

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: P831538

Luminaire Tested: S123DIP-S560D585U840-4F0-1E-UDD-G1

Issue Date: 05/03/2024

**Test Information**

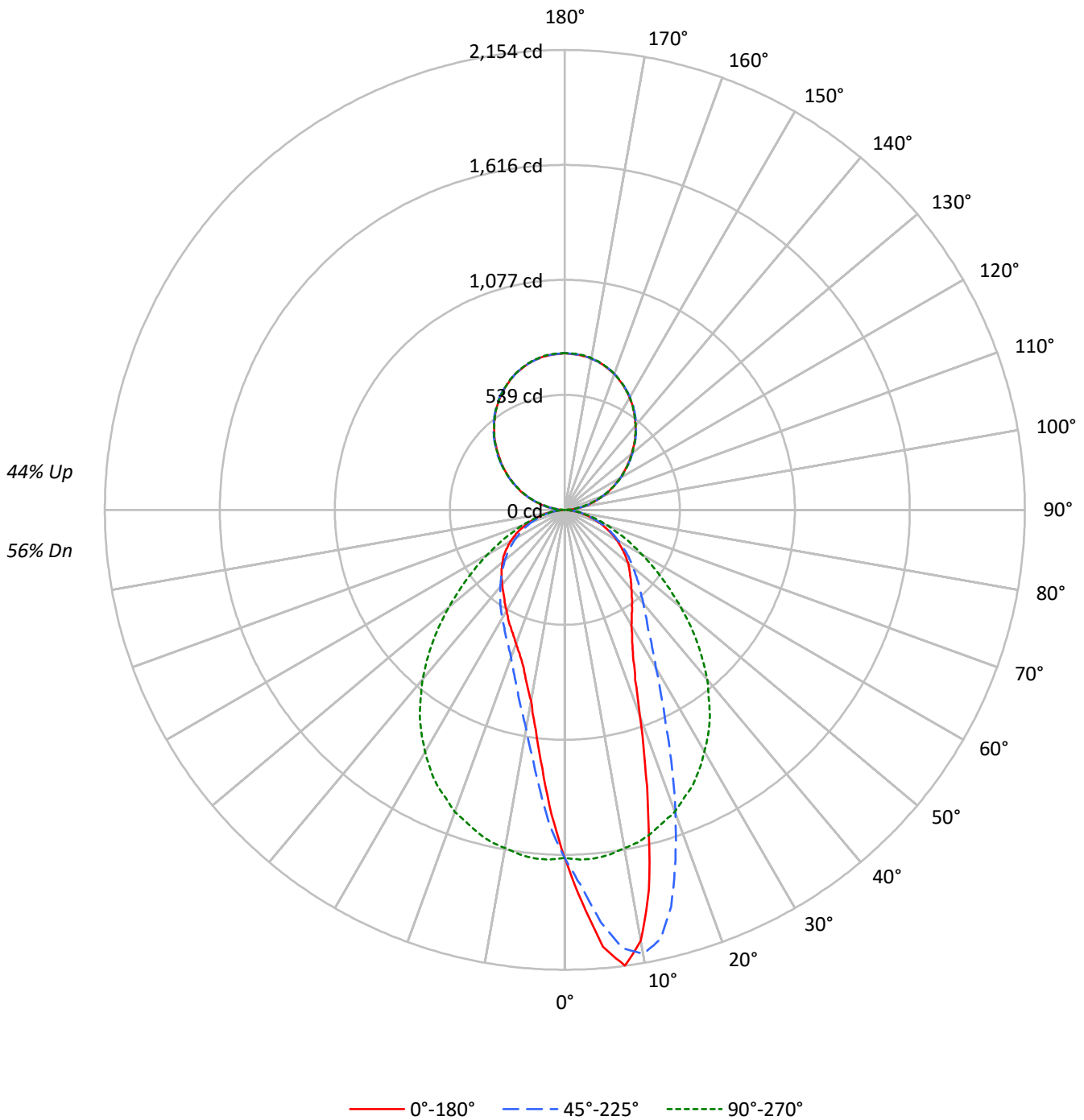
Test Method: LM-79-2019  
Report Number: P831538  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-1, G3-1807-864-9)  
Test Lab: INNOVATION CENTER  
Issue Date: 05/03/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S560D585U840-4F0-1E-UDD-G1  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, GRAZE OPTIC  
UPLIGHT 585 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4653.6 lumens  
Efficiency: N/A  
Efficacy: 133.7 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: General Diffuse  
  
Input Watts (W): 34.8  
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	56				56
1	100	96	92	89	93	89	86	83	77	75	73	66	64	63	56	54	53				49	
2	91	84	78	73	85	79	74	69	68	64	61	59	56	53	50	48	46				42	
3	84	75	68	62	78	70	64	59	61	56	52	52	49	46	45	42	40				36	
4	77	67	59	53	72	62	56	50	55	49	45	47	43	40	41	38	35				32	
5	71	60	52	46	66	56	49	44	49	44	40	43	39	35	37	34	31				28	
6	66	54	46	41	61	51	44	39	45	39	35	39	35	31	34	31	28				25	
7	61	49	42	36	57	46	39	35	41	35	31	36	32	28	31	28	25				23	
8	57	45	38	32	53	43	36	31	38	32	28	33	29	26	29	26	23				21	
9	53	41	34	29	50	39	33	28	35	29	26	31	26	23	27	24	21				19	
10	50	38	31	27	47	36	30	25	32	27	23	29	24	21	25	22	19				17	

**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	3.3
10°-20°	383.4	8.2
20°-30°	453.9	9.8
30°-40°	456.4	9.8
40°-50°	418.8	9.0
50°-60°	345.6	7.4
60°-70°	244.5	5.3
70°-80°	130.5	2.8
80°-90°	34.7	0.7
90°-100°	47.2	1.0
100°-110°	142.9	3.1
110°-120°	243.2	5.2
120°-130°	320.0	6.9
130°-140°	359.7	7.7
140°-150°	353.6	7.6
150°-160°	297.7	6.4
160°-170°	198.2	4.3
170°-180°	69.4	1.5
0°-30°	991.4	21.3
0°-40°	1447.8	31.1
0°-60°	2212.2	47.5
0°-90°	2621.9	56.3
90°-120°	433.3	9.3
90°-150°	1466.5	31.5
90°-180°	2032.0	43.7
0°-180°	4653.6	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°	17	14	1	14	17	10
95°	45	43	34	43	45	45
105°	137	136	130	136	137	145
115°	245	245	245	245	245	243
125°	354	359	358	359	354	317
135°	464	468	465	468	464	357
145°	564	567	564	567	564	352
155°	645	646	646	646	645	297
165°	701	702	703	702	701	198
175°	729	729	732	729	729	69
180°	733	733	733	733	733	



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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°	17.3	17.0	16.8	16.5	16.3	15.9	15.4	14.8	14.3	13.8	12.2
92.5°	24.8	25.0	25.3	25.5	25.8	25.7	25.3	25.0	24.6	24.2	23.4
95°	44.9	44.9	44.9	44.9	44.9	44.7	44.2	43.6	43.1	42.6	41.6
97.5°	64.5	64.6	64.8	64.9	65.0	64.8	64.1	63.5	62.8	62.2	61.4
100°	87.6	87.3	87.0	86.8	86.5	86.2	85.8	85.4	85.1	84.7	84.0
102.5°	111.2	111.3	111.4	111.6	111.7	111.6	111.2	110.8	110.4	110.0	109.1
105°	137.1	136.8	136.6	136.3	136.1	135.9	135.9	135.9	135.9	135.9	134.8
107.5°	163.6	163.7	163.8	164.0	164.1	164.0	163.6	163.2	162.8	162.4	161.9
110°	190.7	190.9	191.2	191.4	191.7	191.6	191.0	190.5	190.0	189.5	189.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	219.5	219.5	219.5	219.5	219.5	219.1	218.5	217.9	217.2	216.6	216.6
115°	245.4	245.5	245.6	245.8	245.9	245.9	245.8	245.6	245.5	245.4	245.6
117.5°	271.9	272.3	272.6	273.0	273.4	273.6	273.6	273.6	273.6	273.6	273.9
120°	300.1	300.4	300.6	300.9	301.1	301.3	301.4	301.6	301.7	301.8	302.5
122.5°	327.2	327.6	327.9	328.3	328.7	329.1	329.5	329.9	330.3	330.6	330.9
125°	354.3	354.8	355.3	355.8	356.3	356.8	357.3	357.8	358.3	358.9	359.1
127.5°	381.3	381.8	382.3	382.9	383.4	384.0	384.8	385.5	386.3	387.1	387.3
130°	407.8	408.7	409.6	410.5	411.4	412.1	412.6	413.1	413.6	414.2	414.5
132.5°	435.5	436.1	436.7	437.4	438.0	438.7	439.3	439.9	440.6	441.2	441.5
135°	464.3	464.5	464.8	465.0	465.3	465.7	466.2	466.7	467.2	467.7	467.9
137.5°	489.6	490.0	490.4	490.8	491.2	491.7	492.3	492.9	493.6	494.2	493.8
140°	514.4	515.3	516.2	517.1	518.0	518.5	518.6	518.7	518.9	519.0	518.9
142.5°	539.7	540.4	541.0	541.6	542.3	542.7	542.8	542.9	543.1	543.2	542.9
145°	563.9	564.4	564.9	565.5	566.0	566.3	566.4	566.5	566.7	566.8	566.4
147.5°	585.8	586.6	587.3	588.1	588.9	589.3	589.3	589.3	589.3	589.3	588.9
150°	606.5	607.3	608.1	608.9	609.6	610.0	610.0	610.0	610.0	610.0	609.7
152.5°	626.7	627.3	628.0	628.6	629.3	629.5	629.2	628.9	628.7	628.4	628.3
155°	644.6	645.5	646.4	647.3	648.1	648.3	647.8	647.3	646.8	646.3	646.2
157.5°	661.3	662.0	662.8	663.6	664.3	664.5	664.0	663.4	662.9	662.4	662.3
160°	677.4	677.9	678.4	678.9	679.4	679.4	678.7	678.1	677.5	676.8	676.8
162.5°	689.5	690.4	691.3	692.2	693.1	693.2	692.6	691.9	691.3	690.6	690.5
165°	701.0	701.9	702.8	703.7	704.6	704.7	703.9	703.1	702.4	701.6	701.6
167.5°	711.4	712.2	712.9	713.7	714.5	714.5	713.7	712.9	712.2	711.4	711.3
170°	718.9	719.8	720.7	721.6	722.5	722.5	721.6	720.7	719.8	718.9	718.9
172.5°	724.6	725.5	726.4	727.3	728.2	728.3	727.5	726.7	726.0	725.2	725.2
175°	728.7	729.6	730.5	731.4	732.2	732.3	731.5	730.8	730.0	729.2	729.2
177.5°	731.0	731.9	732.8	733.7	734.6	734.6	733.8	733.1	732.3	731.5	731.5
180°	733.3	733.3	733.3	733.3	733.3	733.3	733.3	733.3	733.3	733.3	733.3



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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°	10.5	8.8	7.2	5.7	4.4	3.1	1.9	0.6	1.9	3.1	4.4
92.5°	22.7	21.9	21.1	20.4	19.6	18.8	18.0	17.3	18.0	18.8	19.6
95°	40.6	39.6	38.5	37.6	36.7	35.8	34.9	34.0	34.9	35.8	36.7
97.5°	60.7	59.9	59.1	58.4	57.8	57.2	56.5	55.9	56.5	57.2	57.8
100°	83.4	82.8	82.1	81.4	80.6	79.9	79.1	78.3	79.1	79.9	80.6
102.5°	108.2	107.3	106.4	105.8	105.4	105.0	104.6	104.3	104.6	105.0	105.4
105°	133.6	132.5	131.3	130.6	130.4	130.1	129.9	129.6	129.9	130.1	130.4
107.5°	161.4	160.9	160.4	160.1	159.9	159.8	159.7	159.6	159.7	159.8	159.9
110°	189.0	188.7	188.5	188.2	188.0	187.7	187.5	187.2	187.5	187.7	188.0





TEST NUMBER: P831538

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	216.6	216.6	216.6	216.5	216.4	216.3	216.1	216.0	216.1	216.3	216.4
115°	245.9	246.2	246.4	246.3	246.0	245.6	245.2	244.8	245.2	245.6	246.0
117.5°	274.1	274.4	274.6	274.7	274.6	274.4	274.3	274.2	274.3	274.4	274.6
120°	303.1	303.8	304.4	304.3	303.6	302.8	302.0	301.3	302.0	302.8	303.6
122.5°	331.1	331.4	331.7	331.5	331.0	330.5	330.0	329.5	330.0	330.5	331.0
125°	359.4	359.6	359.9	359.8	359.4	359.1	358.7	358.3	358.7	359.1	359.4
127.5°	387.6	387.9	388.1	387.9	387.1	386.3	385.5	384.8	385.5	386.3	387.1
130°	414.9	415.3	415.7	415.4	414.3	413.3	412.3	411.3	412.3	413.3	414.3
132.5°	441.7	442.0	442.3	441.9	440.8	439.8	438.8	437.8	438.8	439.8	440.8
135°	468.0	468.1	468.2	467.9	467.2	466.4	465.6	464.8	465.6	466.4	467.2
137.5°	493.5	493.1	492.7	492.2	491.5	490.9	490.3	489.6	490.3	490.9	491.5
140°	518.7	518.6	518.5	518.1	517.5	516.8	516.2	515.5	516.2	516.8	517.5
142.5°	542.7	542.4	542.2	541.7	541.1	540.4	539.8	539.2	539.8	540.4	541.1
145°	566.0	565.6	565.3	564.9	564.7	564.4	564.2	563.9	564.2	564.4	564.7
147.5°	588.5	588.1	587.7	587.3	586.8	586.3	585.7	585.2	585.7	586.3	586.8
150°	609.5	609.2	609.0	608.7	608.5	608.2	608.0	607.7	608.0	608.2	608.5
152.5°	628.2	628.1	627.9	627.7	627.3	626.9	626.5	626.1	626.5	626.9	627.3
155°	646.0	645.9	645.8	645.7	645.7	645.7	645.7	645.7	645.7	645.7	645.7
157.5°	662.2	662.0	661.9	661.9	662.0	662.2	662.3	662.4	662.3	662.2	662.0
160°	676.8	676.8	676.8	676.9	677.2	677.5	677.7	678.0	677.7	677.5	677.2
162.5°	690.4	690.3	690.1	690.3	690.6	691.0	691.4	691.8	691.4	691.0	690.6
165°	701.6	701.6	701.6	701.8	702.2	702.5	702.9	703.3	702.9	702.5	702.2
167.5°	711.1	711.0	710.9	711.1	711.6	712.1	712.6	713.1	712.6	712.1	711.6
170°	718.9	718.9	718.9	719.1	719.6	720.2	720.7	721.2	720.7	720.2	719.6
172.5°	725.2	725.2	725.2	725.5	726.0	726.5	727.0	727.5	727.0	726.5	726.0
175°	729.2	729.2	729.2	729.5	730.0	730.5	731.0	731.5	731.0	730.5	730.0
177.5°	731.5	731.5	731.5	731.8	732.3	732.8	733.3	733.8	733.3	732.8	732.3
180°	733.3	733.3	733.3	733.3	733.3	733.3	733.3	733.3	733.3	733.3	733.3



TEST NUMBER: P831538

CATALOG NUMBER: S123DIP-S560D585U840-4F0-1E-UDD-G1

**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°	5.7	7.2	8.8	10.5	12.2	13.8	14.3	14.8	15.4	15.9	16.3
92.5°	20.4	21.1	21.9	22.7	23.4	24.2	24.6	25.0	25.3	25.7	25.8
95°	37.6	38.5	39.6	40.6	41.6	42.6	43.1	43.6	44.2	44.7	44.9
97.5°	58.4	59.1	59.9	60.7	61.4	62.2	62.8	63.5	64.1	64.8	65.0
100°	81.4	82.1	82.8	83.4	84.0	84.7	85.1	85.4	85.8	86.2	86.5
102.5°	105.8	106.4	107.3	108.2	109.1	110.0	110.4	110.8	111.2	111.6	111.7
105°	130.6	131.3	132.5	133.6	134.8	135.9	135.9	135.9	135.9	135.9	136.1
107.5°	160.1	160.4	160.9	161.4	161.9	162.4	162.8	163.2	163.6	164.0	164.1
110°	188.2	188.5	188.7	189.0	189.3	189.5	190.0	190.5	191.0	191.6	191.7



TEST NUMBER: P831538

CATALOG NUMBER: S123DIP-S560D585U840-4F0-1E-UDD-G1

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	216.5	216.6	216.6	216.6	216.6	216.6	217.2	217.9	218.5	219.1	219.5
115°	246.3	246.4	246.2	245.9	245.6	245.4	245.5	245.6	245.8	245.9	245.9
117.5°	274.7	274.6	274.4	274.1	273.9	273.6	273.6	273.6	273.6	273.6	273.4
120°	304.3	304.4	303.8	303.1	302.5	301.8	301.7	301.6	301.4	301.3	301.1
122.5°	331.5	331.7	331.4	331.1	330.9	330.6	330.3	329.9	329.5	329.1	328.7
125°	359.8	359.9	359.6	359.4	359.1	358.9	358.3	357.8	357.3	356.8	356.3
127.5°	387.9	388.1	387.9	387.6	387.3	387.1	386.3	385.5	384.8	384.0	383.4
130°	415.4	415.7	415.3	414.9	414.5	414.2	413.6	413.1	412.6	412.1	411.4
132.5°	441.9	442.3	442.0	441.7	441.5	441.2	440.6	439.9	439.3	438.7	438.0
135°	467.9	468.2	468.1	468.0	467.9	467.7	467.2	466.7	466.2	465.7	465.3
137.5°	492.2	492.7	493.1	493.5	493.8	494.2	493.6	492.9	492.3	491.7	491.2
140°	518.1	518.5	518.6	518.7	518.9	519.0	518.9	518.7	518.6	518.5	518.0
142.5°	541.7	542.2	542.4	542.7	542.9	543.2	543.1	542.9	542.8	542.7	542.3
145°	564.9	565.3	565.6	566.0	566.4	566.8	566.7	566.5	566.4	566.3	566.0
147.5°	587.3	587.7	588.1	588.5	588.9	589.3	589.3	589.3	589.3	589.3	588.9
150°	608.7	609.0	609.2	609.5	609.7	610.0	610.0	610.0	610.0	610.0	609.6
152.5°	627.7	627.9	628.1	628.2	628.3	628.4	628.7	628.9	629.2	629.5	629.3
155°	645.7	645.8	645.9	646.0	646.2	646.3	646.8	647.3	647.8	648.3	648.1
157.5°	661.9	661.9	662.0	662.2	662.3	662.4	662.9	663.4	664.0	664.5	664.3
160°	676.9	676.8	676.8	676.8	676.8	676.8	677.5	678.1	678.7	679.4	679.4
162.5°	690.3	690.1	690.3	690.4	690.5	690.6	691.3	691.9	692.6	693.2	693.1
165°	701.8	701.6	701.6	701.6	701.6	701.6	702.4	703.1	703.9	704.7	704.6
167.5°	711.1	710.9	711.0	711.1	711.3	711.4	712.2	712.9	713.7	714.5	714.5
170°	719.1	718.9	718.9	718.9	718.9	718.9	719.8	720.7	721.6	722.5	722.5
172.5°	725.5	725.2	725.2	725.2	725.2	725.2	726.0	726.7	727.5	728.3	728.2
175°	729.5	729.2	729.2	729.2	729.2	729.2	730.0	730.8	731.5	732.3	732.2
177.5°	731.8	731.5	731.5	731.5	731.5	731.5	732.3	733.1	733.8	734.6	734.6
180°	733.3	733.3	733.3	733.3	733.3	733.3	733.3	733.3	733.3	733.3	733.3



TEST NUMBER: P831538

CATALOG NUMBER: S123DIP-S560D585U840-4F0-1E-UDD-G1

**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°	16.5	16.8	17.0	17.3
92.5°	25.5	25.3	25.0	24.8
95°	44.9	44.9	44.9	44.9
97.5°	64.9	64.8	64.6	64.5
100°	86.8	87.0	87.3	87.6
102.5°	111.6	111.4	111.3	111.2
105°	136.3	136.6	136.8	137.1
107.5°	164.0	163.8	163.7	163.6
110°	191.4	191.2	190.9	190.7



TEST NUMBER: P831538

CATALOG NUMBER: S123DIP-S560D585U840-4F0-1E-UDD-G1

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
112.5°	219.5	219.5	219.5	219.5
115°	245.8	245.6	245.5	245.4
117.5°	273.0	272.6	272.3	271.9
120°	300.9	300.6	300.4	300.1
122.5°	328.3	327.9	327.6	327.2
125°	355.8	355.3	354.8	354.3
127.5°	382.9	382.3	381.8	381.3
130°	410.5	409.6	408.7	407.8
132.5°	437.4	436.7	436.1	435.5
135°	465.0	464.8	464.5	464.3
137.5°	490.8	490.4	490.0	489.6
140°	517.1	516.2	515.3	514.4
142.5°	541.6	541.0	540.4	539.7
145°	565.5	564.9	564.4	563.9
147.5°	588.1	587.3	586.6	585.8
150°	608.9	608.1	607.3	606.5
152.5°	628.6	628.0	627.3	626.7
155°	647.3	646.4	645.5	644.6
157.5°	663.6	662.8	662.0	661.3
160°	678.9	678.4	677.9	677.4
162.5°	692.2	691.3	690.4	689.5
165°	703.7	702.8	701.9	701.0
167.5°	713.7	712.9	712.2	711.4
170°	721.6	720.7	719.8	718.9
172.5°	727.3	726.4	725.5	724.6
175°	731.4	730.5	729.6	728.7
177.5°	733.7	732.8	731.9	731.0
180°	733.3	733.3	733.3	733.3



TEST NUMBER: P831538

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**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	14.09	14.97	15.00	15.90	17.08	16.33	17.21	17.24	18.13	19.31
	3H	15.74	16.53	16.66	17.46	18.67	17.76	18.54	18.68	19.48	20.68
	4H	16.32	17.07	17.26	18.00	19.22	18.21	18.95	19.14	19.89	21.10
	6H	16.69	17.38	17.64	18.32	19.55	18.48	19.17	19.43	20.11	21.34
	8H	16.79	17.44	17.74	18.40	19.63	18.55	19.20	19.50	20.16	21.38
	12H	16.84	17.46	17.80	18.41	19.66	18.57	19.19	19.53	20.14	21.39
4H	2H	14.67	15.42	15.61	16.35	17.57	16.50	17.24	17.44	18.18	19.39
	3H	16.50	17.12	17.45	18.09	19.32	18.12	18.74	19.07	19.70	20.93
	4H	17.20	17.77	18.16	18.73	19.98	18.70	19.27	19.66	20.23	21.48
	6H	17.68	18.16	18.65	19.15	20.40	19.11	19.59	20.08	20.58	21.83
	8H	17.81	18.27	18.79	19.25	20.51	19.22	19.67	20.19	20.65	21.92
	12H	17.88	18.29	18.88	19.29	20.56	19.27	19.67	20.26	20.67	21.94
8H	4H	17.47	17.92	18.44	18.90	20.17	18.81	19.26	19.78	20.24	21.51
	6H	18.06	18.43	19.06	19.45	20.72	19.31	19.69	20.31	20.71	21.97
	8H	18.27	18.60	19.27	19.60	20.89	19.49	19.82	20.50	20.83	22.11
	12H	18.39	18.68	19.40	19.68	21.01	19.59	19.88	20.61	20.89	22.22
12H	4H	17.47	17.88	18.46	18.87	20.15	18.78	19.19	19.78	20.19	21.46
	6H	18.11	18.44	19.12	19.45	20.73	19.33	19.66	20.33	20.66	21.95
	8H	18.34	18.63	19.36	19.64	20.97	19.53	19.82	20.54	20.82	22.15