

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P832205

Luminaire Tested: S123RDIP-S560D1195U840-4F0-1E-UDD-G4

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P832205
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-2, G3-1807-864-17)
Test Lab: INNOVATION CENTER
Issue Date: 05/03/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDIP-S560D1195U840-4F0-1E-UDD-G4
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, GRAZE OPTIC
UPLIGHT 1195 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: -

Summary

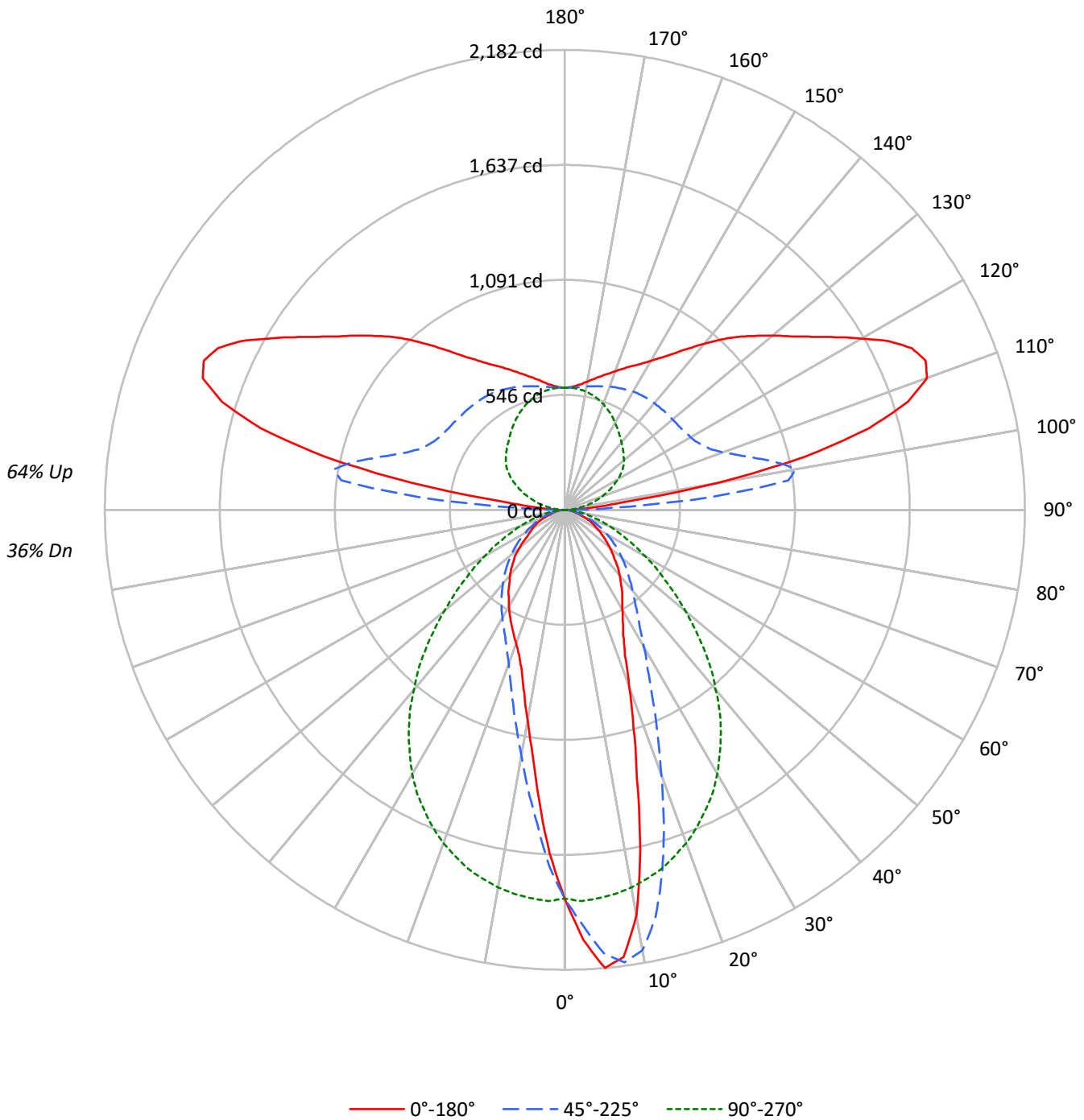
Lumens per Lamp: N/A
Luminaire Lumens: 6808.5 lumens
Efficiency: N/A
Efficacy: 134.6 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.8
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: Semi-Indirect

Input Watts (W): 50.6
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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	43	43	43	36				
1	95	91	88	84	86	83	80	77	67	65	63	52	51	50	39	38	38	31				
2	87	80	75	70	79	73	68	64	59	56	53	47	45	43	35	34	33	27				
3	80	71	64	59	72	65	59	54	53	49	45	42	39	37	32	30	28	24				
4	73	63	56	50	66	58	51	47	47	43	39	38	35	32	29	27	25	21				
5	68	57	49	44	61	52	45	40	43	38	34	34	31	28	26	24	22	19				
6	62	51	44	38	57	47	40	35	39	34	30	31	28	25	24	22	20	17				
7	58	46	39	34	52	43	36	31	35	30	27	29	25	23	22	20	18	15				
8	54	42	35	30	49	39	32	28	32	28	24	26	23	20	21	18	17	14				
9	50	39	32	27	46	36	29	25	30	25	22	24	21	18	19	17	15	13				
10	47	36	29	24	43	33	27	23	28	23	20	23	19	17	18	16	14	12				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	19853	19853	19853	19853	19853
5°	23573	22821	19977	16149	14993
10°	21357	23180	19878	12939	11100
15°	14705	19875	19668	10575	8781
20°	10230	15301	19274	8917	7718
25°	7796	11662	18699	7926	7113
30°	6786	9324	17980	7359	6589
35°	6230	7864	16962	6882	6112
40°	5685	7024	15631	6413	5674
45°	5135	6424	14193	5969	5238
50°	4660	5926	12499	5534	4699
55°	4215	5442	10871	5108	4031
60°	3776	4949	9442	4639	3810
65°	3487	4391	8127	4169	3601
70°	2832	3795	7091	3773	2927
75°	2483	3019	6005	3127	2578
80°	2250	2554	4922	2622	2436
85°	2050	2235	3730	2384	2235

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 14976 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	168.1	2.5
10°-20°	389.0	5.7
20°-30°	446.3	6.6
30°-40°	439.9	6.5
40°-50°	388.0	5.7
50°-60°	298.5	4.4
60°-70°	196.2	2.9
70°-80°	95.3	1.4
80°-90°	27.2	0.4
90°-100°	314.5	4.6
100°-110°	920.8	13.5
110°-120°	899.2	13.2
120°-130°	716.1	10.5
130°-140°	565.0	8.3
140°-150°	421.5	6.2
150°-160°	293.9	4.3
160°-170°	172.6	2.5
170°-180°	56.2	0.8
0°-30°	1003.5	14.7
0°-40°	1443.4	21.2
0°-60°	2129.8	31.3
0°-90°	2448.6	36.0
90°-120°	2134.6	31.4
90°-150°	3837.3	56.4
90°-180°	4360.0	64.0
0°-180°	6808.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1844	1844	1844	1844	1844	
5°	2182	2112	1849	1495	1388	199
15°	1320	1784	1765	949	788	372
25°	656	982	1574	667	599	310
35°	474	598	1291	524	465	296
45°	337	422	932	392	344	262
55°	225	290	579	272	215	201
65°	137	172	319	164	141	134
75°	60	73	144	75	62	64
85°	17	18	30	19	18	18
90°	34	29	2	29	34	19
95°	136	696	40	696	136	221
105°	1492	943	136	943	1492	1489
115°	1815	722	240	722	1815	1770
125°	1431	674	334	674	1431	1295
135°	1160	664	392	664	1160	900
145°	907	656	447	656	907	576
155°	752	635	508	635	752	350
165°	656	608	555	608	656	187
175°	590	583	578	583	590	57
180°	580	580	580	580	580	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4
2.5°	2044.0	2037.6	2031.2	2029.3	2027.4	2021.3	2015.3	2001.7	1988.1	1974.1	1960.1
5°	2181.7	2182.4	2183.2	2181.3	2179.4	2171.4	2163.5	2146.9	2130.2	2112.1	2093.9
7.5°	2139.3	2151.4	2163.5	2165.8	2168.0	2174.1	2180.1	2176.4	2172.6	2165.8	2159.0
10°	1954.0	1953.3	1952.5	1966.1	1979.7	2020.2	2060.7	2081.5	2102.2	2120.8	2139.3
12.5°	1651.6	1652.7	1653.8	1698.4	1743.1	1781.2	1819.4	1872.4	1925.3	1982.4	2039.5
15°	1319.6	1338.1	1356.6	1396.3	1436.0	1493.5	1551.0	1622.1	1693.1	1783.5	1873.9
17.5°	1083.6	1091.6	1099.5	1137.7	1175.9	1230.3	1284.8	1365.3	1445.9	1562.3	1678.8
20°	893.1	900.3	907.4	935.0	962.6	1014.8	1067.0	1143.8	1220.5	1335.8	1451.2
22.5°	745.6	759.6	773.6	792.1	810.7	848.5	886.3	964.5	1042.8	1147.9	1253.0
25°	656.4	662.8	669.2	685.1	701.0	737.3	773.6	825.4	877.2	981.9	1086.7
27.5°	595.9	597.8	599.7	611.4	623.1	646.6	670.0	718.0	766.0	852.2	938.5
30°	546.0	549.4	552.8	561.9	570.9	587.9	605.0	639.0	673.0	750.2	827.3
32.5°	507.4	509.3	511.2	518.8	526.3	538.8	551.3	578.1	605.0	663.9	722.9
35°	474.1	474.5	474.9	480.6	486.2	498.3	510.4	532.7	555.1	598.5	642.0
37.5°	436.3	439.0	441.6	445.8	449.9	460.5	471.1	489.3	507.4	543.3	579.3
40°	404.6	406.8	409.1	414.0	418.9	427.3	435.6	452.2	468.8	499.9	530.9
42.5°	372.8	374.3	375.8	380.7	385.7	395.9	406.1	419.3	432.5	458.3	484.0
45°	337.3	341.0	344.8	350.1	355.4	364.1	372.8	386.4	400.0	422.0	443.9
47.5°	307.8	309.7	311.6	316.1	320.6	331.2	341.8	353.9	366.0	386.4	406.8
50°	278.3	279.0	279.8	284.0	288.1	297.6	307.0	321.0	335.0	353.9	372.8
52.5°	250.3	252.2	254.1	258.2	262.4	268.8	275.3	289.6	304.0	322.5	341.0
55°	224.6	225.7	226.9	229.9	232.9	240.5	248.0	260.5	273.0	290.0	307.0
57.5°	200.4	201.9	203.4	205.7	208.0	214.8	221.6	232.5	243.5	260.5	277.5
60°	175.4	177.3	179.2	181.9	184.5	189.8	195.1	204.9	214.8	229.9	245.0
62.5°	157.3	157.7	158.0	160.3	162.6	166.4	170.1	178.1	186.0	201.2	216.3
65°	136.9	138.0	139.1	140.3	141.4	144.4	147.5	154.3	161.1	172.4	183.8
67.5°	115.7	116.8	118.0	119.9	121.7	124.4	127.0	131.6	136.1	146.7	157.3
70°	90.0	90.0	90.0	93.0	96.0	100.6	105.1	108.5	111.9	120.6	129.3
72.5°	73.4	73.7	74.1	74.5	74.9	77.5	80.2	85.8	91.5	96.8	102.1
75°	59.7	60.1	60.5	60.9	61.3	62.0	62.8	64.7	66.5	72.6	78.6
77.5°	47.6	48.0	48.4	48.8	49.2	49.9	50.7	51.4	52.2	54.4	56.7
80°	36.3	36.7	37.1	37.4	37.8	38.2	38.6	39.3	40.1	41.2	42.3
82.5°	26.5	26.5	26.5	26.5	26.5	27.2	28.0	28.0	28.0	28.7	29.5
85°	16.6	16.6	16.6	17.0	17.4	17.4	17.4	17.8	18.1	18.1	18.1
87.5°	7.6	7.2	6.8	7.2	7.6	7.6	7.6	7.9	8.3	8.3	8.3
90°	34.0	35.2	34.0	32.9	34.0	31.7	30.5	29.3	28.2	29.3	25.8
92.5°	62.2	64.5	63.4	68.1	70.4	78.6	90.3	116.2	163.1	218.2	241.7
95°	136.1	140.8	149.0	159.6	181.9	224.1	286.3	422.4	564.4	695.8	619.5
97.5°	279.2	292.2	320.3	364.9	443.5	577.3	732.1	970.3	1106.4	1070.1	799.0
100°	735.7	734.5	780.3	865.9	984.4	1151.0	1288.3	1383.3	1342.3	1111.1	750.9
102.5°	1165.1	1199.1	1235.5	1298.9	1384.5	1474.9	1540.6	1520.6	1354.0	1034.9	680.5
105°	1492.5	1498.3	1535.9	1580.4	1634.4	1664.9	1642.6	1525.3	1280.1	943.3	625.4
107.5°	1706.0	1718.9	1734.2	1755.3	1762.3	1730.6	1639.1	1454.9	1174.5	862.4	585.5
110°	1828.0	1830.4	1832.7	1823.3	1790.5	1708.3	1560.5	1344.6	1075.9	795.5	564.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	1852.7	1851.5	1839.7	1805.7	1738.8	1627.4	1457.3	1235.5	990.3	750.9	552.6
115°	1815.1	1809.2	1785.8	1734.2	1646.2	1518.3	1345.8	1141.6	924.6	721.6	551.5
117.5°	1733.0	1724.8	1689.6	1632.1	1540.6	1408.0	1249.6	1068.9	881.2	701.6	552.6
120°	1625.0	1618.0	1589.8	1524.1	1431.4	1312.9	1172.1	1013.7	848.3	688.7	557.3
122.5°	1524.1	1514.7	1483.1	1425.6	1345.8	1237.8	1110.0	970.3	821.3	680.5	565.5
125°	1431.4	1423.2	1393.9	1342.3	1267.2	1173.3	1060.7	932.8	799.0	673.5	573.7
127.5°	1351.7	1344.6	1317.6	1273.0	1205.0	1118.2	1014.9	898.8	777.9	670.0	583.1
130°	1285.9	1276.6	1251.9	1209.7	1147.5	1067.7	972.7	867.1	761.5	666.4	592.5
132.5°	1221.4	1215.5	1194.4	1152.2	1094.7	1019.6	932.8	837.7	746.2	665.3	599.6
135°	1160.4	1152.2	1131.1	1095.9	1038.4	971.5	895.2	811.9	733.3	664.1	606.6
137.5°	1095.9	1088.8	1071.2	1034.9	985.6	925.7	857.7	787.3	721.6	661.7	611.3
140°	1027.8	1029.0	1010.2	977.4	932.8	882.3	826.0	766.2	711.0	660.6	616.0
142.5°	964.5	965.6	949.2	921.0	884.7	842.4	795.5	746.2	701.6	658.2	619.5
145°	907.0	904.6	895.2	870.6	841.3	807.2	769.7	731.0	693.4	655.9	620.7
147.5°	857.7	856.5	847.1	829.5	806.1	781.4	749.7	718.1	685.2	652.4	620.7
150°	815.5	815.5	808.4	795.5	777.9	755.6	731.0	704.0	677.0	647.7	620.7
152.5°	780.3	780.3	776.7	765.0	752.1	734.5	713.4	691.1	667.6	641.8	617.2
155°	752.1	750.9	748.6	739.2	728.6	714.5	696.9	678.2	658.2	634.8	614.8
157.5°	725.1	725.1	722.8	715.7	706.3	694.6	680.5	664.1	647.7	628.9	611.3
160°	699.3	700.5	700.5	693.4	685.2	677.0	665.3	652.4	637.1	621.9	608.9
162.5°	675.8	677.0	677.0	671.1	666.4	659.4	648.8	638.3	626.5	614.8	604.3
165°	655.9	655.9	657.1	652.4	647.7	641.8	633.6	626.5	617.2	607.8	599.6
167.5°	635.9	635.9	637.1	633.6	631.2	626.5	621.9	616.0	607.8	600.7	594.9
170°	618.3	618.3	619.5	617.2	616.0	613.6	608.9	605.4	599.6	593.7	590.2
172.5°	601.9	603.1	605.4	603.1	603.1	601.9	598.4	596.0	591.3	587.8	586.7
175°	590.2	591.3	592.5	591.3	591.3	591.3	589.0	587.8	585.5	583.1	583.1
177.5°	582.0	582.0	584.3	583.1	584.3	584.3	583.1	582.0	580.8	579.6	580.8
180°	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4
2.5°	1958.2	1956.3	1938.2	1920.0	1902.2	1884.5	1871.2	1858.0	1835.7	1813.4	1799.4
5°	2079.6	2065.2	2036.5	2007.7	1964.6	1921.5	1885.2	1848.9	1802.8	1756.7	1718.1
7.5°	2147.2	2135.5	2100.7	2066.0	2008.9	1951.8	1895.0	1838.3	1770.3	1702.2	1644.0
10°	2149.1	2159.0	2130.2	2101.5	2037.2	1972.9	1895.8	1818.7	1727.2	1635.7	1560.4
12.5°	2081.8	2124.2	2118.1	2112.1	2046.7	1981.3	1887.5	1793.7	1681.4	1569.1	1475.0
15°	1955.9	2038.0	2062.2	2086.4	2032.3	1978.2	1871.6	1765.0	1633.0	1501.1	1392.9
17.5°	1793.7	1908.7	1972.6	2036.5	1997.1	1957.8	1841.0	1724.1	1575.6	1427.0	1309.4
20°	1601.6	1752.1	1852.3	1952.5	1938.2	1923.8	1803.2	1682.6	1522.2	1361.9	1234.5
22.5°	1411.8	1570.6	1709.0	1847.4	1862.2	1876.9	1755.2	1633.4	1458.0	1282.5	1152.8
25°	1248.1	1409.6	1574.4	1739.3	1772.5	1805.8	1690.1	1574.4	1392.6	1210.7	1081.8
27.5°	1092.0	1245.5	1427.0	1608.4	1668.9	1729.4	1623.6	1517.7	1328.3	1138.8	1010.3
30°	964.5	1101.8	1287.1	1472.3	1556.6	1641.0	1543.8	1446.6	1258.7	1070.8	944.9
32.5°	845.8	968.7	1154.7	1340.8	1438.7	1536.6	1452.7	1368.7	1188.0	1007.3	882.9
35°	752.0	862.1	1035.6	1209.2	1318.8	1428.5	1359.7	1290.8	1114.3	937.7	820.1
37.5°	671.5	763.8	926.7	1089.7	1206.1	1322.6	1265.1	1207.7	1041.7	875.7	764.5
40°	605.0	679.1	830.7	982.3	1096.5	1210.7	1161.5	1112.4	963.8	815.2	711.2
42.5°	547.9	611.8	747.9	884.0	988.7	1093.5	1061.0	1028.4	893.8	759.2	662.8
45°	497.6	551.3	671.1	791.0	887.4	983.8	958.1	932.4	816.3	700.2	611.8
47.5°	453.0	499.1	606.1	713.1	799.7	886.3	862.5	838.6	742.6	646.6	566.0
50°	412.1	451.5	540.7	629.9	707.8	785.7	766.0	746.4	667.0	587.6	518.0
52.5°	373.6	406.1	486.2	566.4	629.2	691.9	676.8	661.7	600.4	539.2	476.0
55°	336.9	366.8	434.4	502.1	555.8	609.5	594.4	579.3	531.6	484.0	428.4
57.5°	303.6	329.7	384.5	439.4	482.1	524.8	517.6	510.4	470.7	431.0	385.3
60°	268.5	291.9	339.2	386.4	420.8	455.2	446.9	438.6	410.2	381.9	342.6
62.5°	237.1	257.9	295.7	333.5	361.5	389.4	383.4	377.3	355.8	334.2	301.7
65°	204.2	224.6	255.2	285.8	307.8	329.7	324.4	319.1	302.9	286.6	260.5
67.5°	174.3	191.3	217.8	244.3	259.0	273.7	270.7	267.7	255.2	242.7	222.3
70°	144.1	158.8	180.7	202.7	212.9	223.1	224.2	225.3	214.0	202.7	187.5
72.5°	113.8	125.5	145.9	166.4	174.3	182.2	181.9	181.5	174.7	167.9	154.3
75°	87.3	96.0	111.9	127.8	134.6	141.4	142.9	144.4	138.0	131.6	124.0
77.5°	62.8	68.8	80.9	93.0	100.6	108.1	108.9	109.6	106.6	103.6	96.4
80°	44.2	46.1	53.7	61.3	69.2	77.1	78.3	79.4	76.4	73.4	68.8
82.5°	30.6	31.8	34.4	37.1	43.5	49.9	51.4	52.9	51.4	49.9	45.0
85°	18.5	18.9	20.0	21.2	24.2	27.2	28.7	30.2	29.5	28.7	26.1
87.5°	8.3	8.3	8.7	9.1	9.8	10.6	12.5	14.4	13.2	12.1	11.0
90°	22.3	18.8	15.3	12.9	10.6	7.0	4.7	2.3	4.7	7.0	10.6
92.5°	180.7	118.5	81.0	59.8	48.1	37.5	25.8	17.6	25.8	37.5	48.1
95°	427.1	252.3	152.5	106.8	76.3	56.3	43.4	39.9	43.4	56.3	76.3
97.5°	475.2	272.2	173.6	123.2	92.7	75.1	64.5	63.4	64.5	75.1	92.7
100°	442.3	268.7	186.6	140.8	112.6	96.2	88.0	86.8	88.0	96.2	112.6
102.5°	414.2	273.4	201.8	160.7	136.1	120.9	113.8	111.5	113.8	120.9	136.1
105°	403.6	282.8	219.4	183.0	160.7	146.7	139.6	136.1	139.6	146.7	160.7
107.5°	401.3	298.0	241.7	207.7	186.6	172.5	165.4	161.9	165.4	172.5	186.6
110°	407.1	318.0	265.2	232.3	212.4	199.5	193.6	190.1	193.6	199.5	212.4



TEST NUMBER: P832205

CATALOG NUMBER: S123RDIP-S560D1195U840-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	418.9	337.9	289.8	258.1	238.2	225.3	219.4	215.9	219.4	225.3	238.2
115°	431.8	360.2	315.6	283.9	264.0	252.3	245.2	240.5	245.2	252.3	264.0
117.5°	448.2	383.7	339.1	309.8	287.5	276.9	271.0	265.2	271.0	276.9	287.5
120°	467.0	406.0	363.7	334.4	312.1	300.4	294.5	291.0	294.5	300.4	312.1
122.5°	484.6	429.4	388.4	356.7	335.6	322.7	316.8	313.3	316.8	322.7	335.6
125°	503.3	451.7	410.7	379.0	356.7	343.8	336.7	334.4	336.7	343.8	356.7
127.5°	518.6	471.7	431.8	400.1	375.5	362.6	354.3	350.8	354.3	362.6	375.5
130°	533.9	489.3	450.6	418.9	394.2	380.2	369.6	366.1	369.6	380.2	394.2
132.5°	547.9	504.5	467.0	436.5	411.8	394.2	382.5	377.8	382.5	394.2	411.8
135°	559.7	519.8	483.4	451.7	427.1	409.5	396.6	391.9	396.6	409.5	427.1
137.5°	569.1	530.3	495.1	465.8	441.2	422.4	409.5	404.8	409.5	422.4	441.2
140°	576.1	540.9	506.9	477.5	454.1	435.3	423.6	417.7	423.6	435.3	454.1
142.5°	583.1	549.1	516.3	489.3	465.8	449.4	436.5	431.8	436.5	449.4	465.8
145°	587.8	556.1	525.6	498.7	478.7	461.1	450.6	447.0	450.6	461.1	478.7
147.5°	591.3	562.0	533.9	510.4	490.4	475.2	464.6	462.3	464.6	475.2	490.4
150°	592.5	567.9	540.9	519.8	503.3	488.1	478.7	477.5	478.7	488.1	503.3
152.5°	594.9	571.4	549.1	529.2	515.1	502.2	492.8	492.8	492.8	502.2	515.1
155°	594.9	576.1	556.1	539.7	526.8	515.1	508.0	508.0	508.0	515.1	526.8
157.5°	596.0	578.4	562.0	549.1	537.4	526.8	520.9	519.8	520.9	526.8	537.4
160°	596.0	582.0	567.9	556.1	547.9	538.5	533.9	533.9	533.9	538.5	547.9
162.5°	594.9	583.1	571.4	562.0	555.0	547.9	544.4	544.4	544.4	547.9	555.0
165°	592.5	584.3	574.9	566.7	562.0	556.1	553.8	555.0	553.8	556.1	562.0
167.5°	591.3	584.3	577.3	571.4	567.9	563.2	562.0	563.2	562.0	563.2	567.9
170°	587.8	583.1	577.3	574.9	572.6	569.1	567.9	570.2	567.9	569.1	572.6
172.5°	586.7	583.1	578.4	577.3	576.1	573.7	573.7	574.9	573.7	573.7	576.1
175°	584.3	582.0	579.6	578.4	578.4	576.1	577.3	578.4	577.3	576.1	578.4
177.5°	583.1	580.8	579.6	579.6	579.6	578.4	579.6	580.8	579.6	578.4	579.6
180°	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6



TEST NUMBER: P832205

CATALOG NUMBER: S123RDIP-S560D1195U840-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4	1844.4
2.5°	1785.4	1763.8	1742.3	1726.8	1711.3	1692.0	1672.7	1672.0	1671.2	1656.8	1642.5
5°	1679.5	1642.1	1604.7	1568.0	1531.3	1494.6	1458.0	1449.6	1441.3	1428.8	1416.4
7.5°	1585.8	1526.0	1466.3	1419.4	1372.5	1335.8	1299.2	1274.2	1249.3	1230.0	1210.7
10°	1485.2	1411.1	1337.0	1280.3	1223.5	1183.8	1144.1	1115.4	1086.7	1073.1	1059.4
12.5°	1380.8	1300.3	1219.8	1164.2	1108.6	1061.0	1013.3	987.2	961.1	942.2	923.3
15°	1284.8	1198.2	1111.6	1052.6	993.7	949.0	904.4	878.3	852.2	833.3	814.4
17.5°	1191.8	1104.4	1017.1	957.4	897.6	857.2	816.7	791.4	766.0	754.3	742.6
20°	1107.1	1019.0	930.9	874.6	818.2	778.5	738.8	725.2	711.6	700.6	689.7
22.5°	1023.1	938.5	853.8	799.7	745.6	716.9	688.1	677.2	666.2	657.9	649.6
25°	952.8	868.5	784.2	736.9	689.7	667.4	645.0	637.9	630.7	622.4	614.0
27.5°	881.7	801.6	721.4	683.6	645.8	627.7	609.5	600.4	591.4	584.5	577.7
30°	819.0	744.9	670.8	639.4	608.0	592.1	576.2	566.4	556.6	550.1	543.7
32.5°	758.5	692.7	626.9	600.0	573.2	557.7	542.2	532.7	523.3	515.7	508.2
35°	702.5	645.4	588.3	563.8	539.2	523.7	508.2	498.7	489.3	481.7	474.1
37.5°	653.4	601.6	549.8	526.7	503.6	490.0	476.4	466.6	456.7	448.8	440.9
40°	607.2	561.5	515.7	493.4	471.1	456.4	441.6	432.9	424.2	417.0	409.9
42.5°	566.4	524.4	482.5	460.5	438.6	424.6	410.6	400.4	390.2	386.0	381.9
45°	523.3	486.2	449.2	428.0	406.8	392.1	377.3	368.6	360.0	356.2	352.4
47.5°	485.5	451.1	416.7	395.9	375.1	361.8	348.6	341.8	335.0	329.7	324.4
50°	448.4	415.2	381.9	361.8	341.8	330.5	319.1	310.8	302.5	298.7	294.9
52.5°	412.9	382.6	352.4	332.0	311.6	300.6	289.6	282.4	275.3	267.3	259.4
55°	372.8	346.3	319.9	301.7	283.6	272.2	260.9	252.6	244.3	235.9	227.6
57.5°	339.5	313.4	287.4	271.1	254.8	243.9	232.9	223.8	214.8	208.0	201.2
60°	303.2	280.6	257.9	242.0	226.1	215.5	204.9	196.2	187.5	184.1	180.7
62.5°	269.2	248.0	226.9	212.9	198.9	188.7	178.5	172.8	167.1	164.9	162.6
65°	234.4	216.3	198.1	185.3	172.4	163.7	155.0	152.4	149.7	147.8	145.9
67.5°	201.9	186.4	170.9	159.6	148.2	142.2	136.1	133.1	130.1	127.8	125.5
70°	172.4	158.8	145.2	135.4	125.5	119.9	114.2	111.5	108.9	104.7	100.6
72.5°	140.7	130.1	119.5	111.9	104.4	99.4	94.5	89.2	83.9	80.2	76.4
75°	116.5	105.9	95.3	88.1	80.9	75.2	69.6	67.7	65.8	64.7	63.5
77.5°	89.2	80.2	71.1	65.4	59.7	57.1	54.4	53.3	52.2	51.8	51.4
80°	64.3	56.7	49.2	46.1	43.1	42.3	41.6	40.8	40.1	39.7	39.3
82.5°	40.1	36.3	32.5	31.8	31.0	30.6	30.2	29.9	29.5	29.1	28.7
85°	23.4	21.9	20.4	20.0	19.7	19.3	18.9	18.9	18.9	18.9	18.9
87.5°	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.5	9.1
90°	12.9	15.3	18.8	22.3	25.8	29.3	28.2	29.3	30.5	31.7	34.0
92.5°	59.8	81.0	118.5	180.7	241.7	218.2	163.1	116.2	90.3	78.6	70.4
95°	106.8	152.5	252.3	427.1	619.5	695.8	564.4	422.4	286.3	224.1	181.9
97.5°	123.2	173.6	272.2	475.2	799.0	1070.1	1106.4	970.3	732.1	577.3	443.5
100°	140.8	186.6	268.7	442.3	750.9	1111.1	1342.3	1383.3	1288.3	1151.0	984.4
102.5°	160.7	201.8	273.4	414.2	680.5	1034.9	1354.0	1520.6	1540.6	1474.9	1384.5
105°	183.0	219.4	282.8	403.6	625.4	943.3	1280.1	1525.3	1642.6	1664.9	1634.4
107.5°	207.7	241.7	298.0	401.3	585.5	862.4	1174.5	1454.9	1639.1	1730.6	1762.3
110°	232.3	265.2	318.0	407.1	564.4	795.5	1075.9	1344.6	1560.5	1708.3	1790.5



TEST NUMBER: P832205

CATALOG NUMBER: S123RDIP-S560D1195U840-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	258.1	289.8	337.9	418.9	552.6	750.9	990.3	1235.5	1457.3	1627.4	1738.8
115°	283.9	315.6	360.2	431.8	551.5	721.6	924.6	1141.6	1345.8	1518.3	1646.2
117.5°	309.8	339.1	383.7	448.2	552.6	701.6	881.2	1068.9	1249.6	1408.0	1540.6
120°	334.4	363.7	406.0	467.0	557.3	688.7	848.3	1013.7	1172.1	1312.9	1431.4
122.5°	356.7	388.4	429.4	484.6	565.5	680.5	821.3	970.3	1110.0	1237.8	1345.8
125°	379.0	410.7	451.7	503.3	573.7	673.5	799.0	932.8	1060.7	1173.3	1267.2
127.5°	400.1	431.8	471.7	518.6	583.1	670.0	777.9	898.8	1014.9	1118.2	1205.0
130°	418.9	450.6	489.3	533.9	592.5	666.4	761.5	867.1	972.7	1067.7	1147.5
132.5°	436.5	467.0	504.5	547.9	599.6	665.3	746.2	837.7	932.8	1019.6	1094.7
135°	451.7	483.4	519.8	559.7	606.6	664.1	733.3	811.9	895.2	971.5	1038.4
137.5°	465.8	495.1	530.3	569.1	611.3	661.7	721.6	787.3	857.7	925.7	985.6
140°	477.5	506.9	540.9	576.1	616.0	660.6	711.0	766.2	826.0	882.3	932.8
142.5°	489.3	516.3	549.1	583.1	619.5	658.2	701.6	746.2	795.5	842.4	884.7
145°	498.7	525.6	556.1	587.8	620.7	655.9	693.4	731.0	769.7	807.2	841.3
147.5°	510.4	533.9	562.0	591.3	620.7	652.4	685.2	718.1	749.7	781.4	806.1
150°	519.8	540.9	567.9	592.5	620.7	647.7	677.0	704.0	731.0	755.6	777.9
152.5°	529.2	549.1	571.4	594.9	617.2	641.8	667.6	691.1	713.4	734.5	752.1
155°	539.7	556.1	576.1	594.9	614.8	634.8	658.2	678.2	696.9	714.5	728.6
157.5°	549.1	562.0	578.4	596.0	611.3	628.9	647.7	664.1	680.5	694.6	706.3
160°	556.1	567.9	582.0	596.0	608.9	621.9	637.1	652.4	665.3	677.0	685.2
162.5°	562.0	571.4	583.1	594.9	604.3	614.8	626.5	638.3	648.8	659.4	666.4
165°	566.7	574.9	584.3	592.5	599.6	607.8	617.2	626.5	633.6	641.8	647.7
167.5°	571.4	577.3	584.3	591.3	594.9	600.7	607.8	616.0	621.9	626.5	631.2
170°	574.9	577.3	583.1	587.8	590.2	593.7	599.6	605.4	608.9	613.6	616.0
172.5°	577.3	578.4	583.1	586.7	586.7	587.8	591.3	596.0	598.4	601.9	603.1
175°	578.4	579.6	582.0	584.3	583.1	583.1	585.5	587.8	589.0	591.3	591.3
177.5°	579.6	579.6	580.8	583.1	580.8	579.6	580.8	582.0	583.1	584.3	584.3
180°	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6



TEST NUMBER: P832205

CATALOG NUMBER: S123RDIP-S560D1195U840-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1844.4	1844.4	1844.4	1844.4
2.5°	1638.7	1634.9	1633.4	1631.9
5°	1404.7	1392.9	1390.3	1387.6
7.5°	1205.8	1200.9	1184.6	1168.3
10°	1044.3	1029.2	1022.4	1015.6
12.5°	909.3	895.3	893.1	890.8
15°	804.6	794.8	791.4	788.0
17.5°	735.8	729.0	724.8	720.7
20°	684.7	679.8	676.8	673.8
22.5°	645.8	642.0	639.7	637.5
25°	608.4	602.7	600.8	598.9
27.5°	572.8	567.9	566.0	564.1
30°	539.6	535.4	532.7	530.1
32.5°	503.3	498.3	496.8	495.3
35°	471.1	468.1	466.6	465.1
37.5°	437.1	433.3	431.0	428.8
40°	408.0	406.1	404.9	403.8
42.5°	378.5	375.1	374.7	374.3
45°	349.0	345.6	344.8	344.1
47.5°	321.4	318.4	318.0	317.6
50°	290.8	286.6	283.6	280.6
52.5°	255.6	251.8	249.2	246.5
55°	223.5	219.3	217.0	214.8
57.5°	199.3	197.4	196.2	195.1
60°	179.6	178.5	177.7	177.0
62.5°	161.4	160.3	160.3	160.3
65°	144.8	143.7	142.5	141.4
67.5°	123.3	121.0	120.6	120.2
70°	97.2	93.8	93.4	93.0
72.5°	76.0	75.6	74.9	74.1
75°	62.8	62.0	62.0	62.0
77.5°	50.7	49.9	49.9	49.9
80°	38.9	38.6	38.9	39.3
82.5°	28.7	28.7	28.4	28.0
85°	18.5	18.1	18.1	18.1
87.5°	9.1	9.1	9.1	9.1
90°	32.9	34.0	35.2	34.0
92.5°	68.1	63.4	64.5	62.2
95°	159.6	149.0	140.8	136.1
97.5°	364.9	320.3	292.2	279.2
100°	865.9	780.3	734.5	735.7
102.5°	1298.9	1235.5	1199.1	1165.1
105°	1580.4	1535.9	1498.3	1492.5
107.5°	1755.3	1734.2	1718.9	1706.0
110°	1823.3	1832.7	1830.4	1828.0



TEST NUMBER: P832205

CATALOG NUMBER: S123RDIP-S560D1195U840-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
112.5°	1805.7	1839.7	1851.5	1852.7
115°	1734.2	1785.8	1809.2	1815.1
117.5°	1632.1	1689.6	1724.8	1733.0
120°	1524.1	1589.8	1618.0	1625.0
122.5°	1425.6	1483.1	1514.7	1524.1
125°	1342.3	1393.9	1423.2	1431.4
127.5°	1273.0	1317.6	1344.6	1351.7
130°	1209.7	1251.9	1276.6	1285.9
132.5°	1152.2	1194.4	1215.5	1221.4
135°	1095.9	1131.1	1152.2	1160.4
137.5°	1034.9	1071.2	1088.8	1095.9
140°	977.4	1010.2	1029.0	1027.8
142.5°	921.0	949.2	965.6	964.5
145°	870.6	895.2	904.6	907.0
147.5°	829.5	847.1	856.5	857.7
150°	795.5	808.4	815.5	815.5
152.5°	765.0	776.7	780.3	780.3
155°	739.2	748.6	750.9	752.1
157.5°	715.7	722.8	725.1	725.1
160°	693.4	700.5	700.5	699.3
162.5°	671.1	677.0	677.0	675.8
165°	652.4	657.1	655.9	655.9
167.5°	633.6	637.1	635.9	635.9
170°	617.2	619.5	618.3	618.3
172.5°	603.1	605.4	603.1	601.9
175°	591.3	592.5	591.3	590.2
177.5°	583.1	584.3	582.0	582.0
180°	579.6	579.6	579.6	579.6



TEST NUMBER: P832205

CATALOG NUMBER: S123RDIP-S560D1195U840-4F0-1E-UDD-G4

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	9.65	10.36	10.73	11.43	12.89	14.31	15.02	15.39	16.10	17.56
	3H	10.86	11.50	11.95	12.58	14.06	15.80	16.44	16.89	17.52	19.00
	4H	11.24	11.84	12.33	12.92	14.41	16.29	16.89	17.38	17.97	19.46
	6H	11.51	12.07	12.62	13.15	14.65	16.59	17.15	17.70	18.23	19.73
	8H	11.60	12.12	12.71	13.22	14.72	16.67	17.19	17.78	18.30	19.79
	12H	11.64	12.14	12.76	13.24	14.75	16.70	17.20	17.81	18.29	19.80
4H	2H	10.36	10.96	11.46	12.04	13.53	14.29	14.90	15.40	15.98	17.46
	3H	11.71	12.22	12.83	13.33	14.82	15.94	16.44	17.05	17.55	19.05
	4H	12.17	12.63	13.28	13.73	15.25	16.54	17.00	17.66	18.10	19.62
	6H	12.53	12.92	13.65	14.04	15.56	16.97	17.37	18.10	18.49	20.00
	8H	12.65	13.02	13.77	14.13	15.66	17.10	17.47	18.22	18.58	20.11
	12H	12.72	13.05	13.86	14.18	15.71	17.16	17.49	18.30	18.62	20.15
8H	4H	12.47	12.84	13.59	13.95	15.48	16.50	16.87	17.62	17.98	19.51
	6H	12.93	13.23	14.07	14.39	15.92	16.99	17.30	18.14	18.45	19.98
	8H	13.12	13.39	14.27	14.53	16.07	17.18	17.44	18.33	18.58	20.12
	12H	13.26	13.49	14.41	14.63	16.21	17.29	17.52	18.44	18.66	20.24
12H	4H	12.48	12.81	13.62	13.94	15.47	16.45	16.78	17.58	17.90	19.44
	6H	12.99	13.25	14.14	14.39	15.94	16.97	17.23	18.12	18.37	19.91
	8H	13.20	13.44	14.36	14.57	16.15	17.16	17.39	18.31	18.52	20.10