

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: P242458

Luminaire Tested: S123DRP-S775D927-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242458
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-S775D927-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

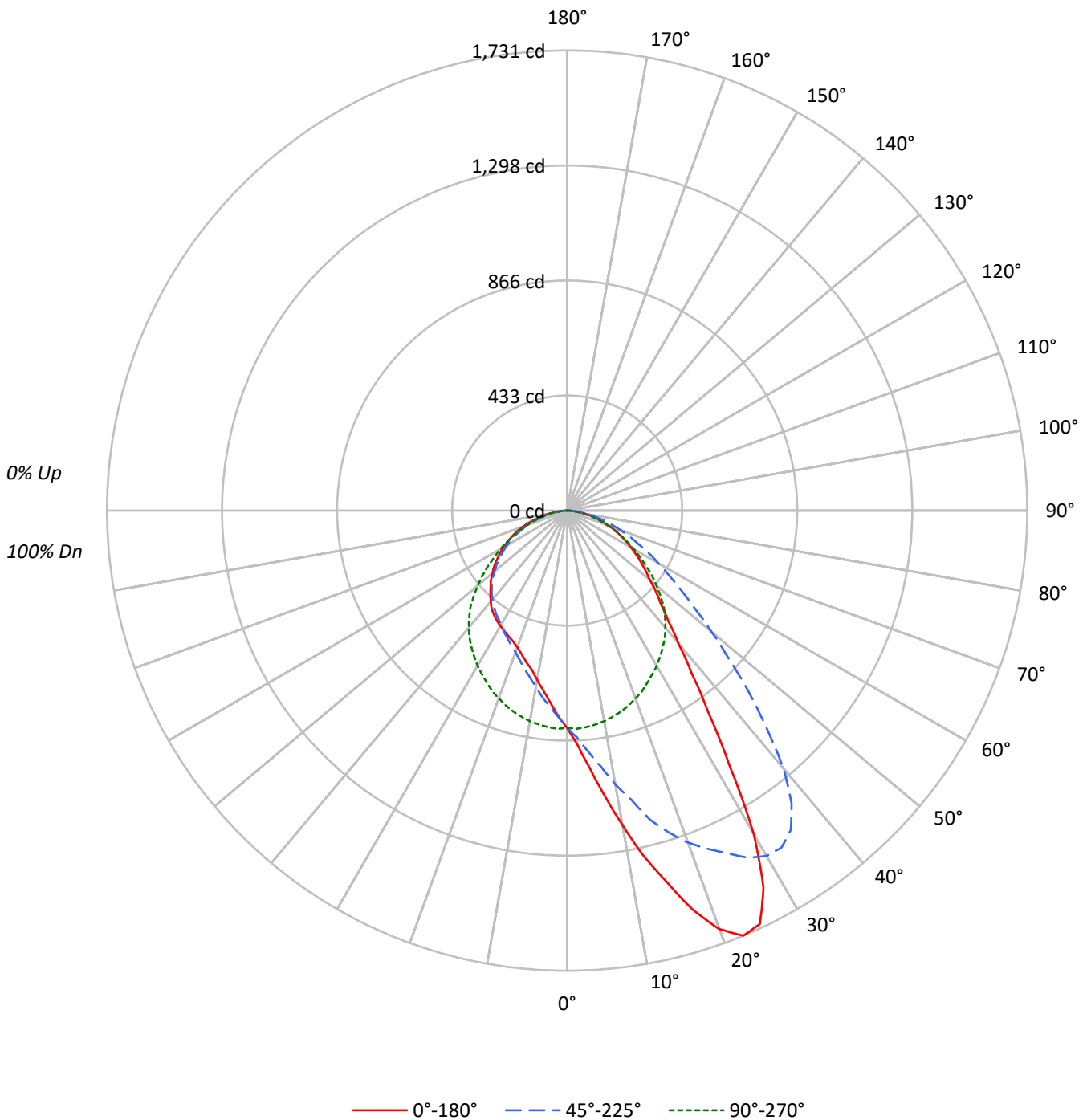
Lumens per Lamp: N/A
Luminaire Lumens: 2467.4 lumens
Efficiency: N/A
Efficacy: 93.5 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P242458

CATALOG NUMBER: S123DRP-S775D927-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	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	
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74				72	
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64				62	
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56				53	
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49				47	
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	48	43				41	
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38				36	
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	35				33	
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31				29	
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28				27	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	9909	9909	9909	9909	9909
5°	11817	11075	9952	9012	8819
10°	14791	12874	9901	8302	7966
15°	18142	15100	9821	7744	7415
20°	21611	17146	9698	7306	7061
25°	22948	19017	9545	7092	6981
30°	19669	20999	9435	6958	7018
35°	13679	21697	9278	6934	7092
40°	10302	20031	9094	6919	7070
45°	8556	16566	8820	6871	6980
50°	7664	13370	8261	6738	6917
55°	7164	11090	7658	6545	6830
60°	6722	9593	7028	6356	6759
65°	6316	8441	6407	6032	6542
70°	5922	7538	5699	5543	6234
75°	5306	6528	4988	4955	5714
80°	4642	5361	4090	4007	4921
85°	3630	4186	2976	2921	3310

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 19581 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	80.4	3.3
10°-20°	258.2	10.5
20°-30°	434.5	17.6
30°-40°	491.1	19.9
40°-50°	439.9	17.8
50°-60°	355.0	14.4
60°-70°	247.4	10.0
70°-80°	129.8	5.3
80°-90°	31.1	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°	773.1	31.3
0°-40°	1264.2	51.2
0°-60°	2059.1	83.5
0°-90°	2467.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2467.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	818	818	818	818	818	
5°	971	910	818	741	725	100
15°	1446	1203	783	617	591	417
25°	1716	1422	714	530	522	759
35°	924	1466	627	469	479	597
45°	499	966	514	401	407	394
55°	339	525	362	310	323	304
65°	220	294	223	210	228	219
75°	113	139	106	106	122	121
85°	26	30	21	21	24	32
90°	0	0	0	0	0	



TEST NUMBER: P242458

CATALOG NUMBER: S123DRP-S775D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	817.5	817.5	817.5	817.5	817.5	817.5	817.5	817.5	817.5	817.5	817.5
2.5°	880.1	879.3	877.3	878.9	875.7	871.4	871.0	867.0	855.5	854.7	851.6
5°	971.2	968.0	967.6	967.2	961.7	954.1	939.9	938.7	919.7	910.2	898.7
7.5°	1081.3	1080.1	1076.9	1073.4	1054.7	1045.6	1032.2	1014.7	992.6	971.2	957.7
10°	1201.7	1214.8	1198.5	1187.4	1177.1	1157.7	1135.2	1107.0	1078.9	1046.0	1021.1
12.5°	1330.8	1335.6	1335.6	1325.3	1307.8	1275.8	1231.4	1199.7	1174.4	1114.2	1092.8
15°	1445.7	1469.8	1454.4	1418.7	1419.5	1391.4	1339.1	1281.7	1251.2	1203.3	1137.9
17.5°	1575.6	1579.9	1575.2	1541.9	1525.7	1484.9	1437.8	1384.3	1326.9	1268.6	1200.9
20°	1675.4	1673.0	1659.2	1643.7	1609.6	1579.5	1526.9	1465.5	1386.3	1329.2	1253.6
22.5°	1730.8	1726.5	1721.7	1709.5	1682.5	1649.7	1603.7	1535.2	1460.7	1376.8	1286.5
25°	1715.8	1720.9	1721.7	1718.2	1708.3	1688.9	1651.6	1598.2	1522.9	1421.9	1330.8
27.5°	1599.4	1612.4	1629.1	1640.1	1658.0	1669.9	1658.0	1624.3	1562.5	1472.2	1360.1
30°	1405.3	1389.4	1428.6	1478.2	1511.8	1571.2	1604.5	1606.5	1575.2	1500.3	1391.8
32.5°	1135.9	1161.7	1173.6	1237.3	1320.9	1389.4	1463.9	1530.0	1545.5	1501.9	1410.4
35°	924.4	946.2	977.9	1009.6	1088.8	1156.9	1273.4	1374.8	1455.6	1466.3	1408.0
37.5°	768.4	781.1	800.5	834.1	888.4	972.8	1065.0	1196.9	1308.2	1386.7	1378.7
40°	651.1	654.3	676.9	701.1	743.0	809.6	890.8	1004.1	1144.3	1265.9	1316.6
42.5°	563.2	571.1	577.5	600.4	631.7	677.7	751.8	840.5	966.0	1110.6	1221.9
45°	499.1	507.0	512.9	528.4	552.1	585.8	638.5	724.0	821.9	966.4	1099.9
47.5°	454.7	453.9	459.1	471.3	488.4	515.3	554.1	611.1	705.0	825.8	965.6
50°	406.4	412.7	414.3	423.4	436.1	454.7	485.6	532.3	606.0	709.0	834.9
52.5°	372.3	373.1	378.3	384.2	394.9	408.4	434.1	468.2	522.0	606.0	719.3
55°	339.0	339.0	343.4	348.5	354.9	368.0	385.8	412.7	456.7	524.8	620.6
57.5°	308.1	309.7	313.7	314.9	320.4	329.5	345.0	366.4	400.0	455.1	534.3
60°	277.3	280.8	280.4	283.6	288.3	295.1	307.8	324.4	353.7	395.7	459.8
62.5°	250.3	249.1	249.1	253.1	257.8	264.2	271.3	285.2	308.9	345.0	397.3
65°	220.2	219.4	222.2	224.6	226.2	230.9	237.2	249.9	266.6	294.3	336.7
67.5°	194.1	191.7	193.7	194.5	197.2	201.2	207.5	215.5	228.9	252.3	286.4
70°	167.1	165.2	164.8	165.6	167.9	170.7	175.1	182.6	194.9	212.7	236.1
72.5°	139.4	138.2	138.2	140.2	141.0	142.6	145.4	152.1	161.2	173.5	194.9
75°	113.3	113.3	113.3	113.7	114.9	116.4	118.8	122.4	129.9	139.4	154.1
77.5°	89.5	89.9	89.1	88.7	90.7	91.5	91.9	95.9	100.2	107.3	118.8
80°	66.5	64.6	65.4	66.5	67.3	67.7	68.9	69.7	73.3	76.8	84.4
82.5°	45.2	43.6	43.6	45.5	45.5	45.9	47.1	48.3	49.1	52.3	55.5
85°	26.1	26.1	26.5	26.5	26.9	26.5	27.7	28.1	28.1	30.1	32.5
87.5°	11.9	11.1	11.5	11.9	11.5	11.9	12.3	12.7	13.1	13.5	13.9
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: P242458

CATALOG NUMBER: S123DRP-S775D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	817.5	817.5	817.5	817.5	817.5	817.5	817.5	817.5	817.5	817.5	817.5
2.5°	849.2	846.0	842.8	837.3	832.5	825.8	823.8	821.5	814.3	808.0	803.2
5°	894.3	884.8	871.0	858.3	848.0	834.1	826.2	817.9	806.0	795.3	786.6
7.5°	937.5	920.9	901.5	880.5	860.3	840.9	825.4	811.6	796.1	781.1	769.6
10°	991.0	964.0	933.9	901.5	873.7	846.8	824.2	804.4	783.0	764.4	749.0
12.5°	1052.0	1008.8	964.4	923.3	889.2	849.2	820.7	794.1	769.2	745.8	728.0
15°	1097.5	1046.8	997.7	943.5	893.5	846.8	814.3	782.6	754.5	731.6	709.4
17.5°	1142.7	1087.2	1024.6	959.3	900.7	846.8	802.4	768.4	733.9	706.2	684.8
20°	1179.9	1114.6	1041.3	972.8	906.2	844.4	794.5	751.8	713.7	684.0	659.1
22.5°	1212.0	1132.8	1056.3	981.9	905.8	838.1	779.9	735.5	693.5	664.6	637.7
25°	1232.2	1140.7	1064.6	978.7	895.9	827.0	763.6	713.7	672.5	638.5	611.1
27.5°	1251.2	1139.5	1053.6	960.9	884.0	815.5	747.4	693.9	650.8	613.9	585.8
30°	1270.2	1141.5	1034.2	942.7	865.0	793.7	728.0	674.1	628.2	590.5	564.4
32.5°	1282.1	1140.3	1016.3	917.3	834.9	773.9	707.0	650.8	603.2	566.4	541.4
35°	1285.3	1133.6	995.3	880.5	802.1	740.7	684.8	627.0	577.5	543.0	514.5
37.5°	1278.5	1121.3	972.4	847.2	762.4	701.4	652.7	603.2	555.7	517.3	492.3
40°	1256.7	1109.4	944.6	811.6	721.3	663.0	623.0	574.7	528.0	491.9	469.0
42.5°	1215.2	1085.2	914.1	772.0	678.5	620.3	584.2	545.8	502.2	469.0	446.0
45°	1142.3	1048.0	883.6	732.3	636.5	576.3	543.8	514.5	474.5	441.6	421.8
47.5°	1049.2	997.7	839.7	690.8	592.5	534.3	500.2	476.1	444.8	418.3	398.8
50°	951.4	932.8	794.9	648.0	548.6	491.9	459.4	438.1	417.1	390.5	373.1
52.5°	838.5	857.5	742.6	603.6	503.8	448.4	418.3	402.4	383.8	363.2	348.5
55°	733.9	775.5	680.9	552.9	459.4	406.4	377.5	362.4	351.3	335.1	322.0
57.5°	632.5	685.6	616.7	501.8	415.9	369.5	341.0	324.0	316.9	307.8	297.1
60°	544.2	596.5	547.0	450.3	371.9	328.3	303.8	289.9	282.8	276.9	268.1
62.5°	465.4	518.5	478.9	398.1	328.7	289.1	268.5	255.1	249.9	247.5	240.4
65°	394.5	440.0	412.3	343.4	287.9	252.3	232.9	223.4	218.2	217.0	212.3
67.5°	333.1	368.3	347.0	295.1	249.9	217.4	200.4	192.1	187.7	187.3	183.4
70°	272.9	305.4	289.9	244.0	206.4	182.2	167.9	160.8	158.4	158.0	156.1
72.5°	226.2	246.4	234.9	198.4	171.5	150.1	140.6	133.1	130.3	131.1	129.9
75°	174.3	191.3	184.2	157.6	134.3	120.0	111.3	106.5	104.2	105.4	103.8
77.5°	133.1	145.0	137.8	117.6	102.6	91.9	85.2	82.0	79.6	79.6	78.8
80°	94.7	101.0	97.4	86.3	74.5	65.7	60.6	58.6	57.4	57.0	56.6
82.5°	60.6	65.7	61.4	54.7	47.5	43.2	40.8	38.0	37.2	37.6	37.2
85°	34.1	36.0	34.5	29.7	26.5	24.2	22.6	21.4	20.6	21.0	20.2
87.5°	14.7	15.1	13.9	12.3	11.5	10.3	10.3	9.5	8.7	8.7	8.3
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	817.5	817.5	817.5	817.5	817.5	817.5	817.5	817.5	817.5	817.5	817.5
2.5°	800.5	797.7	793.7	787.8	783.0	775.5	775.5	776.7	776.7	776.3	775.5
5°	779.5	773.5	766.4	758.1	749.4	740.7	739.1	735.9	733.5	731.9	730.0
7.5°	758.1	748.2	738.3	726.8	716.9	708.6	702.6	697.5	694.3	690.8	688.0
10°	736.3	723.2	711.0	698.7	685.2	674.5	667.8	663.0	659.5	656.3	654.7
12.5°	710.6	695.1	681.2	669.8	654.7	643.6	637.3	635.7	631.3	623.8	619.9
15°	685.6	671.7	655.5	637.7	630.6	617.1	609.6	606.0	603.6	598.5	596.9
17.5°	665.0	646.4	627.8	614.7	601.6	590.9	586.6	581.8	578.7	573.9	572.7
20°	639.3	623.0	606.4	592.1	578.3	566.4	562.8	559.7	556.5	554.5	552.9
22.5°	613.1	596.9	583.8	570.7	555.7	549.0	545.0	541.4	539.5	538.3	536.7
25°	589.0	574.7	559.3	547.4	535.5	530.3	528.0	526.0	524.4	522.4	522.0
27.5°	567.6	551.7	538.7	527.2	518.5	514.1	511.3	510.1	510.1	510.9	511.3
30°	543.0	528.8	518.5	509.0	501.0	497.1	496.7	496.7	498.3	498.7	499.5
32.5°	520.4	509.4	499.1	489.9	484.4	482.0	484.0	484.0	485.2	486.4	488.0
35°	498.7	488.4	480.4	472.5	467.4	468.6	469.3	470.1	472.1	474.5	476.1
37.5°	478.1	468.6	460.2	453.9	450.7	453.1	455.1	456.7	459.1	461.0	462.6
40°	455.5	448.8	440.8	435.3	436.1	437.3	438.9	440.8	442.8	444.0	445.6
42.5°	434.5	427.4	421.8	417.5	418.7	420.2	421.0	421.8	424.2	426.6	427.4
45°	413.1	407.6	402.0	399.2	400.0	400.8	401.6	402.8	404.8	406.4	406.8
47.5°	388.9	385.0	381.4	378.3	379.8	379.4	380.6	383.0	383.8	384.6	387.0
50°	366.0	362.4	358.1	357.3	357.3	357.3	357.7	360.8	360.8	362.4	364.0
52.5°	340.6	338.6	336.3	334.7	333.9	333.9	335.9	337.1	337.9	340.2	341.8
55°	315.7	313.3	310.9	309.7	308.9	309.7	312.9	313.7	315.7	316.9	318.0
57.5°	289.5	287.9	286.0	285.2	285.2	285.6	287.9	289.9	290.3	294.3	295.9
60°	263.8	261.0	259.4	259.4	258.6	262.2	261.4	265.4	266.2	268.5	271.3
62.5°	237.2	233.3	232.9	232.9	234.5	234.9	236.5	237.6	240.0	243.2	245.2
65°	208.3	206.4	209.1	208.7	207.9	210.3	210.3	212.3	214.7	217.4	221.8
67.5°	181.4	179.8	180.6	180.2	181.4	183.0	184.2	185.8	188.5	191.7	194.5
70°	154.1	155.3	153.3	154.9	156.1	156.4	157.2	159.6	162.8	164.8	167.9
72.5°	127.5	127.1	127.9	128.3	129.5	130.3	131.1	133.9	137.4	139.0	141.4
75°	102.2	101.8	103.0	103.0	105.0	105.8	106.5	107.7	110.9	113.3	115.3
77.5°	79.2	79.6	79.2	80.8	80.0	80.4	82.8	84.0	84.4	89.5	90.3
80°	56.2	57.0	57.4	57.8	58.2	57.4	60.2	61.4	61.4	64.2	66.1
82.5°	36.4	36.8	38.0	38.4	38.4	39.6	39.2	40.0	41.2	42.0	44.8
85°	20.2	21.4	21.8	21.4	21.8	21.0	22.2	22.6	23.0	23.0	23.0
87.5°	7.9	8.3	7.9	8.3	7.9	8.3	8.3	7.5	7.5	8.7	7.1
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: P242458

CATALOG NUMBER: S123DRP-S775D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	817.5	817.5	817.5	817.5
2.5°	772.7	772.3	775.1	773.1
5°	727.6	728.8	724.8	724.8
7.5°	686.8	685.2	685.6	682.8
10°	650.0	647.6	646.8	647.2
12.5°	619.5	619.5	613.1	613.1
15°	596.9	589.4	588.6	590.9
17.5°	571.9	567.6	568.0	567.2
20°	552.9	550.5	550.1	547.4
22.5°	535.5	535.1	535.5	532.3
25°	521.6	523.6	522.0	522.0
27.5°	512.1	512.1	510.9	510.9
30°	501.0	500.6	501.4	501.4
32.5°	489.9	490.7	490.7	491.1
35°	478.5	478.9	480.0	479.3
37.5°	463.4	465.4	465.0	465.8
40°	446.0	447.2	446.8	446.8
42.5°	428.2	428.9	427.8	427.0
45°	408.4	407.6	408.7	407.2
47.5°	386.6	387.0	387.4	388.9
50°	364.8	367.2	367.2	366.8
52.5°	343.4	344.2	346.2	346.2
55°	321.2	322.0	322.8	323.2
57.5°	298.6	298.2	299.8	300.2
60°	274.5	274.5	277.6	278.8
62.5°	248.7	250.3	253.5	251.1
65°	223.8	227.0	226.6	228.1
67.5°	197.6	199.6	202.8	202.8
70°	171.1	173.1	174.7	175.9
72.5°	145.4	146.2	150.5	148.1
75°	118.0	120.8	123.2	122.0
77.5°	91.9	95.5	96.2	95.1
80°	68.9	68.5	70.9	70.5
82.5°	45.9	45.5	46.3	46.7
85°	24.6	25.7	24.2	23.8
87.5°	7.1	7.1	6.7	6.3
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242458
 CATALOG NUMBER: S123DRP-S775D927-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	18.35	19.91	18.72	20.22	20.54	18.91	20.46	19.27	20.77	21.09
	3H	19.90	21.30	20.28	21.63	21.99	20.24	21.64	20.62	21.96	22.33
	4H	20.47	21.78	20.86	22.13	22.51	20.70	22.01	21.10	22.36	22.74
	6H	20.86	22.08	21.28	22.45	22.84	20.99	22.21	21.40	22.57	22.96
	8H	20.98	22.13	21.40	22.52	22.92	21.07	22.22	21.49	22.61	23.01
	12H	21.04	22.15	21.47	22.54	22.96	21.10	22.21	21.53	22.59	23.02
4H	2H	19.50	20.82	19.90	21.17	21.54	19.67	20.98	20.07	21.33	21.71
	3H	21.10	22.19	21.51	22.59	22.99	21.47	22.57	21.88	22.97	23.37
	4H	21.72	22.71	22.15	23.12	23.56	22.04	23.03	22.47	23.44	23.88
	6H	22.19	23.05	22.65	23.49	23.95	22.41	23.26	22.86	23.71	24.16
	8H	22.33	23.13	22.79	23.58	24.04	22.49	23.30	22.96	23.74	24.21
	12H	22.42	23.14	22.91	23.62	24.09	22.55	23.26	23.03	23.74	24.21
8H	4H	22.20	23.01	22.67	23.45	23.92	22.34	23.15	22.81	23.59	24.06
	6H	22.75	23.42	23.25	23.91	24.38	22.85	23.52	23.35	24.01	24.49
	8H	22.94	23.54	23.45	24.04	24.53	23.00	23.60	23.51	24.10	24.59
	12H	23.08	23.61	23.59	24.10	24.67	23.10	23.62	23.61	24.11	24.68
12H	4H	22.26	22.97	22.74	23.45	23.92	22.36	23.08	22.84	23.55	24.02
	6H	22.83	23.43	23.34	23.93	24.42	22.89	23.48	23.40	23.99	24.48
	8H	23.07	23.59	23.58	24.08	24.65	23.09	23.62	23.60	24.11	24.67