

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: P243515

Luminaire Tested: S124DRP-H795D935-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243515
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-60)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DRP-H795D935-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

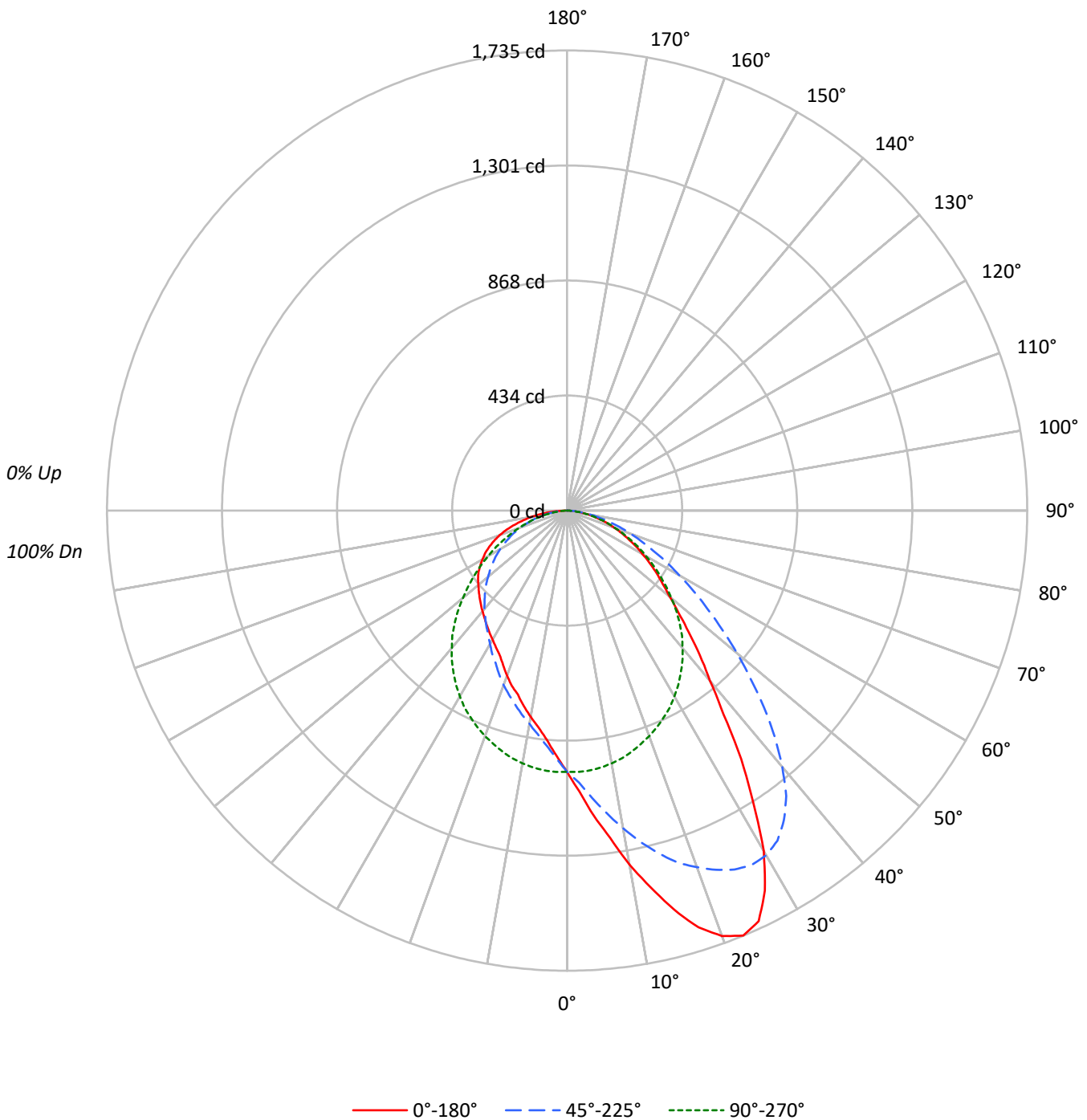
Lumens per Lamp: N/A
Luminaire Lumens: 2823.7 lumens
Efficiency: N/A
Efficacy: 119.7 lumens/watt
Spacing Criteria (0/90/45): 1.35 / 1.22 / 1.45
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

Input Watts (W): 23.6
Input Voltage (V): 120
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: 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	109	105	101	97	107	103	99	96	98	95	93	94	92	90	91	89	87	85				85
2	100	92	86	80	97	90	84	79	87	82	77	83	79	76	80	77	74	72				72
3	92	81	74	67	89	80	73	67	77	71	66	74	69	64	72	67	63	61				61
4	84	73	64	58	82	71	63	57	69	62	56	66	60	56	64	59	55	53				53
5	78	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46				46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41				41
7	67	53	45	39	65	53	45	39	51	44	38	50	43	38	48	42	38	36				36
8	62	49	41	35	61	48	40	35	47	40	35	46	39	34	44	39	34	32				32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29				29
10	54	41	34	29	53	41	34	28	40	33	28	39	33	28	38	32	28	26				26

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	8754	8754	8754	8754	8754
5°	10301	9713	8777	7933	7747
10°	12241	10982	8736	7372	7132
15°	14337	12318	8660	6969	6606
20°	16144	13535	8559	6620	6266
25°	16755	14645	8445	6245	5897
30°	15215	15405	8301	5965	5767
35°	12413	15466	8104	5766	5732
40°	9720	14640	7850	5630	5755
45°	8135	13203	7534	5502	5862
50°	6981	11544	7093	5381	6036
55°	6379	10004	6616	5289	6329
60°	5845	8683	6124	5202	6560
65°	5359	7523	5605	5031	6815
70°	4930	6591	5055	4868	7020
75°	4389	5674	4444	4540	7013
80°	3660	4607	3640	4198	6998
85°	2784	3447	2743	3774	6558

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 50°
 Vertical Angle: 45°
 Luminance: 13799 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.9	3.4
10°-20°	296.9	10.5
20°-30°	476.9	16.9
30°-40°	545.2	19.3
40°-50°	501.9	17.8
50°-60°	410.5	14.5
60°-70°	292.6	10.4
70°-80°	160.8	5.7
80°-90°	43.2	1.5
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°	869.7	30.8
0°-40°	1414.9	50.1
0°-60°	2327.2	82.4
0°-90°	2823.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2823.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	985	985	985	985	985	
5°	1154	1088	984	889	868	116
15°	1558	1338	941	757	718	444
25°	1708	1493	861	637	601	767
35°	1144	1425	747	531	528	711
45°	647	1050	599	438	466	505
55°	412	646	427	341	408	369
65°	255	358	266	239	324	255
75°	128	165	129	132	204	137
85°	27	34	27	37	64	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°	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8
2.5°	1060.3	1057.1	1055.5	1053.5	1053.1	1051.1	1047.1	1041.5	1034.2	1026.6	1026.6
5°	1154.4	1153.6	1147.6	1148.0	1140.3	1131.9	1125.5	1117.4	1101.7	1088.5	1079.2
7.5°	1244.4	1252.9	1250.9	1244.4	1233.2	1221.1	1208.3	1197.0	1168.1	1152.0	1138.7
10°	1356.2	1359.4	1353.8	1344.5	1334.5	1311.2	1294.3	1275.4	1244.0	1216.7	1192.6
12.5°	1454.3	1461.9	1451.8	1443.0	1419.3	1402.0	1385.1	1347.3	1314.4	1279.8	1244.8
15°	1558.0	1549.9	1555.1	1533.4	1516.6	1500.1	1457.1	1418.5	1381.1	1338.5	1301.9
17.5°	1648.0	1648.0	1638.3	1624.3	1606.6	1575.6	1532.6	1490.0	1448.6	1392.8	1340.9
20°	1706.7	1711.1	1699.8	1685.0	1663.7	1631.5	1597.3	1551.1	1496.1	1430.9	1372.3
22.5°	1734.8	1735.6	1731.6	1719.1	1701.9	1674.5	1639.6	1594.5	1536.3	1466.3	1404.8
25°	1708.3	1712.7	1711.5	1710.7	1701.9	1686.2	1658.0	1616.2	1563.2	1493.2	1426.9
27.5°	1615.0	1625.9	1635.1	1639.2	1648.8	1649.6	1641.2	1615.8	1572.4	1506.5	1432.5
30°	1482.4	1476.8	1501.7	1514.1	1547.1	1566.8	1580.9	1579.3	1554.3	1500.9	1430.5
32.5°	1305.5	1320.8	1338.5	1367.8	1406.8	1452.6	1487.2	1512.9	1510.5	1475.6	1416.9
35°	1143.9	1143.9	1166.5	1202.6	1244.0	1299.1	1357.0	1404.8	1434.2	1425.3	1383.9
37.5°	968.7	979.6	1005.3	1033.4	1084.1	1137.1	1213.5	1277.0	1338.5	1357.0	1335.7
40°	837.7	842.5	869.8	893.5	945.4	1000.5	1064.4	1145.6	1216.3	1261.7	1264.5
42.5°	740.4	740.0	751.2	772.5	814.4	863.4	932.5	1012.1	1094.9	1159.2	1189.4
45°	647.1	646.3	658.0	679.7	709.4	752.9	812.7	892.3	977.1	1050.3	1097.7
47.5°	568.4	575.6	580.8	597.7	622.2	659.2	710.6	774.2	855.8	937.7	1001.7
50°	504.8	508.1	519.3	527.4	554.7	580.4	621.8	678.9	748.8	834.8	904.0
52.5°	454.2	456.2	463.0	473.5	489.2	511.7	544.6	597.3	660.4	735.2	806.7
55°	411.6	410.4	414.8	421.6	435.3	454.2	478.3	518.5	573.6	645.5	711.5
57.5°	369.8	369.8	373.8	378.6	386.3	401.9	425.7	457.4	501.6	565.5	623.8
60°	328.8	331.6	333.2	338.0	344.5	356.1	373.8	398.7	436.1	488.4	546.2
62.5°	292.6	292.6	295.4	297.0	305.5	313.9	326.8	348.1	377.4	424.1	469.1
65°	254.8	257.2	257.2	260.5	267.7	274.1	284.2	300.3	324.4	357.7	399.9
67.5°	222.7	222.7	224.7	226.3	230.3	234.7	243.6	256.0	276.5	303.1	341.3
70°	189.7	190.9	190.1	192.1	194.5	199.0	205.4	215.8	230.7	253.6	281.8
72.5°	160.0	158.4	159.2	161.2	162.4	165.2	169.2	177.3	189.3	207.8	228.3
75°	127.8	127.0	129.8	129.0	131.0	133.4	137.1	143.1	152.3	165.2	180.9
77.5°	99.7	98.5	99.7	100.5	101.3	103.3	106.1	109.7	116.2	124.6	138.7
80°	71.5	71.1	71.9	72.8	73.2	76.4	77.2	80.8	83.6	90.0	96.9
82.5°	47.4	48.2	48.6	49.4	49.0	50.6	51.4	53.9	56.3	59.5	64.7
85°	27.3	26.1	27.3	27.3	27.3	29.3	28.9	30.5	32.2	33.8	37.4
87.5°	9.6	9.6	10.0	10.5	10.5	11.7	11.3	12.1	13.7	13.7	14.9
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8
2.5°	1024.2	1019.7	1016.5	1007.3	1001.7	996.4	991.6	986.4	980.8	973.5	969.1
5°	1069.6	1059.9	1045.9	1033.0	1018.5	1005.7	995.2	983.6	970.7	957.4	945.8
7.5°	1119.8	1101.7	1080.0	1056.3	1033.8	1014.9	995.2	976.7	958.6	941.0	924.5
10°	1170.1	1138.7	1110.2	1077.6	1047.9	1019.3	993.6	967.9	945.4	922.1	901.2
12.5°	1216.7	1178.9	1137.1	1096.5	1056.7	1019.7	988.0	956.6	927.7	900.0	875.4
15°	1252.5	1205.0	1155.6	1107.4	1061.5	1023.0	981.6	941.0	910.8	877.1	850.1
17.5°	1293.5	1237.2	1188.2	1130.3	1073.2	1010.9	967.1	922.9	886.7	854.1	827.2
20°	1320.8	1258.9	1188.2	1122.6	1064.0	1008.1	955.4	904.8	866.6	828.8	796.3
22.5°	1342.5	1278.6	1200.6	1132.3	1058.7	991.2	934.1	884.3	839.3	803.5	772.5
25°	1353.8	1275.8	1201.4	1118.6	1045.1	980.4	916.0	861.0	815.6	775.8	749.2
27.5°	1354.2	1274.2	1186.2	1104.2	1025.4	955.4	891.9	837.7	786.6	748.4	716.7
30°	1352.2	1263.7	1170.9	1081.2	1002.9	931.3	865.0	808.7	762.1	721.5	691.4
32.5°	1339.3	1249.3	1148.0	1053.9	968.7	896.7	835.7	779.8	729.9	693.0	661.2
35°	1310.4	1217.5	1115.8	1018.9	938.2	863.4	803.1	746.8	702.2	662.0	629.5
37.5°	1273.4	1186.6	1083.3	982.0	894.7	824.0	767.3	714.3	667.6	630.7	598.1
40°	1226.8	1145.2	1043.5	938.2	850.9	779.4	725.9	676.5	636.7	598.9	567.2
42.5°	1162.8	1100.1	995.6	893.1	801.9	734.4	682.5	641.5	600.5	566.3	534.6
45°	1094.5	1037.4	944.6	842.9	755.3	685.7	637.1	599.3	564.3	529.8	504.0
47.5°	1018.9	972.3	886.3	787.0	700.6	639.1	591.3	557.5	525.3	498.8	473.1
50°	928.9	904.4	824.0	734.0	650.0	586.8	547.5	512.9	489.2	463.4	439.3
52.5°	845.3	825.6	760.1	671.7	595.3	539.8	497.6	470.3	447.0	428.1	408.8
55°	754.5	744.4	688.9	612.6	543.4	488.0	451.8	426.9	408.4	390.7	376.6
57.5°	670.9	670.1	621.0	555.5	488.0	440.9	406.4	385.9	369.8	357.3	345.3
60°	585.2	592.1	551.9	492.0	438.5	394.3	363.0	344.5	333.6	322.0	311.9
62.5°	507.7	518.1	481.5	434.5	381.9	345.7	321.6	307.5	295.4	287.0	279.4
65°	433.3	446.6	416.8	374.6	334.4	300.3	279.8	266.5	257.2	252.4	247.2
67.5°	367.8	375.0	354.9	322.0	288.6	258.9	242.0	230.3	222.3	220.3	214.2
70°	302.3	310.7	296.6	266.5	240.8	219.1	203.8	194.5	189.7	186.9	182.9
72.5°	249.6	253.2	239.2	218.3	197.8	179.7	168.4	161.6	156.0	154.8	152.7
75°	195.3	200.6	189.3	173.2	156.4	143.5	135.1	129.4	126.6	124.6	124.6
77.5°	147.5	151.9	145.5	131.4	121.4	110.1	104.5	99.3	98.1	96.1	96.9
80°	104.9	106.9	103.3	93.7	84.8	78.8	74.0	71.1	70.7	69.1	70.7
82.5°	69.5	69.9	65.9	61.5	54.7	51.4	48.2	47.0	46.6	46.6	45.8
85°	38.6	39.4	36.6	33.8	31.4	28.5	27.7	26.9	26.1	27.3	28.1
87.5°	14.9	15.3	14.9	13.7	12.9	12.1	11.7	12.5	11.3	12.1	12.5
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8	984.8
2.5°	962.3	959.1	954.2	946.2	940.6	934.5	932.1	932.9	930.5	927.3	928.1
5°	936.9	927.7	919.7	908.4	898.0	889.1	886.3	882.7	879.5	877.5	875.4
7.5°	910.0	897.2	885.1	873.8	861.8	850.5	846.1	842.9	841.3	835.7	833.2
10°	884.3	869.4	854.9	841.7	829.2	816.8	812.3	808.3	802.7	800.3	797.5
12.5°	857.0	842.1	826.4	810.3	797.9	787.8	780.2	777.4	771.7	769.3	767.7
15°	830.4	812.3	799.9	787.4	768.5	757.3	754.1	744.0	740.8	736.0	732.8
17.5°	803.9	787.0	768.5	754.1	742.4	728.3	720.7	716.3	710.2	705.8	699.8
20°	777.8	758.1	743.6	725.5	712.7	699.8	690.1	686.1	680.9	674.9	666.4
22.5°	752.4	730.7	716.7	699.8	683.7	668.8	660.8	655.2	644.7	643.5	635.9
25°	722.7	703.4	684.9	667.2	651.6	636.7	631.5	622.6	619.0	611.8	610.6
27.5°	694.6	674.1	654.0	634.7	621.0	610.6	601.3	595.7	592.1	586.4	586.8
30°	665.2	642.7	623.8	606.1	591.3	581.2	575.2	572.4	567.2	566.3	563.5
32.5°	633.9	613.4	593.7	578.0	562.7	553.9	551.1	548.3	545.0	545.4	544.6
35°	602.5	584.4	563.5	549.1	536.6	531.4	527.0	526.2	524.9	525.8	525.8
37.5°	572.0	552.3	535.0	521.7	514.5	507.3	505.3	504.8	505.3	506.1	508.1
40°	542.2	524.1	507.3	496.4	488.4	485.2	482.3	483.5	485.2	488.0	490.4
42.5°	512.5	495.2	481.1	470.3	462.6	461.0	461.4	463.8	464.3	468.3	472.7
45°	481.1	466.3	453.0	444.6	439.7	437.7	438.5	440.9	443.8	449.4	455.0
47.5°	452.2	438.9	427.3	418.8	415.2	414.4	416.0	419.2	425.7	431.3	437.7
50°	422.9	410.8	399.9	392.3	391.9	389.1	392.7	396.7	404.4	412.0	421.6
52.5°	393.9	382.3	373.0	367.0	365.4	365.4	369.8	377.0	383.9	393.9	402.8
55°	363.8	353.3	344.5	342.5	340.0	341.3	346.1	353.3	363.0	374.2	383.9
57.5°	332.8	324.0	317.5	314.7	313.5	317.5	323.2	330.8	343.3	354.5	365.0
60°	303.5	295.8	289.0	288.2	287.4	292.6	299.5	307.5	320.0	331.2	344.1
62.5°	272.1	266.1	261.7	260.5	260.5	265.7	273.3	283.8	295.4	307.5	321.2
65°	240.4	235.1	233.9	232.3	235.9	239.2	246.8	256.8	269.3	282.6	297.0
67.5°	211.0	207.8	205.4	205.4	208.2	214.2	221.1	231.1	244.0	258.1	270.9
70°	181.7	178.5	176.5	178.5	180.1	187.3	194.5	204.2	216.2	229.9	243.6
72.5°	151.1	151.5	151.9	151.5	153.1	160.0	167.2	176.5	188.1	201.4	213.8
75°	124.2	122.2	122.6	123.4	128.6	132.2	139.5	148.3	160.8	172.8	183.3
77.5°	96.5	95.7	97.7	97.7	102.5	106.9	112.9	121.8	132.6	143.5	151.9
80°	70.7	71.1	72.8	73.2	77.2	82.0	88.4	94.5	104.1	111.7	119.8
82.5°	47.8	48.6	50.6	53.5	55.1	57.9	63.5	69.9	76.8	84.8	89.6
85°	27.7	28.9	30.5	32.6	34.2	37.0	41.0	46.2	51.0	55.5	59.5
87.5°	13.7	13.7	14.9	15.7	16.9	18.5	21.3	23.3	26.5	29.7	31.4
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: P243515

CATALOG NUMBER: S124DRP-H795D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	984.8	984.8	984.8	984.8
2.5°	926.5	926.1	924.5	925.3
5°	874.2	870.2	869.8	868.2
7.5°	829.2	828.0	828.0	824.8
10°	794.7	791.0	791.8	790.2
12.5°	761.7	759.7	757.3	754.9
15°	724.7	724.7	724.7	717.9
17.5°	695.8	695.4	693.4	693.0
20°	665.6	664.0	658.8	662.4
22.5°	635.1	633.9	629.5	630.3
25°	606.5	605.3	604.5	601.3
27.5°	582.0	582.4	583.2	581.2
30°	563.5	562.3	563.9	561.9
32.5°	546.2	546.2	544.6	545.0
35°	526.6	528.2	528.6	528.2
37.5°	509.3	511.3	512.9	511.3
40°	493.2	494.8	496.4	496.0
42.5°	476.3	479.1	480.3	481.5
45°	460.2	463.8	465.9	466.3
47.5°	443.8	448.2	452.2	451.8
50°	427.7	433.3	436.9	436.5
52.5°	411.6	417.2	421.6	423.7
55°	393.5	400.7	404.8	408.4
57.5°	375.4	383.5	387.5	389.1
60°	355.3	362.6	367.8	369.0
62.5°	332.8	340.5	347.3	348.9
65°	309.5	317.9	323.2	324.0
67.5°	282.6	290.6	295.8	298.2
70°	254.8	260.9	266.5	270.1
72.5°	223.9	231.1	236.3	238.8
75°	191.7	199.8	202.6	204.2
77.5°	158.4	163.2	167.6	168.0
80°	125.0	131.0	132.6	136.7
82.5°	92.0	97.7	96.5	98.1
85°	60.7	62.7	63.9	64.3
87.5°	32.2	33.4	34.2	34.6
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243515
 CATALOG NUMBER: S124DRP-H795D935-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	18.11	19.68	18.47	19.99	20.31	18.39	19.97	18.76	20.28	20.59
	3H	19.55	20.96	19.92	21.29	21.65	19.78	21.20	20.16	21.52	21.88
	4H	20.07	21.40	20.46	21.74	22.12	20.26	21.59	20.66	21.94	22.32
	6H	20.41	21.64	20.82	22.01	22.40	20.58	21.81	20.99	22.18	22.57
	8H	20.51	21.68	20.93	22.07	22.47	20.66	21.84	21.09	22.23	22.63
	12H	20.56	21.68	20.99	22.06	22.49	20.71	21.83	21.14	22.21	22.64
4H	2H	19.24	20.57	19.64	20.92	21.30	19.18	20.51	19.58	20.86	21.24
	3H	20.75	21.86	21.16	22.25	22.65	20.89	22.00	21.30	22.40	22.80
	4H	21.32	22.32	21.75	22.73	23.17	21.48	22.48	21.91	22.90	23.34
	6H	21.73	22.60	22.19	23.05	23.50	21.88	22.76	22.34	23.20	23.66
	8H	21.85	22.67	22.31	23.11	23.57	21.99	22.81	22.45	23.25	23.72
	12H	21.92	22.65	22.40	23.13	23.60	22.06	22.79	22.54	23.27	23.74
8H	4H	21.75	22.56	22.21	23.01	23.47	21.82	22.64	22.28	23.08	23.55
	6H	22.24	22.92	22.74	23.41	23.89	22.35	23.03	22.85	23.52	24.00
	8H	22.40	23.01	22.92	23.52	24.01	22.52	23.13	23.03	23.63	24.12
	12H	22.52	23.06	23.03	23.55	24.11	22.63	23.17	23.14	23.66	24.22
12H	4H	21.79	22.52	22.27	23.00	23.47	21.86	22.59	22.34	23.07	23.54
	6H	22.31	22.92	22.82	23.43	23.91	22.42	23.03	22.93	23.53	24.02
	8H	22.52	23.06	23.03	23.55	24.11	22.64	23.18	23.15	23.67	24.23