

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: P831485

Luminaire Tested: S123DIP-S560D1195U840-4F0-1E-UDD-G4

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P831485
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-1, G3-1807-864-17)
Test Lab: INNOVATION CENTER
Issue Date: 05/03/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DIP-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

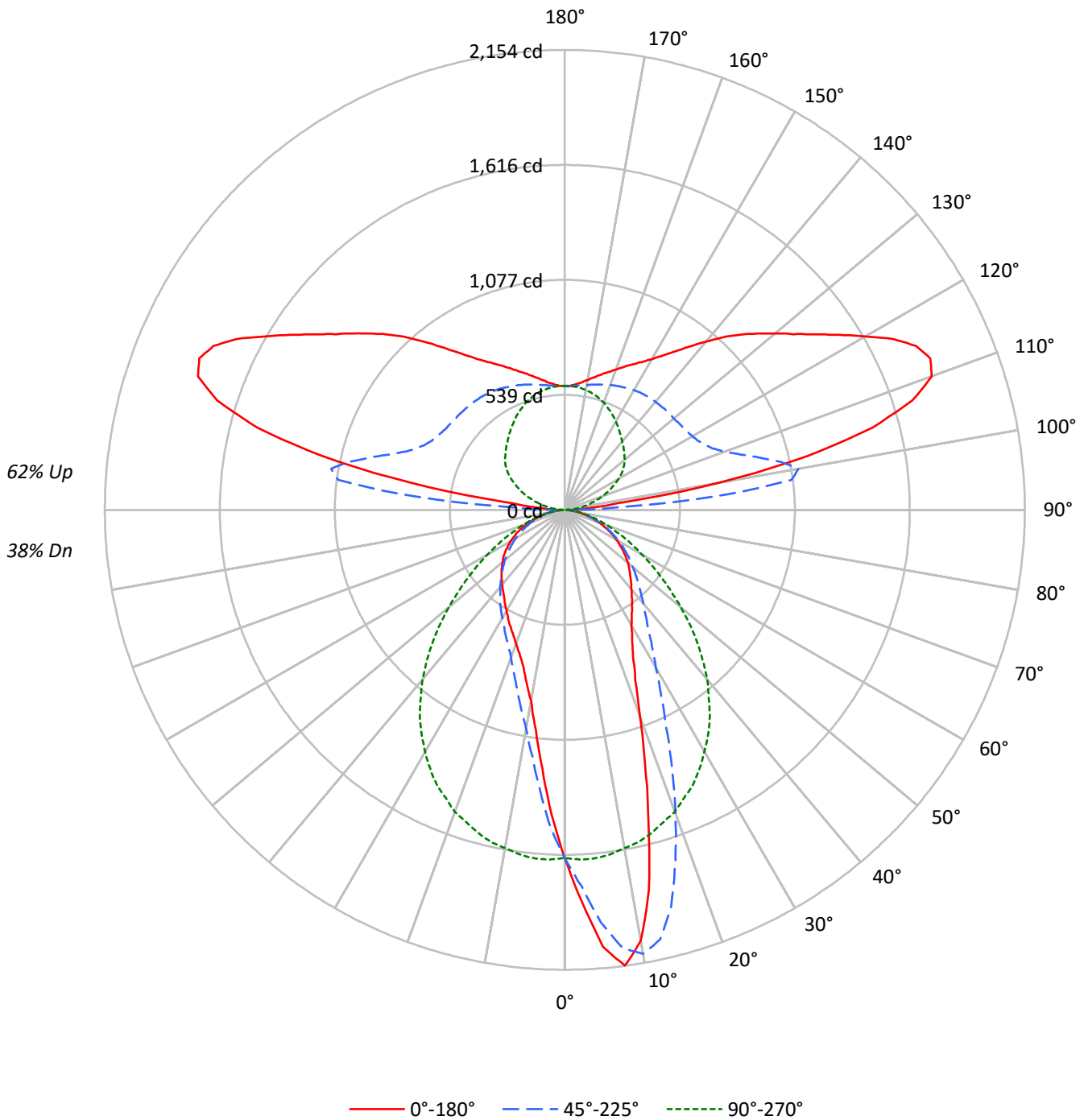
Lumens per Lamp: N/A
Luminaire Lumens: 6983.5 lumens
Efficiency: N/A
Efficacy: 138.0 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: Semi-Indirect

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	95	95	95	95	76	76	76	60	60	60	45	45	45	38				
1	95	91	88	84	86	83	80	77	67	65	63	53	52	51	40	39	38	32				
2	87	80	74	69	79	73	68	64	60	56	53	47	45	43	36	34	33	28				
3	80	71	64	58	72	65	59	54	53	49	45	42	39	37	32	30	29	24				
4	73	63	55	50	66	58	51	46	47	43	39	38	35	32	29	27	25	21				
5	67	56	49	43	61	52	45	40	43	38	34	34	31	28	26	24	22	19				
6	62	51	43	37	56	46	40	35	39	34	30	31	28	25	24	22	20	17				
7	58	46	38	33	52	42	36	31	35	30	26	28	25	22	22	20	18	15				
8	54	42	34	29	49	38	32	27	32	27	24	26	23	20	21	18	16	14				
9	50	38	31	26	45	35	29	25	30	25	21	24	21	18	19	17	15	13				
10	47	35	28	24	43	32	26	22	27	23	19	22	19	16	18	15	14	12				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	17545	17545	17545	17545	17545
5°	22189	20943	17703	14266	13110
10°	22404	23083	17585	11372	9938
15°	16875	21431	17465	9630	8403
20°	11757	17341	17242	8422	7633
25°	8966	13336	16862	7748	7160
30°	7756	10596	16255	7272	6779
35°	7196	8946	15556	6928	6510
40°	6813	8025	14571	6600	6420
45°	6587	7427	13323	6345	6378
50°	6472	6954	11843	6112	6347
55°	6232	6608	10391	5891	6373
60°	6008	6237	8956	5683	6269
65°	5644	5886	7725	5461	6146
70°	5215	5438	6571	5095	5784
75°	4720	4874	5631	4733	5286
80°	3893	4265	4457	4128	4457
85°	3088	3458	3273	3507	3545

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 15210 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.1	2.2
10°-20°	383.4	5.5
20°-30°	453.9	6.5
30°-40°	456.4	6.5
40°-50°	418.8	6.0
50°-60°	345.6	4.9
60°-70°	244.5	3.5
70°-80°	130.5	1.9
80°-90°	36.3	0.5
90°-100°	314.5	4.5
100°-110°	920.8	13.2
110°-120°	899.2	12.9
120°-130°	716.1	10.3
130°-140°	565.0	8.1
140°-150°	421.5	6.0
150°-160°	293.9	4.2
160°-170°	172.6	2.5
170°-180°	56.2	0.8
0°-30°	991.4	14.2
0°-40°	1447.8	20.7
0°-60°	2212.2	31.7
0°-90°	2623.5	37.6
90°-120°	2134.6	30.6
90°-150°	3837.3	54.9
90°-180°	4360.0	62.4
0°-180°	6983.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1630	1630	1630	1630	1630	
5°	2054	1938	1638	1320	1213	196
15°	1514	1923	1567	864	754	418
25°	755	1123	1420	652	603	356
35°	548	681	1184	527	495	344
45°	433	488	875	417	419	335
55°	332	352	554	314	340	297
65°	222	231	303	214	241	220
75°	114	117	135	114	127	119
85°	25	28	26	28	29	28
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°	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0
2.5°	1837.3	1835.4	1833.5	1824.1	1814.6	1810.1	1805.5	1791.9	1778.3	1763.2	1748.0
5°	2053.6	2058.9	2064.2	2058.2	2052.1	2033.6	2015.1	1990.5	1965.9	1938.3	1910.7
7.5°	2153.5	2156.5	2159.5	2155.7	2152.0	2147.0	2142.1	2120.2	2098.3	2069.9	2041.5
10°	2049.8	2056.7	2063.5	2078.2	2093.0	2109.6	2126.2	2123.2	2120.2	2111.9	2103.6
12.5°	1822.2	1830.5	1838.8	1868.3	1897.8	1935.6	1973.5	2006.0	2038.5	2061.2	2083.9
15°	1514.3	1537.4	1560.5	1587.3	1614.2	1669.8	1725.4	1793.8	1862.3	1923.2	1984.0
17.5°	1247.3	1256.0	1264.7	1293.4	1322.2	1392.2	1462.1	1541.2	1620.2	1721.2	1822.2
20°	1026.4	1034.4	1042.3	1080.1	1118.0	1172.8	1227.6	1316.5	1405.4	1513.9	1622.5
22.5°	862.3	874.8	887.3	908.4	929.6	982.2	1034.8	1113.8	1192.8	1312.7	1432.6
25°	754.9	764.0	773.0	785.9	798.8	840.7	882.7	947.8	1012.8	1122.9	1232.9
27.5°	681.5	685.3	689.1	701.9	714.8	742.0	769.3	825.2	881.2	974.6	1068.0
30°	624.0	626.7	629.3	640.7	652.0	670.5	689.1	729.5	770.0	852.5	934.9
32.5°	583.9	585.8	587.7	596.4	605.1	618.4	631.6	661.1	690.6	758.7	826.7
35°	547.6	548.8	549.9	556.3	562.8	572.6	582.4	604.7	627.1	680.8	734.5
37.5°	515.9	517.4	518.9	522.7	526.5	535.2	543.9	561.6	579.4	620.6	661.9
40°	484.9	487.5	490.1	492.8	495.4	502.6	509.8	523.4	537.0	571.1	605.1
42.5°	458.4	461.0	463.7	464.8	465.9	470.1	474.3	486.7	499.2	524.6	549.9
45°	432.7	433.8	434.9	436.1	437.2	440.6	444.0	455.0	465.9	487.9	509.8
47.5°	409.2	409.2	409.2	410.0	410.7	413.8	416.8	424.7	432.7	449.7	466.7
50°	386.5	386.5	386.5	385.4	384.3	386.1	388.0	394.1	400.1	415.3	430.4
52.5°	359.3	359.3	359.3	359.7	360.0	360.0	360.0	365.3	370.6	384.3	397.9
55°	332.1	333.6	335.1	334.0	332.8	333.6	334.3	337.7	341.1	352.1	363.1
57.5°	304.8	305.6	306.3	306.0	305.6	306.0	306.3	309.4	312.4	320.7	329.0
60°	279.1	279.1	279.1	278.4	277.6	278.4	279.1	280.6	282.1	289.7	297.3
62.5°	250.4	250.7	251.1	251.5	251.9	251.1	250.4	252.3	254.2	259.8	265.5
65°	221.6	222.0	222.4	223.5	224.7	223.9	223.1	225.0	226.9	231.1	235.2
67.5°	195.9	195.2	194.4	194.8	195.2	196.3	197.4	197.8	198.2	202.7	207.3
70°	165.7	166.4	167.2	166.8	166.4	166.8	167.2	168.3	169.4	172.8	176.2
72.5°	138.4	138.8	139.2	139.2	139.2	139.9	140.7	141.8	143.0	144.9	146.7
75°	113.5	113.5	113.5	114.2	115.0	115.4	115.7	115.7	115.7	117.2	118.8
77.5°	86.2	88.1	90.0	89.6	89.3	90.0	90.8	91.9	93.0	93.8	94.6
80°	62.8	62.8	62.8	63.2	63.5	64.7	65.8	66.6	67.3	68.8	70.3
82.5°	40.1	40.5	40.8	42.0	43.1	43.9	44.6	45.8	46.9	46.9	46.9
85°	25.0	24.2	23.4	24.2	25.0	25.7	26.5	26.9	27.2	28.0	28.7
87.5°	12.1	12.1	12.1	12.1	12.1	12.5	12.9	12.9	12.9	12.9	12.9
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°	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0
2.5°	1743.5	1739.0	1722.3	1705.7	1686.8	1667.9	1653.9	1639.9	1619.1	1598.3	1581.3
5°	1889.5	1868.3	1833.1	1798.0	1750.3	1702.7	1670.5	1638.4	1595.3	1552.1	1517.7
7.5°	2005.2	1968.9	1919.7	1870.6	1808.2	1745.8	1686.8	1627.8	1562.0	1496.2	1442.5
10°	2079.0	2054.4	1997.7	1940.9	1857.3	1773.8	1691.3	1608.9	1524.1	1439.4	1368.3
12.5°	2086.2	2088.4	2036.2	1984.0	1889.5	1794.9	1694.7	1594.5	1487.8	1381.2	1298.4
15°	2023.0	2061.9	2033.2	2004.5	1909.2	1813.9	1690.6	1567.3	1444.3	1321.4	1225.7
17.5°	1905.8	1989.3	1993.5	1997.7	1902.3	1807.0	1670.5	1534.0	1394.8	1255.6	1155.0
20°	1745.8	1869.1	1911.4	1953.8	1876.3	1798.7	1652.0	1505.2	1349.4	1193.6	1088.1
22.5°	1582.4	1732.2	1809.7	1887.2	1829.7	1772.2	1616.1	1459.9	1295.3	1130.8	1023.8
25°	1396.3	1559.7	1678.8	1798.0	1762.8	1727.6	1573.7	1419.8	1244.7	1069.6	960.3
27.5°	1234.1	1400.1	1543.8	1687.5	1680.0	1672.4	1519.6	1366.8	1187.5	1008.3	902.8
30°	1089.6	1244.3	1405.0	1565.8	1584.3	1602.8	1455.3	1307.8	1128.2	948.5	846.8
32.5°	961.8	1096.8	1269.2	1441.7	1478.0	1514.3	1381.2	1248.1	1070.3	892.6	794.6
35°	857.0	979.5	1152.0	1324.5	1369.8	1415.2	1299.5	1183.8	1010.6	837.3	743.9
37.5°	764.3	866.8	1035.1	1203.4	1259.0	1314.6	1211.0	1107.4	945.1	782.9	697.0
40°	687.6	770.0	924.7	1079.4	1143.7	1208.0	1122.5	1037.0	883.1	729.2	650.1
42.5°	623.3	696.6	837.0	977.3	1038.9	1100.6	1028.3	956.1	819.2	682.3	610.0
45°	568.4	627.1	754.5	882.0	940.6	999.2	937.2	875.2	754.5	633.9	566.5
47.5°	517.0	567.3	676.2	785.1	837.3	889.5	841.1	792.7	690.6	588.5	527.6
50°	470.9	511.3	606.6	701.9	747.3	792.7	750.0	707.2	623.3	539.3	486.4
52.5°	430.8	463.7	543.5	623.3	662.2	701.2	664.5	627.8	561.2	494.7	448.5
55°	391.1	419.0	488.3	557.5	583.9	610.4	582.1	553.7	500.0	446.3	407.3
57.5°	354.0	379.0	435.7	492.4	512.8	533.3	507.5	481.8	441.4	400.9	368.4
60°	317.7	338.1	385.4	432.7	445.1	457.6	436.8	416.0	387.7	359.3	330.2
62.5°	284.0	302.6	337.7	372.9	381.2	389.5	373.7	357.8	336.2	314.7	292.0
65°	249.2	263.2	292.0	320.7	326.0	331.3	317.3	303.3	287.1	270.8	254.2
67.5°	217.1	226.9	250.4	273.8	274.2	274.6	263.2	251.9	242.8	233.7	220.5
70°	185.7	195.2	210.7	226.2	226.5	226.9	217.8	208.8	202.0	195.2	185.3
72.5°	153.5	160.4	172.1	183.8	183.0	182.3	176.6	170.9	165.7	160.4	153.2
75°	124.4	130.1	138.0	146.0	143.7	141.4	138.4	135.4	130.9	126.3	121.8
77.5°	98.0	101.4	105.9	110.4	108.9	107.4	104.8	102.1	98.7	95.3	93.4
80°	71.9	73.4	76.4	79.4	78.7	77.9	74.9	71.9	71.1	70.3	67.7
82.5°	48.8	50.7	51.4	52.2	51.8	51.4	49.2	46.9	46.1	45.4	45.0
85°	29.1	29.5	29.9	30.3	29.1	28.0	27.2	26.5	26.5	26.5	26.1
87.5°	13.2	13.6	13.6	13.6	13.2	12.9	12.1	11.3	11.7	12.1	12.1
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: P831485

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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: P831485

CATALOG NUMBER: S123DIP-S560D1195U840-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0	1630.0
2.5°	1564.2	1549.5	1534.7	1523.4	1512.0	1492.8	1473.5	1468.9	1464.4	1458.0	1451.5
5°	1483.3	1447.0	1410.7	1378.2	1345.6	1320.3	1295.0	1278.3	1261.7	1249.6	1237.5
7.5°	1388.8	1334.3	1279.8	1241.3	1202.7	1166.0	1129.3	1117.6	1105.9	1090.0	1074.1
10°	1297.2	1237.1	1177.0	1126.7	1076.4	1040.4	1004.5	990.1	975.8	955.7	935.7
12.5°	1215.5	1149.7	1083.9	1033.2	982.6	947.8	913.0	892.2	871.4	860.0	848.7
15°	1130.1	1059.7	989.4	942.5	895.6	864.2	832.8	814.6	796.5	785.5	774.6
17.5°	1054.4	984.8	915.2	870.2	825.2	796.5	767.7	751.9	736.0	727.7	719.3
20°	982.6	914.5	846.4	802.5	758.7	735.2	711.8	701.6	691.4	684.5	677.7
22.5°	916.8	849.8	782.9	745.4	708.0	689.1	670.2	663.0	655.8	650.1	644.5
25°	851.0	791.2	731.4	699.7	667.9	652.4	636.9	629.7	622.5	616.8	611.2
27.5°	797.2	740.1	683.0	655.8	628.6	616.5	604.4	598.7	593.0	587.7	582.4
30°	745.1	694.0	642.9	619.5	596.0	585.1	574.1	568.4	562.8	557.8	552.9
32.5°	696.6	652.8	608.9	587.3	565.8	556.7	547.6	540.8	534.0	530.2	526.5
35°	650.5	611.2	571.8	554.1	536.3	527.2	518.1	512.5	506.8	503.8	500.7
37.5°	611.2	576.0	540.8	523.8	506.8	498.1	489.4	484.5	479.6	478.4	477.3
40°	571.1	540.8	510.6	493.9	477.3	469.7	462.2	459.1	456.1	455.4	454.6
42.5°	537.8	508.3	478.8	463.7	448.5	442.1	435.7	434.2	432.7	433.8	434.9
45°	499.2	474.6	450.1	436.1	422.1	416.8	411.5	410.3	409.2	411.5	413.8
47.5°	466.7	444.0	421.3	408.1	394.8	391.1	387.3	386.9	386.5	389.5	392.6
50°	433.4	411.5	389.5	379.0	368.4	365.0	361.6	362.7	363.8	368.7	373.7
52.5°	402.4	382.0	361.6	351.7	341.9	339.6	337.4	340.0	342.6	347.9	353.2
55°	368.4	349.8	331.3	323.7	316.2	313.9	311.6	316.9	322.2	327.1	332.1
57.5°	335.8	319.6	303.3	296.5	289.7	289.3	288.9	293.9	298.8	304.1	309.4
60°	301.0	287.4	273.8	268.5	263.2	264.0	264.7	270.4	276.1	280.2	284.4
62.5°	269.3	257.9	246.6	241.7	236.8	238.6	240.5	246.2	251.9	256.8	261.7
65°	237.5	228.1	218.6	215.2	211.8	214.4	217.1	222.0	226.9	230.3	233.7
67.5°	207.3	199.3	191.4	188.7	186.1	188.7	191.4	196.3	201.2	204.6	208.0
70°	175.5	169.1	162.6	160.7	158.8	161.9	164.9	169.1	173.2	176.6	180.0
72.5°	146.0	141.1	136.2	135.8	135.4	138.0	140.7	144.9	149.0	151.3	153.5
75°	117.2	114.6	111.9	111.6	111.2	113.8	116.5	118.8	121.0	122.9	124.8
77.5°	91.5	89.3	87.0	87.4	87.7	89.6	91.5	93.8	96.1	97.2	98.3
80°	65.1	64.3	63.5	64.3	65.1	66.6	68.1	69.6	71.1	71.9	72.6
82.5°	44.6	43.9	43.1	44.2	45.4	46.5	47.7	48.8	49.9	50.3	50.7
85°	25.7	26.9	28.0	28.0	28.0	28.4	28.7	29.1	29.5	29.1	28.7
87.5°	12.1	12.5	12.9	12.9	12.9	13.2	13.6	13.6	13.6	13.2	12.9
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: P831485

CATALOG NUMBER: S123DIP-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: P831485

CATALOG NUMBER: S123DIP-S560D1195U840-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1630.0	1630.0	1630.0	1630.0
2.5°	1448.9	1446.2	1435.6	1425.1
5°	1228.4	1219.3	1216.3	1213.3
7.5°	1073.3	1072.6	1056.7	1040.8
10°	936.8	937.9	923.6	909.2
12.5°	839.2	829.8	828.6	827.5
15°	765.9	757.2	755.6	754.1
17.5°	714.0	708.7	707.2	705.7
20°	674.7	671.7	669.0	666.4
22.5°	640.7	636.9	634.6	632.4
25°	607.8	604.4	603.6	602.9
27.5°	578.3	574.1	574.1	574.1
30°	550.3	547.6	546.5	545.4
32.5°	524.2	521.9	521.9	521.9
35°	499.6	498.5	497.0	495.4
37.5°	477.3	477.3	476.5	475.8
40°	455.7	456.9	456.9	456.9
42.5°	436.1	437.2	437.2	437.2
45°	415.6	417.5	418.3	419.0
47.5°	395.6	398.6	399.4	400.1
50°	375.9	378.2	378.6	379.0
52.5°	355.9	358.5	360.4	362.3
55°	334.7	337.4	338.5	339.6
57.5°	312.0	314.7	315.0	315.4
60°	287.1	289.7	290.5	291.2
62.5°	263.2	264.7	265.5	266.3
65°	236.0	238.3	239.8	241.3
67.5°	209.9	211.8	211.8	211.8
70°	180.8	181.5	182.7	183.8
72.5°	153.9	154.3	154.3	154.3
75°	125.6	126.3	126.7	127.1
77.5°	98.7	99.1	99.1	99.1
80°	72.2	71.9	71.9	71.9
82.5°	49.5	48.4	48.4	48.4
85°	28.4	28.0	28.4	28.7
87.5°	12.9	12.9	12.9	12.9
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: P831485

CATALOG NUMBER: S123DIP-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: P831485

CATALOG NUMBER: S123DIP-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	12.24	12.97	13.30	14.03	15.47	14.47	15.21	15.53	16.27	17.71
	3H	13.87	14.53	14.95	15.60	17.06	15.89	16.54	16.96	17.61	19.07
	4H	14.44	15.07	15.53	16.14	17.61	16.33	16.95	17.41	18.03	19.49
	6H	14.81	15.38	15.90	16.46	17.94	16.60	17.17	17.69	18.25	19.73
	8H	14.90	15.45	16.00	16.54	18.01	16.66	17.21	17.76	18.30	19.77
	12H	14.94	15.46	16.04	16.55	18.04	16.67	17.19	17.78	18.28	19.77
4H	2H	12.80	13.42	13.89	14.49	15.96	14.62	15.24	15.71	16.32	17.78
	3H	14.61	15.13	15.71	16.23	17.71	16.23	16.75	17.32	17.85	19.32
	4H	15.31	15.78	16.41	16.87	18.37	16.81	17.28	17.91	18.37	19.87
	6H	15.78	16.18	16.88	17.30	18.79	17.20	17.61	18.31	18.73	20.22
	8H	15.91	16.29	17.02	17.39	18.90	17.31	17.69	18.42	18.80	20.31
	12H	15.97	16.32	17.10	17.43	18.95	17.35	17.70	18.48	18.82	20.33
8H	4H	15.56	15.94	16.67	17.05	18.56	16.90	17.28	18.01	18.39	19.90
	6H	16.15	16.46	17.28	17.61	19.11	17.40	17.72	18.53	18.86	20.37
	8H	16.35	16.63	17.49	17.76	19.28	17.58	17.85	18.72	18.98	20.51
	12H	16.47	16.71	17.61	17.84	19.40	17.68	17.92	18.82	19.04	20.60
12H	4H	15.56	15.90	16.68	17.02	18.53	16.87	17.22	18.00	18.33	19.85
	6H	16.20	16.47	17.33	17.60	19.12	17.41	17.69	18.55	18.82	20.34
	8H	16.43	16.67	17.57	17.79	19.35	17.61	17.85	18.75	18.97	20.54