

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: P243509

Luminaire Tested: S124DRP-H575D930-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243509  
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-H575D930-X4F0-XX-UDD-A-W  
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

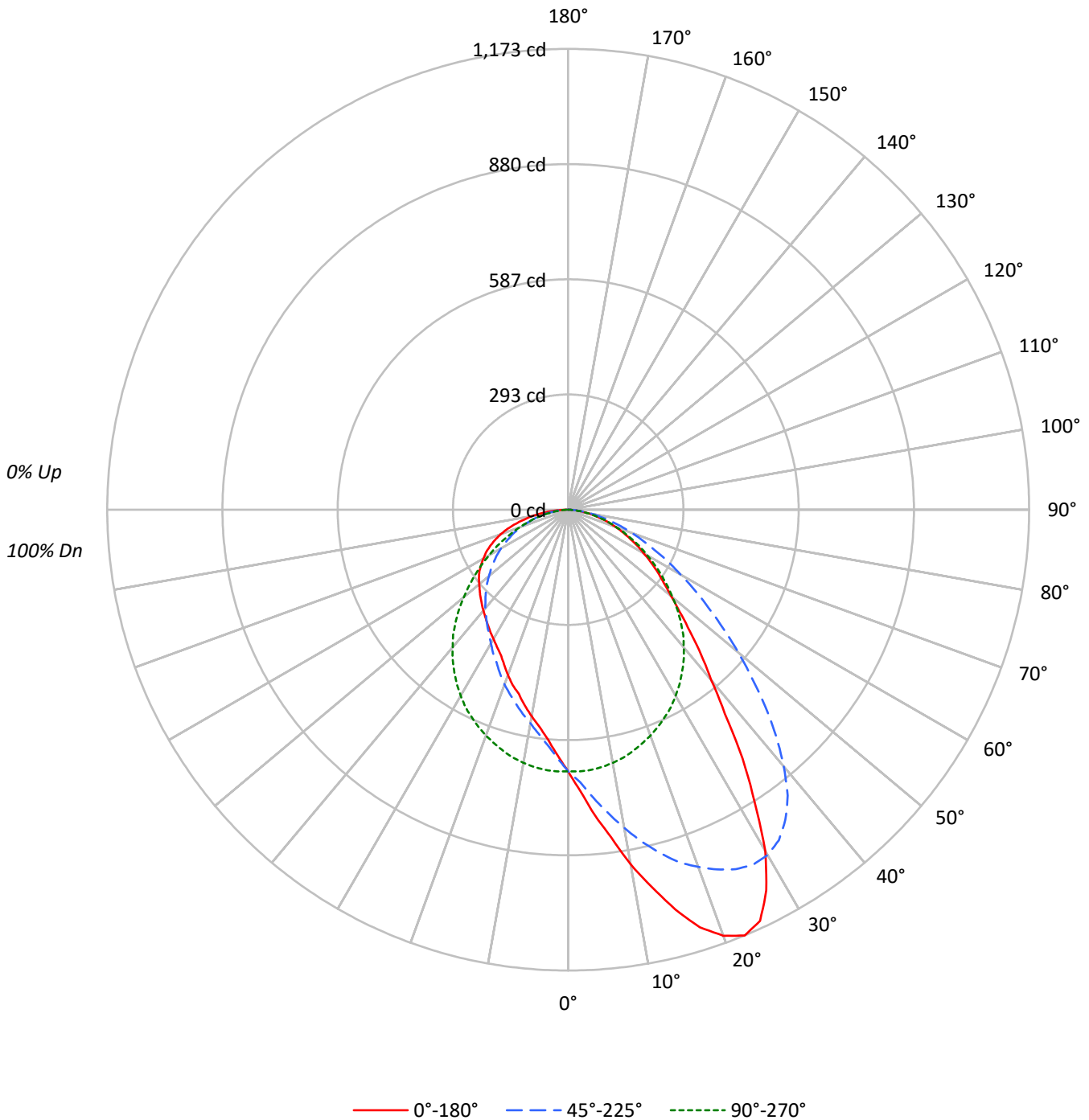
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1909.2 lumens  
Efficiency: N/A  
Efficacy: 111.0 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): 17.2  
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

TEST NUMBER: P243509

CATALOG NUMBER: S124DRP-H575D930-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	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°	5918	5918	5918	5918	5918
5°	6964	6567	5934	5364	5238
10°	8277	7426	5907	4984	4823
15°	9694	8328	5855	4712	4467
20°	10915	9152	5787	4476	4237
25°	11328	9902	5709	4222	3988
30°	10288	10416	5612	4034	3899
35°	8394	10457	5480	3899	3875
40°	6572	9899	5308	3806	3892
45°	5501	8927	5094	3721	3964
50°	4720	7806	4796	3638	4081
55°	4313	6765	4473	3575	4279
60°	3952	5870	4140	3518	4436
65°	3624	5088	3790	3401	4606
70°	3334	4457	3418	3290	4746
75°	2967	3836	3005	3070	4743
80°	2478	3117	2462	2836	4730
85°	1887	2325	1856	2550	4437

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 50°  
 Vertical Angle: 45°  
 Luminance: 9330 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	64.8	3.4
10°-20°	200.7	10.5
20°-30°	322.5	16.9
30°-40°	368.6	19.3
40°-50°	339.3	17.8
50°-60°	277.6	14.5
60°-70°	197.8	10.4
70°-80°	108.7	5.7
80°-90°	29.2	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°	588.0	30.8
0°-40°	956.6	50.1
0°-60°	1573.5	82.4
0°-90°	1909.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1909.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	666	666	666	666	666	
5°	780	736	665	601	587	78
15°	1053	905	636	512	485	300
25°	1155	1010	582	430	407	518
35°	774	964	505	359	357	481
45°	438	710	405	296	315	342
55°	278	436	289	231	276	250
65°	172	242	180	162	219	172
75°	86	112	88	89	138	92
85°	18	23	18	25	44	22
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°	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8
2.5°	716.9	714.8	713.7	712.3	712.0	710.7	708.0	704.2	699.3	694.1	694.1
5°	780.5	780.0	775.9	776.2	771.0	765.3	761.0	755.5	744.9	736.0	729.7
7.5°	841.4	847.1	845.8	841.4	833.8	825.6	816.9	809.3	789.8	778.9	769.9
10°	917.0	919.1	915.3	909.1	902.3	886.5	875.1	862.3	841.1	822.7	806.3
12.5°	983.3	988.4	981.6	975.7	959.6	947.9	936.5	911.0	888.7	865.3	841.7
15°	1053.4	1048.0	1051.5	1036.8	1025.4	1014.3	985.2	959.1	933.8	905.0	880.3
17.5°	1114.3	1114.3	1107.7	1098.2	1086.3	1065.3	1036.3	1007.5	979.5	941.7	906.6
20°	1153.9	1156.9	1149.3	1139.3	1124.9	1103.1	1080.0	1048.8	1011.5	967.5	927.8
22.5°	1173.0	1173.5	1170.8	1162.4	1150.7	1132.2	1108.6	1078.1	1038.7	991.4	949.8
25°	1155.0	1158.0	1157.2	1156.7	1150.7	1140.1	1121.1	1092.8	1056.9	1009.6	964.8
27.5°	1092.0	1099.3	1105.6	1108.3	1114.8	1115.4	1109.6	1092.5	1063.2	1018.6	968.6
30°	1002.3	998.5	1015.3	1023.8	1046.1	1059.4	1068.9	1067.8	1050.9	1014.8	967.2
32.5°	882.7	893.0	905.0	924.8	951.2	982.2	1005.6	1023.0	1021.3	997.7	958.0
35°	773.5	773.5	788.7	813.1	841.1	878.4	917.5	949.8	969.7	963.7	935.7
37.5°	655.0	662.3	679.7	698.7	733.0	768.8	820.5	863.4	905.0	917.5	903.1
40°	566.4	569.6	588.1	604.2	639.2	676.4	719.7	774.6	822.4	853.1	855.0
42.5°	500.6	500.3	507.9	522.3	550.6	583.8	630.5	684.3	740.3	783.8	804.2
45°	437.6	437.0	444.9	459.6	479.7	509.0	549.5	603.3	660.7	710.1	742.2
47.5°	384.3	389.2	392.7	404.1	420.7	445.7	480.5	523.4	578.6	634.0	677.3
50°	341.3	343.5	351.1	356.6	375.0	392.4	420.4	459.0	506.3	564.5	611.2
52.5°	307.1	308.5	313.1	320.1	330.7	346.0	368.3	403.9	446.5	497.1	545.4
55°	278.3	277.5	280.5	285.1	294.3	307.1	323.4	350.6	387.8	436.5	481.0
57.5°	250.0	250.0	252.7	256.0	261.2	271.8	287.8	309.3	339.2	382.4	421.8
60°	222.3	224.2	225.3	228.6	232.9	240.8	252.7	269.6	294.9	330.2	369.3
62.5°	197.9	197.9	199.8	200.8	206.5	212.3	221.0	235.4	255.2	286.7	317.2
65°	172.3	173.9	173.9	176.1	181.0	185.3	192.1	203.0	219.3	241.9	270.4
67.5°	150.6	150.6	151.9	153.0	155.7	158.7	164.7	173.1	187.0	204.9	230.7
70°	128.3	129.1	128.5	129.9	131.5	134.5	138.9	145.9	156.0	171.5	190.5
72.5°	108.2	107.1	107.6	109.0	109.8	111.7	114.4	119.9	128.0	140.5	154.4
75°	86.4	85.9	87.8	87.2	88.6	90.2	92.7	96.8	103.0	111.7	122.3
77.5°	67.4	66.6	67.4	67.9	68.5	69.8	71.7	74.2	78.5	84.2	93.8
80°	48.4	48.1	48.6	49.2	49.5	51.6	52.2	54.6	56.5	60.9	65.5
82.5°	32.1	32.6	32.9	33.4	33.2	34.2	34.8	36.4	38.0	40.2	43.8
85°	18.5	17.7	18.5	18.5	18.5	19.8	19.6	20.7	21.7	22.8	25.3
87.5°	6.5	6.5	6.8	7.1	7.1	7.9	7.6	8.2	9.2	9.2	10.1
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°	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8
2.5°	692.5	689.5	687.3	681.1	677.3	673.7	670.5	666.9	663.1	658.2	655.2
5°	723.2	716.7	707.2	698.5	688.7	680.0	672.9	665.0	656.3	647.4	639.5
7.5°	757.2	744.9	730.3	714.2	699.0	686.2	672.9	660.4	648.2	636.2	625.1
10°	791.1	769.9	750.6	728.6	708.5	689.2	671.8	654.4	639.2	623.4	609.3
12.5°	822.7	797.1	768.8	741.4	714.5	689.5	668.0	646.8	627.3	608.5	591.9
15°	846.8	814.8	781.3	748.7	717.8	691.7	663.7	636.2	615.8	593.0	574.8
17.5°	874.6	836.5	803.4	764.2	725.6	683.5	653.9	624.0	599.5	577.5	559.3
20°	893.0	851.2	803.4	759.1	719.4	681.6	646.0	611.8	585.9	560.4	538.4
22.5°	907.7	864.5	811.8	765.6	715.8	670.2	631.6	597.9	567.5	543.3	522.3
25°	915.3	862.6	812.3	756.3	706.6	662.9	619.4	582.1	551.4	524.5	506.6
27.5°	915.6	861.5	802.0	746.6	693.3	646.0	603.1	566.4	531.9	506.0	484.6
30°	914.2	854.5	791.7	731.1	678.1	629.7	584.9	546.8	515.3	487.8	467.4
32.5°	905.5	844.7	776.2	712.6	655.0	606.3	565.0	527.2	493.5	468.5	447.1
35°	886.0	823.2	754.4	688.9	634.3	583.8	543.0	505.0	474.8	447.6	425.6
37.5°	861.0	802.3	732.4	663.9	605.0	557.1	518.8	482.9	451.4	426.4	404.4
40°	829.5	774.3	705.5	634.3	575.3	527.0	490.8	457.4	430.5	404.9	383.5
42.5°	786.2	743.8	673.2	603.9	542.2	496.5	461.5	433.7	406.0	382.9	361.5
45°	740.0	701.4	638.7	569.9	510.7	463.6	430.8	405.2	381.6	358.2	340.8
47.5°	688.9	657.4	599.3	532.1	473.7	432.1	399.8	376.9	355.2	337.3	319.9
50°	628.1	611.5	557.1	496.3	439.5	396.8	370.2	346.8	330.7	313.4	297.0
52.5°	571.5	558.2	513.9	454.1	402.5	365.0	336.5	318.0	302.2	289.4	276.4
55°	510.1	503.3	465.8	414.2	367.4	329.9	305.5	288.6	276.1	264.2	254.7
57.5°	453.6	453.0	419.9	375.6	329.9	298.1	274.8	260.9	250.0	241.6	233.5
60°	395.7	400.3	373.1	332.6	296.5	266.6	245.4	232.9	225.6	217.7	210.9
62.5°	343.2	350.3	325.6	293.8	258.2	233.7	217.4	207.9	199.8	194.0	188.9
65°	293.0	301.9	281.8	253.3	226.1	203.0	189.2	180.2	173.9	170.7	167.1
67.5°	248.7	253.6	240.0	217.7	195.1	175.0	163.6	155.7	150.3	148.9	144.9
70°	204.4	210.1	200.6	180.2	162.8	148.1	137.8	131.5	128.3	126.4	123.7
72.5°	168.8	171.2	161.7	147.6	133.7	121.5	113.9	109.3	105.4	104.6	103.3
75°	132.1	135.6	128.0	117.1	105.7	97.0	91.3	87.5	85.6	84.2	84.2
77.5°	99.7	102.7	98.4	88.9	82.1	74.5	70.7	67.1	66.3	65.0	65.5
80°	70.9	72.3	69.8	63.3	57.3	53.3	50.0	48.1	47.8	46.7	47.8
82.5°	47.0	47.3	44.6	41.6	37.0	34.8	32.6	31.8	31.5	31.5	31.0
85°	26.1	26.6	24.7	22.8	21.2	19.3	18.8	18.2	17.7	18.5	19.0
87.5°	10.1	10.3	10.1	9.2	8.7	8.2	7.9	8.4	7.6	8.2	8.4
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°	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8
2.5°	650.6	648.4	645.2	639.8	635.9	631.9	630.2	630.8	629.2	627.0	627.5
5°	633.5	627.3	621.8	614.2	607.1	601.2	599.3	596.8	594.6	593.3	591.9
7.5°	615.3	606.6	598.4	590.8	582.7	575.1	572.1	569.9	568.8	565.0	563.4
10°	597.9	587.8	578.1	569.1	560.7	552.2	549.3	546.5	542.7	541.1	539.2
12.5°	579.4	569.4	558.8	547.9	539.5	532.7	527.5	525.6	521.8	520.2	519.1
15°	561.5	549.3	540.8	532.4	519.6	512.0	509.8	503.1	500.9	497.6	495.4
17.5°	543.5	532.1	519.6	509.8	502.0	492.5	487.3	484.3	480.2	477.2	473.2
20°	525.9	512.6	502.8	490.5	481.9	473.2	466.6	463.9	460.4	456.3	450.6
22.5°	508.8	494.1	484.6	473.2	462.3	452.2	446.8	443.0	435.9	435.1	429.9
25°	488.6	475.6	463.1	451.1	440.5	430.5	427.0	421.0	418.5	413.6	412.8
27.5°	469.6	455.8	442.2	429.1	419.9	412.8	406.6	402.8	400.3	396.5	396.8
30°	449.8	434.6	421.8	409.8	399.8	393.0	388.9	387.0	383.5	382.9	381.0
32.5°	428.6	414.7	401.4	390.8	380.5	374.5	372.6	370.7	368.5	368.8	368.3
35°	407.4	395.2	381.0	371.2	362.8	359.3	356.3	355.8	354.9	355.5	355.5
37.5°	386.7	373.4	361.7	352.8	347.9	343.0	341.6	341.3	341.6	342.2	343.5
40°	366.6	354.4	343.0	335.6	330.2	328.0	326.1	326.9	328.0	329.9	331.6
42.5°	346.5	334.8	325.3	318.0	312.8	311.7	312.0	313.6	313.9	316.6	319.6
45°	325.3	315.3	306.3	300.6	297.3	296.0	296.5	298.1	300.0	303.8	307.6
47.5°	305.7	296.8	288.9	283.2	280.7	280.2	281.3	283.5	287.8	291.6	296.0
50°	285.9	277.8	270.4	265.3	265.0	263.1	265.5	268.2	273.4	278.6	285.1
52.5°	266.3	258.5	252.2	248.1	247.0	247.0	250.0	254.9	259.5	266.3	272.3
55°	246.0	238.9	232.9	231.6	229.9	230.7	234.0	238.9	245.4	253.0	259.5
57.5°	225.0	219.0	214.7	212.8	212.0	214.7	218.5	223.7	232.1	239.7	246.8
60°	205.2	200.0	195.4	194.9	194.3	197.9	202.5	207.9	216.3	223.9	232.6
62.5°	184.0	179.9	176.9	176.1	176.1	179.6	184.8	191.9	199.8	207.9	217.1
65°	162.5	159.0	158.2	157.1	159.5	161.7	166.9	173.7	182.1	191.1	200.8
67.5°	142.7	140.5	138.9	138.9	140.8	144.9	149.5	156.3	165.0	174.5	183.2
70°	122.8	120.7	119.3	120.7	121.8	126.6	131.5	138.1	146.2	155.5	164.7
72.5°	102.2	102.5	102.7	102.5	103.5	108.2	113.1	119.3	127.2	136.2	144.6
75°	84.0	82.6	82.9	83.4	87.0	89.4	94.3	100.3	108.7	116.9	123.9
77.5°	65.2	64.7	66.0	66.0	69.3	72.3	76.4	82.3	89.7	97.0	102.7
80°	47.8	48.1	49.2	49.5	52.2	55.4	59.8	63.9	70.4	75.6	81.0
82.5°	32.3	32.9	34.2	36.1	37.2	39.1	42.9	47.3	51.9	57.3	60.6
85°	18.8	19.6	20.7	22.0	23.1	25.0	27.7	31.3	34.5	37.5	40.2
87.5°	9.2	9.2	10.1	10.6	11.4	12.5	14.4	15.8	17.9	20.1	21.2
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: P243509

CATALOG NUMBER: S124DRP-H575D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	665.8	665.8	665.8	665.8
2.5°	626.4	626.2	625.1	625.6
5°	591.1	588.4	588.1	587.0
7.5°	560.7	559.9	559.9	557.7
10°	537.3	534.8	535.4	534.3
12.5°	515.0	513.7	512.0	510.4
15°	490.0	490.0	490.0	485.4
17.5°	470.4	470.2	468.8	468.5
20°	450.1	449.0	445.4	447.9
22.5°	429.4	428.6	425.6	426.1
25°	410.1	409.3	408.7	406.6
27.5°	393.5	393.8	394.3	393.0
30°	381.0	380.2	381.3	379.9
32.5°	369.3	369.3	368.3	368.5
35°	356.0	357.1	357.4	357.1
37.5°	344.3	345.7	346.8	345.7
40°	333.5	334.6	335.6	335.4
42.5°	322.1	324.0	324.8	325.6
45°	311.2	313.6	315.0	315.3
47.5°	300.0	303.0	305.7	305.5
50°	289.2	293.0	295.4	295.1
52.5°	278.3	282.1	285.1	286.4
55°	266.1	271.0	273.7	276.1
57.5°	253.8	259.3	262.0	263.1
60°	240.2	245.1	248.7	249.5
62.5°	225.0	230.2	234.8	235.9
65°	209.3	215.0	218.5	219.0
67.5°	191.1	196.5	200.0	201.7
70°	172.3	176.4	180.2	182.6
72.5°	151.4	156.3	159.8	161.4
75°	129.6	135.1	137.0	138.1
77.5°	107.1	110.3	113.3	113.6
80°	84.5	88.6	89.7	92.4
82.5°	62.2	66.0	65.2	66.3
85°	41.0	42.4	43.2	43.5
87.5°	21.7	22.6	23.1	23.4
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243509  
 CATALOG NUMBER: S124DRP-H575D930-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	16.75	18.32	17.11	18.63	18.95	17.03	18.60	17.40	18.92	19.23
	3H	18.19	19.60	18.56	19.93	20.29	18.42	19.83	18.80	20.16	20.52
	4H	18.71	20.04	19.11	20.39	20.76	18.90	20.23	19.30	20.58	20.96
	6H	19.05	20.28	19.46	20.65	21.04	19.22	20.45	19.63	20.82	21.21
	8H	19.15	20.32	19.57	20.71	21.11	19.30	20.48	19.73	20.87	21.27
	12H	19.20	20.32	19.63	20.71	21.13	19.35	20.47	19.78	20.85	21.28
4H	2H	17.88	19.21	18.28	19.56	19.94	17.82	19.15	18.22	19.50	19.88
	3H	19.39	20.50	19.80	20.89	21.30	19.53	20.64	19.94	21.04	21.44
	4H	19.96	20.96	20.39	21.37	21.81	20.12	21.12	20.55	21.54	21.98
	6H	20.37	21.25	20.83	21.69	22.14	20.52	21.40	20.98	21.84	22.30
	8H	20.49	21.31	20.95	21.75	22.22	20.63	21.45	21.09	21.89	22.36
	12H	20.56	21.29	21.04	21.77	22.24	20.70	21.43	21.18	21.91	22.38
8H	4H	20.39	21.20	20.85	21.65	22.11	20.46	21.28	20.92	21.72	22.19
	6H	20.88	21.56	21.38	22.05	22.53	20.99	21.67	21.49	22.16	22.64
	8H	21.05	21.65	21.56	22.16	22.65	21.16	21.77	21.67	22.27	22.76
	12H	21.16	21.70	21.67	22.19	22.75	21.27	21.81	21.78	22.30	22.86
12H	4H	20.43	21.16	20.91	21.64	22.11	20.50	21.23	20.98	21.71	22.18
	6H	20.95	21.56	21.46	22.07	22.55	21.06	21.67	21.57	22.17	22.66
	8H	21.16	21.70	21.67	22.19	22.75	21.28	21.82	21.79	22.31	22.87