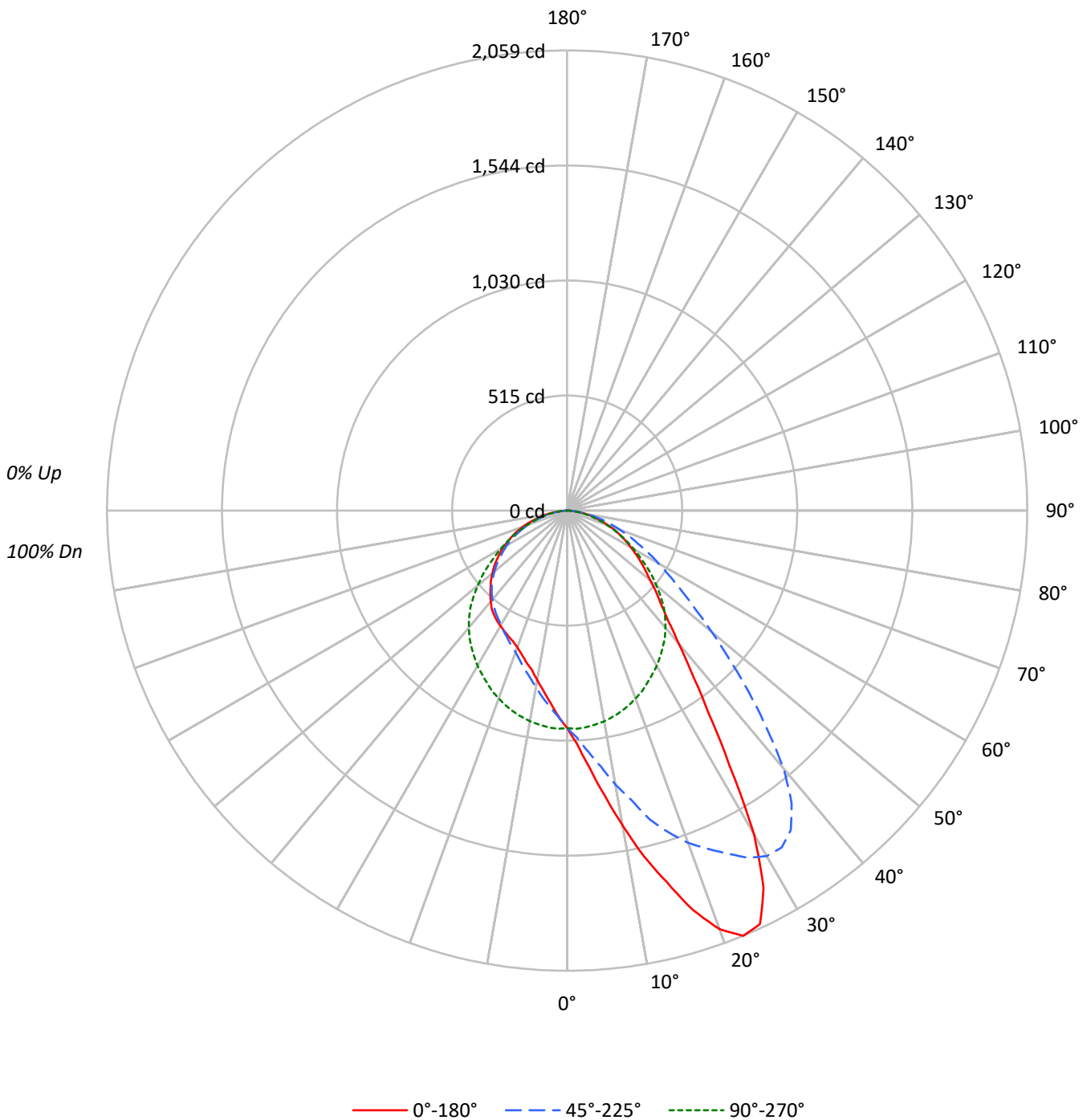
Lumens per Lamp: N/A
Luminaire Lumens: 2935.8 lumens
Efficiency: N/A
Efficacy: 111.2 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

Input Watts (W): 26.4
Input Voltage (V): 120
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: 24 FT

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20	
RC	80					70					50					30					10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85				85
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74	72				72
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62				62
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	53				53
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49	47				47
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	48	43	41				41
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36				36
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	35	33				33
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29				29
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28	27				27

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	11790	11790	11790	11790	11790
5°	14060	13176	11840	10722	10493
10°	17598	15319	11780	9877	9477
15°	21585	17966	11685	9213	8823
20°	25713	20400	11537	8693	8401
25°	27304	22627	11357	8439	8307
30°	23402	24985	11226	8277	8350
35°	16276	25815	11039	8249	8437
40°	12258	23831	10820	8233	8412
45°	10179	19712	10494	8175	8304
50°	9117	15906	9828	8016	8229
55°	8525	13195	9112	7787	8126
60°	7998	11413	8364	7564	8044
65°	7514	10041	7623	7176	7784
70°	7049	8970	6780	6595	7414
75°	6313	7770	5938	5892	6795
80°	5528	6380	4865	4768	5857
85°	4325	4979	3533	3477	3936

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 23298 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.7	3.3
10°-20°	307.3	10.5
20°-30°	517.0	17.6
30°-40°	584.3	19.9
40°-50°	523.3	17.8
50°-60°	422.4	14.4
60°-70°	294.3	10.0
70°-80°	154.5	5.3
80°-90°	37.0	1.3
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°-30°	919.9	31.3
0°-40°	1504.2	51.2
0°-60°	2449.9	83.5
0°-90°	2935.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2935.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	973	973	973	973	973	
5°	1156	1083	973	881	862	119
15°	1720	1432	931	734	703	496
25°	2042	1692	849	631	621	903
35°	1100	1745	746	558	570	710
45°	594	1150	612	477	484	468
55°	403	624	431	368	384	362
65°	262	350	266	250	271	261
75°	135	166	127	126	145	144
85°	31	36	25	25	28	38
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	972.7	972.7	972.7	972.7	972.7	972.7	972.7	972.7	972.7	972.7	972.7
2.5°	1047.1	1046.2	1043.8	1045.7	1041.9	1036.8	1036.3	1031.6	1017.9	1017.0	1013.2
5°	1155.5	1151.7	1151.3	1150.8	1144.2	1135.2	1118.3	1116.9	1094.2	1082.9	1069.3
7.5°	1286.5	1285.1	1281.3	1277.1	1254.9	1244.1	1228.1	1207.3	1181.0	1155.5	1139.5
10°	1429.8	1445.3	1426.0	1412.8	1400.6	1377.5	1350.6	1317.1	1283.7	1244.6	1214.9
12.5°	1583.4	1589.1	1589.1	1576.8	1556.1	1517.9	1465.1	1427.4	1397.3	1325.6	1300.2
15°	1720.1	1748.8	1730.4	1688.0	1689.0	1655.5	1593.3	1525.0	1488.7	1431.7	1353.9
17.5°	1874.6	1879.8	1874.2	1834.6	1815.3	1766.7	1710.6	1647.0	1578.7	1509.4	1428.8
20°	1993.4	1990.6	1974.1	1955.7	1915.2	1879.4	1816.7	1743.6	1649.4	1581.5	1491.5
22.5°	2059.4	2054.2	2048.5	2033.9	2001.9	1962.8	1908.1	1826.6	1738.0	1638.1	1530.6
25°	2041.5	2047.6	2048.5	2044.3	2032.5	2009.4	1965.1	1901.5	1812.0	1691.8	1583.4
27.5°	1902.9	1918.5	1938.3	1951.5	1972.7	1986.8	1972.7	1932.6	1859.1	1751.6	1618.3
30°	1672.0	1653.2	1699.8	1758.7	1798.8	1869.5	1909.0	1911.4	1874.2	1785.1	1656.0
32.5°	1351.6	1382.2	1396.3	1472.2	1571.6	1653.2	1741.7	1820.4	1838.8	1787.0	1678.1
35°	1099.9	1125.8	1163.5	1201.2	1295.5	1376.5	1515.1	1635.7	1731.9	1744.6	1675.3
37.5°	914.2	929.3	952.4	992.5	1057.0	1157.4	1267.2	1424.1	1556.5	1649.9	1640.4
40°	774.7	778.5	805.4	834.1	884.1	963.2	1059.8	1194.6	1361.4	1506.1	1566.4
42.5°	670.1	679.5	687.1	714.4	751.6	806.3	894.4	1000.0	1149.4	1321.4	1453.8
45°	593.8	603.2	610.3	628.7	656.9	697.0	759.7	861.4	977.8	1149.9	1308.7
47.5°	541.0	540.1	546.2	560.8	581.1	613.1	659.3	727.1	838.8	982.6	1148.9
50°	483.5	491.0	492.9	503.8	518.8	541.0	577.8	633.4	721.0	843.5	993.4
52.5°	443.0	443.9	450.0	457.1	469.8	485.9	516.5	557.0	621.1	721.0	855.8
55°	403.4	403.4	408.6	414.7	422.2	437.8	459.0	491.0	543.4	624.4	738.5
57.5°	366.6	368.5	373.2	374.6	381.2	392.1	410.5	435.9	476.0	541.5	635.7
60°	329.9	334.1	333.6	337.4	343.1	351.1	366.2	386.0	420.8	470.8	547.1
62.5°	297.8	296.4	296.4	301.1	306.8	314.3	322.8	339.3	367.6	410.5	472.7
65°	262.0	261.1	264.4	267.2	269.1	274.7	282.3	297.4	317.2	350.1	400.6
67.5°	230.9	228.1	230.4	231.4	234.7	239.4	246.9	256.4	272.4	300.2	340.7
70°	198.9	196.5	196.0	197.0	199.8	203.1	208.3	217.2	231.9	253.1	280.9
72.5°	165.9	164.5	164.5	166.8	167.8	169.7	172.9	181.0	191.8	206.4	231.9
75°	134.8	134.8	134.8	135.2	136.7	138.5	141.4	145.6	154.6	165.9	183.3
77.5°	106.5	107.0	106.0	105.6	107.9	108.9	109.3	114.0	119.2	127.7	141.4
80°	79.2	76.8	77.8	79.2	80.1	80.6	82.0	82.9	87.2	91.4	100.4
82.5°	53.7	51.8	51.8	54.2	54.2	54.7	56.1	57.5	58.4	62.2	66.0
85°	31.1	31.1	31.6	31.6	32.0	31.6	33.0	33.5	33.5	35.8	38.6
87.5°	14.1	13.2	13.7	14.1	13.7	14.1	14.6	15.1	15.6	16.0	16.5
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°	972.7	972.7	972.7	972.7	972.7	972.7	972.7	972.7	972.7	972.7	972.7
2.5°	1010.4	1006.6	1002.8	996.2	990.6	982.6	980.2	977.4	968.9	961.4	955.7
5°	1064.1	1052.8	1036.3	1021.2	1009.0	992.5	983.0	973.1	959.0	946.3	935.9
7.5°	1115.5	1095.7	1072.6	1047.6	1023.6	1000.5	982.1	965.6	947.2	929.3	915.6
10°	1179.1	1147.0	1111.2	1072.6	1039.6	1007.5	980.7	957.1	931.7	909.5	891.1
12.5°	1251.6	1200.3	1147.5	1098.5	1058.0	1010.4	976.4	944.9	915.2	887.4	866.2
15°	1305.8	1245.5	1187.1	1122.5	1063.1	1007.5	968.9	931.2	897.7	870.4	844.0
17.5°	1359.6	1293.6	1219.1	1141.4	1071.6	1007.5	954.8	914.2	873.2	840.2	814.8
20°	1403.9	1326.1	1238.9	1157.4	1078.2	1004.7	945.3	894.4	849.2	813.9	784.2
22.5°	1442.0	1347.8	1256.8	1168.2	1077.8	997.2	927.9	875.1	825.2	790.8	758.7
25°	1466.1	1357.2	1266.7	1164.5	1066.0	984.0	908.6	849.2	800.2	759.7	727.1
27.5°	1488.7	1355.8	1253.5	1143.3	1051.8	970.3	889.3	825.6	774.3	730.4	697.0
30°	1511.3	1358.1	1230.4	1121.6	1029.2	944.4	866.2	802.1	747.4	702.6	671.5
32.5°	1525.4	1356.7	1209.2	1091.4	993.4	920.8	841.2	774.3	717.7	673.9	644.2
35°	1529.2	1348.7	1184.3	1047.6	954.3	881.2	814.8	746.0	687.1	646.1	612.2
37.5°	1521.2	1334.1	1156.9	1008.0	907.2	834.6	776.6	717.7	661.2	615.5	585.8
40°	1495.3	1320.0	1123.9	965.6	858.2	788.9	741.3	683.8	628.2	585.3	558.0
42.5°	1445.8	1291.2	1087.6	918.5	807.3	738.0	695.1	649.4	597.5	558.0	530.6
45°	1359.1	1246.9	1051.4	871.3	757.3	685.7	647.0	612.2	564.6	525.4	501.9
47.5°	1248.3	1187.1	999.1	821.9	705.0	635.7	595.2	566.4	529.2	497.6	474.6
50°	1131.9	1109.8	945.8	771.0	652.7	585.3	546.7	521.2	496.2	464.7	443.9
52.5°	997.6	1020.3	883.6	718.2	599.4	533.5	497.6	478.8	456.6	432.1	414.7
55°	873.2	922.7	810.1	657.9	546.7	483.5	449.1	431.2	418.0	398.7	383.1
57.5°	752.6	815.7	733.7	597.1	494.8	439.7	405.7	385.5	377.0	366.2	353.4
60°	647.5	709.7	650.8	535.8	442.5	390.7	361.5	345.0	336.5	329.4	319.0
62.5°	553.7	616.9	569.7	473.6	391.1	344.0	319.5	303.5	297.4	294.5	286.1
65°	469.4	523.6	490.6	408.6	342.6	300.2	277.1	265.8	259.7	258.2	252.6
67.5°	396.3	438.3	412.8	351.1	297.4	258.7	238.5	228.6	223.4	222.9	218.2
70°	324.7	363.3	345.0	290.3	245.5	216.8	199.8	191.3	188.5	188.0	185.7
72.5°	269.1	293.1	279.5	236.1	204.1	178.6	167.3	158.3	155.0	156.0	154.6
75°	207.4	227.6	219.1	187.6	159.8	142.8	132.4	126.8	123.9	125.4	123.5
77.5°	158.3	172.5	164.0	140.0	122.1	109.3	101.3	97.5	94.7	94.7	93.8
80°	112.6	120.2	115.9	102.7	88.6	78.2	72.1	69.7	68.3	67.9	67.4
82.5°	72.1	78.2	73.0	65.0	56.6	51.4	48.5	45.2	44.3	44.8	44.3
85°	40.5	42.9	41.0	35.3	31.6	28.7	26.9	25.4	24.5	25.0	24.0
87.5°	17.4	17.9	16.5	14.6	13.7	12.3	12.3	11.3	10.4	10.4	9.9
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°	972.7	972.7	972.7	972.7	972.7	972.7	972.7	972.7	972.7	972.7	972.7
2.5°	952.4	949.1	944.4	937.3	931.7	922.7	922.7	924.1	924.1	923.7	922.7
5°	927.4	920.4	911.9	902.0	891.6	881.2	879.4	875.6	872.8	870.9	868.5
7.5°	902.0	890.2	878.4	864.7	853.0	843.1	836.0	829.9	826.1	821.9	818.6
10°	876.1	860.5	845.9	831.3	815.3	802.5	794.5	788.9	784.6	780.9	779.0
12.5°	845.4	827.0	810.6	796.9	779.0	765.8	758.2	756.4	751.2	742.2	737.5
15°	815.7	799.2	779.9	758.7	750.2	734.2	725.3	721.0	718.2	712.1	710.2
17.5°	791.2	769.1	746.9	731.4	715.8	703.1	697.9	692.3	688.5	682.8	681.4
20°	760.6	741.3	721.5	704.5	688.0	673.9	669.6	665.9	662.1	659.8	657.9
22.5°	729.5	710.2	694.6	679.1	661.2	653.2	648.4	644.2	641.8	640.4	638.5
25°	700.8	683.8	665.4	651.3	637.1	631.0	628.2	625.8	623.9	621.6	621.1
27.5°	675.3	656.5	640.9	627.2	616.9	611.7	608.4	607.0	607.0	607.9	608.4
30°	646.1	629.1	616.9	605.6	596.1	591.4	591.0	591.0	592.8	593.3	594.2
32.5°	619.2	606.0	593.8	582.9	576.3	573.5	575.9	575.9	577.3	578.7	580.6
35°	593.3	581.1	571.6	562.2	556.1	557.5	558.4	559.4	561.7	564.6	566.4
37.5°	568.8	557.5	547.6	540.1	536.3	539.1	541.5	543.4	546.2	548.5	550.4
40°	541.9	533.9	524.5	517.9	518.8	520.3	522.1	524.5	526.9	528.3	530.2
42.5°	517.0	508.5	501.9	496.7	498.1	500.0	500.9	501.9	504.7	507.5	508.5
45°	491.5	484.9	478.3	475.0	476.0	476.9	477.8	479.3	481.6	483.5	484.0
47.5°	462.8	458.1	453.8	450.0	451.9	451.5	452.9	455.7	456.6	457.6	460.4
50°	435.4	431.2	426.0	425.1	425.1	425.1	425.5	429.3	429.3	431.2	433.1
52.5°	405.3	402.9	400.1	398.2	397.3	397.3	399.6	401.0	402.0	404.8	406.7
55°	375.6	372.8	369.9	368.5	367.6	368.5	372.3	373.2	375.6	377.0	378.4
57.5°	344.5	342.6	340.2	339.3	339.3	339.8	342.6	345.0	345.4	350.1	352.0
60°	313.9	310.6	308.7	308.7	307.7	312.0	311.0	315.7	316.7	319.5	322.8
62.5°	282.3	277.6	277.1	277.1	279.0	279.5	281.3	282.8	285.6	289.3	291.7
65°	247.9	245.5	248.8	248.3	247.4	250.2	250.2	252.6	255.4	258.7	263.9
67.5°	215.8	213.9	214.9	214.4	215.8	217.7	219.1	221.0	224.3	228.1	231.4
70°	183.3	184.7	182.4	184.3	185.7	186.1	187.1	189.9	193.7	196.0	199.8
72.5°	151.7	151.3	152.2	152.7	154.1	155.0	156.0	159.3	163.5	165.4	168.2
75°	121.6	121.1	122.5	122.5	124.9	125.8	126.8	128.2	132.0	134.8	137.1
77.5°	94.3	94.7	94.3	96.1	95.2	95.7	98.5	99.9	100.4	106.5	107.4
80°	66.9	67.9	68.3	68.8	69.3	68.3	71.6	73.0	73.0	76.3	78.7
82.5°	43.4	43.8	45.2	45.7	45.7	47.1	46.7	47.6	49.0	50.0	53.3
85°	24.0	25.4	25.9	25.4	25.9	25.0	26.4	26.9	27.3	27.3	27.3
87.5°	9.4	9.9	9.4	9.9	9.4	9.9	9.9	9.0	9.0	10.4	8.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242463

CATALOG NUMBER: S123DRP-S775D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	972.7	972.7	972.7	972.7
2.5°	919.4	918.9	922.2	919.9
5°	865.7	867.1	862.4	862.4
7.5°	817.2	815.3	815.7	812.4
10°	773.3	770.5	769.6	770.0
12.5°	737.0	737.0	729.5	729.5
15°	710.2	701.2	700.3	703.1
17.5°	680.5	675.3	675.8	674.8
20°	657.9	655.0	654.6	651.3
22.5°	637.1	636.7	637.1	633.4
25°	620.6	623.0	621.1	621.1
27.5°	609.3	609.3	607.9	607.9
30°	596.1	595.7	596.6	596.6
32.5°	582.9	583.9	583.9	584.4
35°	569.3	569.7	571.2	570.2
37.5°	551.4	553.7	553.2	554.2
40°	530.6	532.0	531.6	531.6
42.5°	509.4	510.4	509.0	508.0
45°	485.9	484.9	486.3	484.4
47.5°	459.9	460.4	460.9	462.8
50°	434.0	436.9	436.9	436.4
52.5°	408.6	409.5	411.9	411.9
55°	382.2	383.1	384.1	384.5
57.5°	355.3	354.9	356.7	357.2
60°	326.6	326.6	330.3	331.8
62.5°	295.9	297.8	301.6	298.8
65°	266.3	270.0	269.6	271.4
67.5°	235.2	237.5	241.3	241.3
70°	203.6	205.9	207.8	209.2
72.5°	172.9	173.9	179.1	176.2
75°	140.4	143.7	146.6	145.1
77.5°	109.3	113.6	114.5	113.1
80°	82.0	81.5	84.4	83.9
82.5°	54.7	54.2	55.1	55.6
85°	29.2	30.6	28.7	28.3
87.5°	8.5	8.5	8.0	7.5
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242463
 CATALOG NUMBER: S123DRP-S775D830-X4F0-XX-UDD-A-W

CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	18.96	20.51	19.32	20.82	21.14	19.51	21.07	19.87	21.38	21.69
	3H	20.50	21.90	20.88	22.23	22.59	20.84	22.24	21.22	22.57	22.93
	4H	21.07	22.38	21.47	22.73	23.11	21.30	22.62	21.70	22.97	23.34
	6H	21.47	22.68	21.88	23.05	23.44	21.60	22.81	22.01	23.18	23.57
	8H	21.58	22.74	22.01	23.13	23.53	21.67	22.83	22.10	23.22	23.62
	12H	21.65	22.76	22.08	23.14	23.57	21.70	22.81	22.13	23.20	23.62
4H	2H	20.11	21.42	20.51	21.77	22.15	20.27	21.59	20.67	21.93	22.31
	3H	21.70	22.80	22.11	23.20	23.60	22.08	23.17	22.49	23.57	23.97
	4H	22.32	23.31	22.76	23.72	24.16	22.65	23.63	23.08	24.05	24.48
	6H	22.80	23.65	23.25	24.10	24.56	23.01	23.87	23.47	24.31	24.77
	8H	22.93	23.74	23.40	24.18	24.65	23.10	23.90	23.56	24.34	24.81
	12H	23.03	23.75	23.51	24.22	24.69	23.15	23.87	23.63	24.35	24.82
8H	4H	22.81	23.61	23.27	24.05	24.52	22.95	23.75	23.41	24.19	24.66
	6H	23.36	24.02	23.85	24.51	24.99	23.46	24.12	23.95	24.61	25.09
	8H	23.54	24.14	24.06	24.65	25.14	23.61	24.20	24.12	24.71	25.20
	12H	23.69	24.21	24.20	24.71	25.27	23.70	24.23	24.21	24.72	25.28
12H	4H	22.86	23.58	23.34	24.06	24.53	22.96	23.68	23.44	24.16	24.63
	6H	23.43	24.03	23.95	24.54	25.03	23.49	24.09	24.00	24.60	25.08
	8H	23.67	24.20	24.18	24.69	25.25	23.70	24.22	24.21	24.71	25.28