

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: P242478

Luminaire Tested: S123DRP-S775D930-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242478  
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-S775D930-X4F0-XX-UDD-A-W  
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

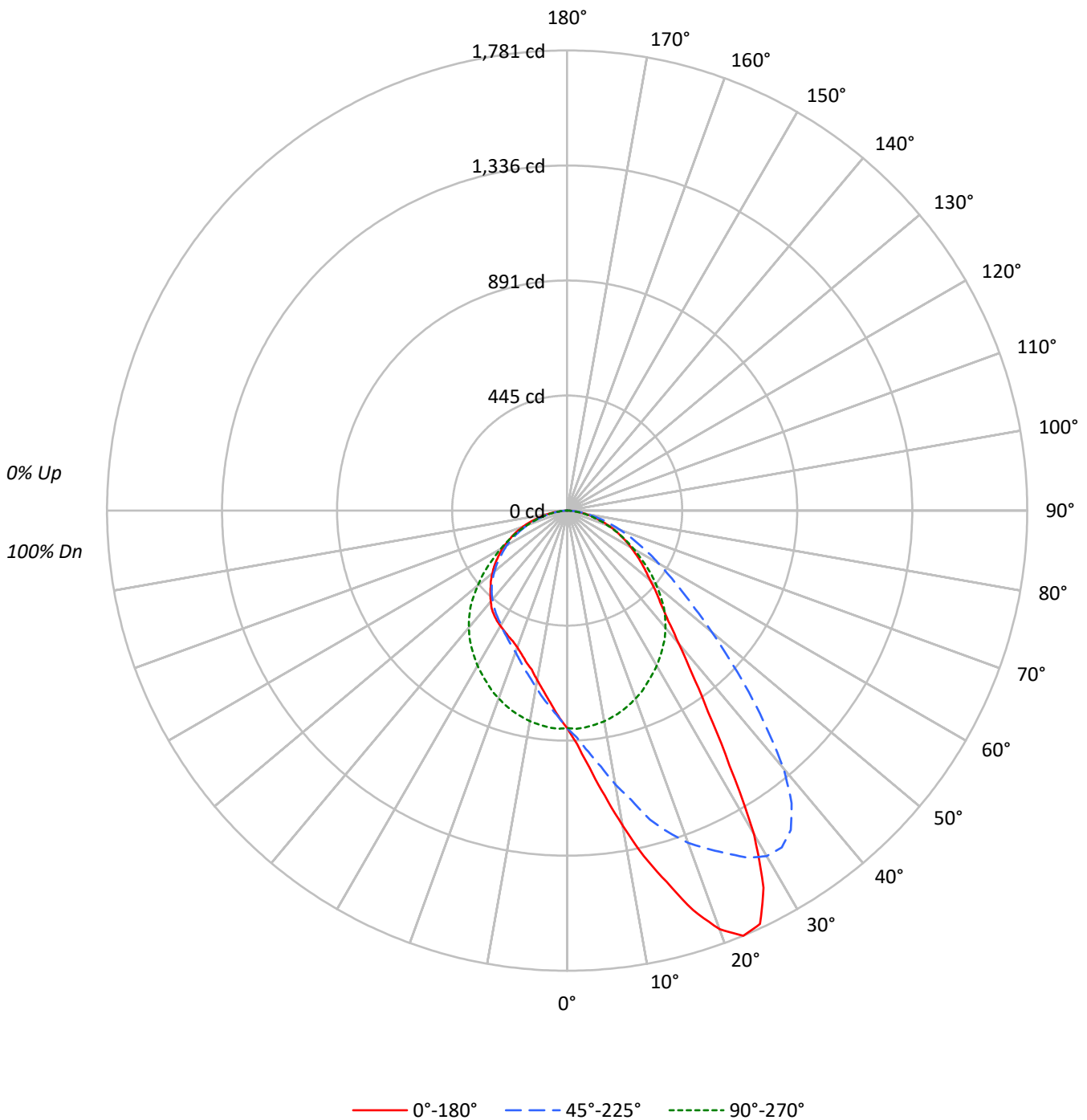
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2539.4 lumens  
Efficiency: N/A  
Efficacy: 96.2 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<sub>in</sub>): 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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CATALOG NUMBER: S123DRP-S775D930-X4F0-XX-UDD-A-W

### 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	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°	10199	10199	10199	10199	10199
5°	12161	11397	10243	9275	9077
10°	15223	13251	10190	8544	8199
15°	18671	15540	10108	7970	7632
20°	22242	17646	9980	7519	7266
25°	23618	19572	9825	7300	7186
30°	20243	21612	9711	7161	7224
35°	14078	22331	9549	7135	7298
40°	10603	20614	9359	7120	7275
45°	8804	17049	9077	7071	7182
50°	7886	13760	8501	6934	7119
55°	7373	11414	7883	6737	7029
60°	6916	9872	7234	6543	6958
65°	6499	8688	6594	6209	6734
70°	6096	7758	5865	5706	6415
75°	5461	6721	5138	5095	5882
80°	4782	5521	4209	4125	5068
85°	3741	4311	3060	3004	3407

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 55°  
 Vertical Angle: 45°  
 Luminance: 20152 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	82.7	3.3
10°-20°	265.8	10.5
20°-30°	447.2	17.6
30°-40°	505.4	19.9
40°-50°	452.7	17.8
50°-60°	365.4	14.4
60°-70°	254.6	10.0
70°-80°	133.6	5.3
80°-90°	32.0	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°	795.7	31.3
0°-40°	1301.1	51.2
0°-60°	2119.2	83.5
0°-90°	2539.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2539.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	841	841	841	841	841	
5°	1000	937	842	762	746	103
15°	1488	1238	806	635	608	429
25°	1766	1463	735	546	537	781
35°	951	1509	645	482	493	614
45°	514	995	530	412	419	405
55°	349	540	373	319	333	313
65°	227	303	230	216	235	226
75°	117	144	110	109	126	125
85°	27	31	22	22	24	33
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°	841.4	841.4	841.4	841.4	841.4	841.4	841.4	841.4	841.4	841.4	841.4
2.5°	905.8	904.9	902.9	904.5	901.3	896.8	896.4	892.3	880.5	879.7	876.4
5°	999.5	996.3	995.8	995.4	989.7	982.0	967.3	966.1	946.5	936.7	924.9
7.5°	1112.8	1111.6	1108.4	1104.7	1085.5	1076.2	1062.3	1044.4	1021.5	999.5	985.7
10°	1236.8	1250.2	1233.5	1222.1	1211.5	1191.5	1168.3	1139.3	1110.4	1076.6	1050.9
12.5°	1369.6	1374.5	1374.5	1363.9	1346.0	1313.0	1267.3	1234.7	1208.6	1146.7	1124.7
15°	1487.9	1512.7	1496.8	1460.1	1461.0	1432.0	1378.2	1319.1	1287.7	1238.4	1171.1
17.5°	1621.6	1626.0	1621.2	1586.9	1570.2	1528.2	1479.7	1424.7	1365.6	1305.6	1235.9
20°	1724.3	1721.8	1707.6	1691.7	1656.6	1625.6	1571.4	1508.2	1426.7	1368.0	1290.2
22.5°	1781.4	1776.9	1772.0	1759.3	1731.6	1697.8	1650.5	1580.0	1503.4	1416.9	1324.0
25°	1765.9	1771.2	1772.0	1768.3	1758.1	1738.1	1699.8	1644.8	1567.3	1463.4	1369.6
27.5°	1646.0	1659.5	1676.6	1688.0	1706.4	1718.6	1706.4	1671.7	1608.1	1515.2	1399.8
30°	1446.3	1430.0	1470.3	1521.3	1555.9	1617.1	1651.3	1653.4	1621.2	1544.1	1432.4
32.5°	1169.1	1195.6	1207.8	1273.4	1359.5	1430.0	1506.6	1574.7	1590.6	1545.7	1451.6
35°	951.4	973.8	1006.4	1039.1	1120.6	1190.7	1310.5	1414.9	1498.1	1509.1	1449.1
37.5°	790.8	803.9	823.8	858.5	914.3	1001.1	1096.1	1231.9	1346.4	1427.1	1419.0
40°	670.1	673.4	696.6	721.5	764.7	833.2	916.8	1033.3	1177.7	1302.8	1355.0
42.5°	579.7	587.8	594.3	618.0	650.2	697.5	773.7	865.0	994.2	1143.0	1257.5
45°	513.6	521.8	527.9	543.8	568.2	602.9	657.1	745.2	845.8	994.6	1132.0
47.5°	468.0	467.1	472.4	485.1	502.6	530.3	570.3	629.0	725.6	849.9	993.8
50°	418.2	424.8	426.4	435.8	448.8	468.0	499.8	547.9	623.7	729.7	859.3
52.5°	383.2	384.0	389.3	395.4	406.4	420.3	446.8	481.8	537.3	623.7	740.3
55°	348.9	348.9	353.4	358.7	365.2	378.7	397.0	424.8	470.0	540.1	638.8
57.5°	317.1	318.8	322.8	324.1	329.8	339.2	355.0	377.1	411.7	468.4	549.9
60°	285.3	289.0	288.6	291.9	296.8	303.7	316.7	333.9	364.0	407.2	473.3
62.5°	257.6	256.4	256.4	260.5	265.4	271.9	279.2	293.5	318.0	355.0	408.9
65°	226.6	225.8	228.7	231.1	232.8	237.7	244.2	257.2	274.3	302.9	346.5
67.5°	199.7	197.3	199.3	200.1	203.0	207.1	213.6	221.8	235.6	259.7	294.7
70°	172.0	170.0	169.6	170.4	172.8	175.7	180.2	187.9	200.6	218.9	242.9
72.5°	143.5	142.3	142.3	144.3	145.1	146.7	149.6	156.5	165.9	178.5	200.6
75°	116.6	116.6	116.6	117.0	118.2	119.8	122.3	126.0	133.7	143.5	158.6
77.5°	92.1	92.5	91.7	91.3	93.3	94.2	94.6	98.6	103.1	110.5	122.3
80°	68.5	66.4	67.3	68.5	69.3	69.7	70.9	71.7	75.4	79.1	86.8
82.5°	46.5	44.8	44.8	46.9	46.9	47.3	48.5	49.7	50.5	53.8	57.1
85°	26.9	26.9	27.3	27.3	27.7	27.3	28.5	28.9	28.9	31.0	33.4
87.5°	12.2	11.4	11.8	12.2	11.8	12.2	12.6	13.0	13.5	13.9	14.3
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°	841.4	841.4	841.4	841.4	841.4	841.4	841.4	841.4	841.4	841.4	841.4
2.5°	874.0	870.7	867.4	861.7	856.8	849.9	847.9	845.4	838.1	831.6	826.7
5°	920.4	910.7	896.4	883.3	872.7	858.5	850.3	841.8	829.5	818.5	809.6
7.5°	964.9	947.7	927.8	906.2	885.4	865.4	849.5	835.2	819.3	803.9	792.0
10°	1019.9	992.2	961.2	927.8	899.2	871.5	848.3	827.9	805.9	786.7	770.8
12.5°	1082.7	1038.2	992.6	950.2	915.1	874.0	844.6	817.3	791.6	767.6	749.2
15°	1129.6	1077.4	1026.8	971.0	919.6	871.5	838.1	805.5	776.5	752.9	730.1
17.5°	1176.0	1119.0	1054.5	987.3	927.0	871.5	825.9	790.8	755.3	726.8	704.8
20°	1214.3	1147.1	1071.7	1001.1	932.7	869.1	817.7	773.7	734.6	704.0	678.3
22.5°	1247.4	1165.8	1087.2	1010.5	932.3	862.6	802.6	757.0	713.8	684.0	656.3
25°	1268.1	1174.0	1095.7	1007.3	922.1	851.1	785.9	734.6	692.2	657.1	629.0
27.5°	1287.7	1172.8	1084.3	988.9	909.8	839.3	769.2	714.2	669.7	631.8	602.9
30°	1307.3	1174.8	1064.3	970.2	890.3	816.9	749.2	693.8	646.5	607.8	580.9
32.5°	1319.5	1173.6	1046.0	944.1	859.3	796.5	727.6	669.7	620.8	582.9	557.2
35°	1322.8	1166.6	1024.4	906.2	825.5	762.3	704.8	645.3	594.3	558.9	529.5
37.5°	1315.8	1154.0	1000.7	871.9	784.7	721.9	671.8	620.8	571.9	532.4	506.7
40°	1293.4	1141.8	972.2	835.2	742.3	682.4	641.2	591.5	543.4	506.3	482.6
42.5°	1250.6	1116.9	940.8	794.5	698.3	638.4	601.3	561.7	516.9	482.6	459.0
45°	1175.6	1078.6	909.4	753.7	655.1	593.1	559.7	529.5	488.3	454.5	434.1
47.5°	1079.8	1026.8	864.2	710.9	609.8	549.9	514.8	490.0	457.8	430.5	410.5
50°	979.1	960.0	818.1	666.9	564.6	506.3	472.9	450.8	429.2	401.9	384.0
52.5°	863.0	882.5	764.3	621.2	518.5	461.4	430.5	414.2	395.0	373.8	358.7
55°	755.3	798.1	700.7	569.1	472.9	418.2	388.5	373.0	361.6	344.9	331.4
57.5°	651.0	705.6	634.7	516.5	428.0	380.3	351.0	333.4	326.1	316.7	305.7
60°	560.1	613.9	562.9	463.5	382.8	337.9	312.7	298.4	291.0	284.9	276.0
62.5°	479.0	533.6	492.8	409.7	338.3	297.6	276.4	262.5	257.2	254.8	247.4
65°	406.0	452.9	424.3	353.4	296.3	259.7	239.7	229.9	224.6	223.4	218.5
67.5°	342.8	379.1	357.1	303.7	257.2	223.8	206.3	197.7	193.2	192.8	188.7
70°	280.9	314.3	298.4	251.1	212.4	187.5	172.8	165.5	163.1	162.6	160.6
72.5°	232.8	253.5	241.7	204.2	176.5	154.5	144.7	137.0	134.1	134.9	133.7
75°	179.4	196.9	189.5	162.2	138.2	123.5	114.5	109.7	107.2	108.4	106.8
77.5°	137.0	149.2	141.9	121.1	105.6	94.6	87.6	84.4	81.9	81.9	81.1
80°	97.4	103.9	100.3	88.9	76.6	67.7	62.4	60.3	59.1	58.7	58.3
82.5°	62.4	67.7	63.2	56.3	48.9	44.4	42.0	39.1	38.3	38.7	38.3
85°	35.1	37.1	35.5	30.6	27.3	24.9	23.2	22.0	21.2	21.6	20.8
87.5°	15.1	15.5	14.3	12.6	11.8	10.6	10.6	9.8	9.0	9.0	8.6
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	841.4	841.4	841.4	841.4	841.4	841.4	841.4	841.4	841.4	841.4	841.4
2.5°	823.8	821.0	816.9	810.8	805.9	798.1	798.1	799.4	799.4	799.0	798.1
5°	802.2	796.1	788.8	780.2	771.2	762.3	760.6	757.4	754.9	753.3	751.3
7.5°	780.2	770.0	759.8	748.0	737.8	729.3	723.1	717.8	714.6	710.9	708.1
10°	757.8	744.3	731.7	719.1	705.2	694.2	687.3	682.4	678.7	675.4	673.8
12.5°	731.3	715.4	701.1	689.3	673.8	662.4	655.9	654.3	649.8	642.0	637.9
15°	705.6	691.3	674.6	656.3	649.0	635.1	627.3	623.7	621.2	615.9	614.3
17.5°	684.4	665.3	646.1	632.6	619.2	608.2	603.7	598.8	595.6	590.7	589.4
20°	657.9	641.2	624.1	609.4	595.1	582.9	579.2	576.0	572.7	570.7	569.1
22.5°	631.0	614.3	600.9	587.4	571.9	565.0	560.9	557.2	555.2	554.0	552.3
25°	606.2	591.5	575.6	563.3	551.1	545.8	543.4	541.3	539.7	537.7	537.3
27.5°	584.1	567.8	554.4	542.6	533.6	529.1	526.3	525.0	525.0	525.8	526.3
30°	558.9	544.2	533.6	523.8	515.7	511.6	511.2	511.2	512.8	513.2	514.0
32.5°	535.6	524.2	513.6	504.2	498.5	496.1	498.1	498.1	499.4	500.6	502.2
35°	513.2	502.6	494.5	486.3	481.0	482.2	483.0	483.9	485.9	488.3	490.0
37.5°	492.0	482.2	473.7	467.1	463.9	466.3	468.4	470.0	472.4	474.5	476.1
40°	468.8	461.8	453.7	448.0	448.8	450.0	451.7	453.7	455.7	457.0	458.6
42.5°	447.2	439.8	434.1	429.6	430.9	432.5	433.3	434.1	436.6	439.0	439.8
45°	425.2	419.5	413.7	410.9	411.7	412.5	413.3	414.6	416.6	418.2	418.6
47.5°	400.3	396.2	392.6	389.3	390.9	390.5	391.7	394.2	395.0	395.8	398.3
50°	376.7	373.0	368.5	367.7	367.7	367.7	368.1	371.4	371.4	373.0	374.6
52.5°	350.6	348.5	346.1	344.4	343.6	343.6	345.7	346.9	347.7	350.2	351.8
55°	324.9	322.4	320.0	318.8	318.0	318.8	322.0	322.8	324.9	326.1	327.3
57.5°	298.0	296.3	294.3	293.5	293.5	293.9	296.3	298.4	298.8	302.9	304.5
60°	271.5	268.6	267.0	267.0	266.2	269.9	269.0	273.1	273.9	276.4	279.2
62.5°	244.2	240.1	239.7	239.7	241.3	241.7	243.4	244.6	247.0	250.3	252.3
65°	214.4	212.4	215.2	214.8	214.0	216.5	216.5	218.5	220.9	223.8	228.3
67.5°	186.7	185.1	185.9	185.5	186.7	188.3	189.5	191.2	194.0	197.3	200.1
70°	158.6	159.8	157.8	159.4	160.6	161.0	161.8	164.3	167.5	169.6	172.8
72.5°	131.3	130.9	131.7	132.1	133.3	134.1	134.9	137.8	141.4	143.1	145.5
75°	105.2	104.8	106.0	106.0	108.0	108.8	109.7	110.9	114.1	116.6	118.6
77.5°	81.5	81.9	81.5	83.2	82.3	82.7	85.2	86.4	86.8	92.1	92.9
80°	57.9	58.7	59.1	59.5	59.9	59.1	62.0	63.2	63.2	66.0	68.1
82.5°	37.5	37.9	39.1	39.5	39.5	40.8	40.4	41.2	42.4	43.2	46.1
85°	20.8	22.0	22.4	22.0	22.4	21.6	22.8	23.2	23.6	23.6	23.6
87.5°	8.2	8.6	8.2	8.6	8.2	8.6	8.6	7.7	7.7	9.0	7.3
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: P242478

CATALOG NUMBER: S123DRP-S775D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	841.4	841.4	841.4	841.4
2.5°	795.3	794.9	797.7	795.7
5°	748.8	750.0	746.0	746.0
7.5°	706.8	705.2	705.6	702.8
10°	668.9	666.5	665.7	666.1
12.5°	637.5	637.5	631.0	631.0
15°	614.3	606.6	605.7	608.2
17.5°	588.6	584.1	584.5	583.7
20°	569.1	566.6	566.2	563.3
22.5°	551.1	550.7	551.1	547.9
25°	536.9	538.9	537.3	537.3
27.5°	527.1	527.1	525.8	525.8
30°	515.7	515.2	516.1	516.1
32.5°	504.2	505.1	505.1	505.5
35°	492.4	492.8	494.1	493.2
37.5°	476.9	479.0	478.6	479.4
40°	459.0	460.2	459.8	459.8
42.5°	440.7	441.5	440.2	439.4
45°	420.3	419.5	420.7	419.0
47.5°	397.8	398.3	398.7	400.3
50°	375.4	377.9	377.9	377.5
52.5°	353.4	354.2	356.3	356.3
55°	330.6	331.4	332.2	332.6
57.5°	307.4	306.9	308.6	309.0
60°	282.5	282.5	285.8	287.0
62.5°	256.0	257.6	260.9	258.4
65°	230.3	233.6	233.2	234.8
67.5°	203.4	205.4	208.7	208.7
70°	176.1	178.1	179.8	181.0
72.5°	149.6	150.4	154.9	152.5
75°	121.5	124.3	126.8	125.6
77.5°	94.6	98.2	99.1	97.8
80°	70.9	70.5	73.0	72.6
82.5°	47.3	46.9	47.7	48.1
85°	25.3	26.5	24.9	24.5
87.5°	7.3	7.3	6.9	6.5
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242478  
 CATALOG NUMBER: S123DRP-S775D930-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	18.45	20.01	18.82	20.32	20.64	19.01	20.56	19.37	20.87	21.19
	3H	20.00	21.40	20.38	21.73	22.09	20.34	21.74	20.72	22.06	22.43
	4H	20.57	21.88	20.96	22.23	22.61	20.80	22.11	21.20	22.46	22.84
	6H	20.96	22.18	21.38	22.55	22.94	21.09	22.31	21.50	22.67	23.06
	8H	21.08	22.23	21.50	22.62	23.02	21.17	22.32	21.59	22.71	23.11
	12H	21.14	22.25	21.57	22.63	23.06	21.20	22.31	21.63	22.69	23.12
4H	2H	19.61	20.92	20.00	21.27	21.64	19.77	21.08	20.17	21.43	21.81
	3H	21.20	22.29	21.61	22.69	23.09	21.57	22.67	21.98	23.07	23.47
	4H	21.82	22.81	22.25	23.22	23.66	22.14	23.13	22.57	23.54	23.98
	6H	22.29	23.15	22.75	23.59	24.05	22.51	23.36	22.96	23.81	24.26
	8H	22.43	23.23	22.89	23.68	24.14	22.59	23.40	23.06	23.84	24.31
	12H	22.52	23.24	23.01	23.72	24.19	22.65	23.36	23.13	23.84	24.31
8H	4H	22.30	23.11	22.77	23.55	24.02	22.44	23.25	22.91	23.69	24.16
	6H	22.85	23.52	23.35	24.01	24.48	22.95	23.62	23.45	24.11	24.59
	8H	23.04	23.64	23.55	24.14	24.63	23.10	23.70	23.61	24.20	24.69
	12H	23.18	23.71	23.69	24.20	24.77	23.20	23.72	23.71	24.21	24.78
12H	4H	22.36	23.07	22.84	23.55	24.02	22.46	23.17	22.94	23.65	24.12
	6H	22.93	23.53	23.44	24.03	24.52	22.99	23.58	23.50	24.09	24.58
	8H	23.17	23.69	23.68	24.18	24.75	23.19	23.72	23.70	24.21	24.77