

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: P242638

Luminaire Tested: S124DRP-S350D835-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242638
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-21)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DRP-S350D835-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

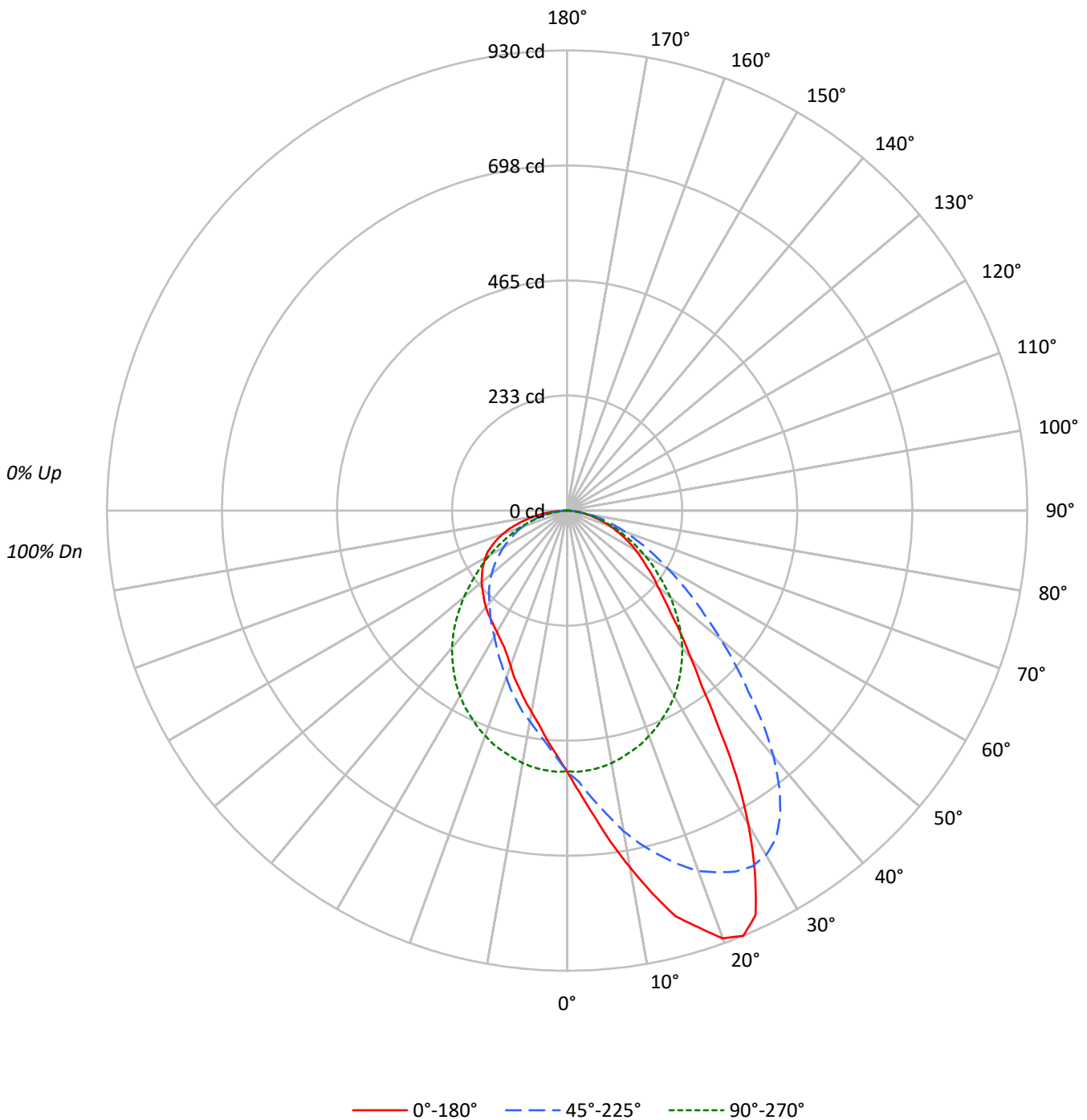
Lumens per Lamp: N/A
Luminaire Lumens: 1454.2 lumens
Efficiency: N/A
Efficacy: 125.4 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.22 / 1.41
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): 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: P242638

CATALOG NUMBER: S124DRP-S350D835-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



TEST NUMBER: P242638

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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	95	92	90	91	89	87	85					85			
2	100	92	86	80	98	90	84	79	87	82	78	84	79	76	81	77	74	72					72			
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	62					62			
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46					46			
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41					41			
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36					36			
8	62	49	41	35	61	49	41	35	47	40	35	46	40	35	45	39	35	33					33			
9	58	45	37	32	57	45	37	32	44	37	32	43	36	32	42	36	31	30					30			
10	55	42	34	29	54	41	34	29	40	34	29	39	33	29	39	33	29	27					27			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	4684	4684	4684	4684	4684
5°	5517	5211	4697	4221	4146
10°	6605	5937	4676	3906	3732
15°	7815	6632	4629	3649	3427
20°	8703	7331	4580	3395	3156
25°	8843	7894	4510	3196	2968
30°	7525	8250	4441	3019	2909
35°	5785	8147	4331	2921	2909
40°	4509	7528	4201	2839	2964
45°	3760	6515	4004	2805	3013
50°	3309	5619	3764	2753	3116
55°	3031	4835	3478	2703	3240
60°	2841	4183	3221	2635	3392
65°	2644	3656	2934	2549	3517
70°	2417	3228	2651	2479	3597
75°	2160	2782	2332	2318	3555
80°	1812	2257	1909	2114	3440
85°	1336	1713	1377	1958	3294

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 7193 cd/sqm



TEST NUMBER: P242638

CATALOG NUMBER: S124DRP-S350D835-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.3	3.5
10°-20°	158.3	10.9
20°-30°	251.5	17.3
30°-40°	279.4	19.2
40°-50°	254.1	17.5
50°-60°	207.7	14.3
60°-70°	148.3	10.2
70°-80°	81.6	5.6
80°-90°	22.0	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°	461.1	31.7
0°-40°	740.6	50.9
0°-60°	1202.4	82.7
0°-90°	1454.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1454.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	527	527	527	527	527	
5°	618	584	526	473	465	63
15°	849	721	503	396	372	240
25°	902	805	460	326	303	400
35°	533	751	399	269	268	337
45°	299	518	318	223	240	235
55°	196	312	224	174	209	177
65°	126	174	140	121	167	124
75°	63	81	68	68	104	67
85°	13	17	14	19	32	16
90°	0	0	0	0	0	



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CATALOG NUMBER: S124DRP-S350D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0
2.5°	569.4	569.1	567.0	566.5	565.0	563.0	562.6	559.1	552.1	548.8	548.0
5°	618.3	622.6	617.0	615.9	615.2	608.0	604.3	599.9	589.9	584.0	579.4
7.5°	675.5	675.7	673.3	670.9	666.7	660.6	652.3	642.7	631.1	619.4	611.1
10°	731.8	733.5	730.7	730.3	719.1	712.1	698.2	686.4	672.8	657.8	644.0
12.5°	791.2	787.7	786.6	775.0	775.2	761.0	744.2	732.0	709.3	691.4	672.0
15°	849.2	844.4	841.4	828.5	822.2	804.5	787.2	773.9	746.6	720.7	701.0
17.5°	882.9	888.8	880.9	875.7	858.4	846.8	829.6	802.3	782.0	749.7	727.2
20°	920.0	920.4	916.5	911.0	898.1	882.4	863.2	832.6	807.1	775.0	741.0
22.5°	930.0	930.0	928.9	923.9	915.0	902.9	883.5	859.3	827.0	791.4	757.3
25°	901.6	900.8	902.7	908.4	904.7	900.8	889.6	870.6	841.8	804.9	768.2
27.5°	821.3	827.0	838.8	852.7	862.8	871.7	871.1	863.0	842.5	810.6	771.5
30°	733.1	740.5	748.8	762.8	789.9	805.4	822.4	835.3	828.1	803.8	768.0
32.5°	636.2	636.6	649.9	666.3	690.5	723.9	753.4	782.9	795.5	785.7	757.3
35°	533.1	536.2	549.5	565.2	595.6	632.0	672.6	708.9	738.8	750.8	735.5
37.5°	446.7	456.3	466.3	484.2	511.9	544.9	588.6	633.8	677.6	704.3	707.1
40°	388.6	394.1	400.8	413.7	436.4	468.7	505.0	558.7	606.0	648.8	662.8
42.5°	342.8	345.4	348.9	360.2	376.2	408.2	440.6	486.2	533.8	587.0	612.8
45°	299.1	302.4	309.3	316.1	329.2	351.5	382.3	421.1	468.9	518.3	561.5
47.5°	266.3	268.5	272.9	280.3	292.1	307.2	333.4	366.3	413.0	460.9	507.1
50°	239.3	241.0	244.3	250.8	259.4	272.5	293.0	323.3	358.0	406.3	451.5
52.5°	217.9	218.3	220.5	224.4	230.8	241.2	257.2	281.0	312.6	354.3	399.3
55°	195.6	196.5	198.7	201.9	207.8	214.8	227.7	246.5	274.6	312.0	351.0
57.5°	177.3	178.1	179.9	181.2	186.4	192.3	202.8	216.3	238.4	271.6	307.2
60°	159.8	159.4	161.6	162.6	165.9	170.7	178.4	191.2	209.8	235.3	267.4
62.5°	142.8	142.1	143.9	145.4	146.9	150.9	156.7	166.1	180.3	202.8	229.4
65°	125.7	124.9	126.0	127.7	129.5	131.6	136.2	145.2	157.2	173.8	195.0
67.5°	108.3	109.4	109.4	110.5	111.6	114.6	117.9	124.9	133.4	146.9	165.7
70°	93.0	93.2	94.1	94.1	94.7	97.4	100.0	103.7	112.0	124.2	138.8
72.5°	77.7	78.8	78.2	79.0	79.5	81.0	82.7	86.2	93.0	101.3	113.1
75°	62.9	63.5	63.5	63.7	64.4	65.1	66.6	69.2	74.2	81.0	89.5
77.5°	48.5	48.5	48.9	49.8	49.8	50.9	52.2	54.1	57.0	62.0	67.5
80°	35.4	35.8	35.6	36.0	36.0	36.9	37.3	40.0	41.0	44.1	48.2
82.5°	23.6	24.0	24.0	24.7	25.1	25.1	25.8	26.4	27.5	30.1	31.2
85°	13.1	13.5	13.1	13.5	14.2	14.4	15.1	15.3	16.2	16.8	18.3
87.5°	4.8	5.5	5.5	5.7	6.1	6.3	6.5	6.3	7.2	7.4	8.3
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: P242638

CATALOG NUMBER: S124DRP-S350D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0
2.5°	548.2	545.1	542.9	541.2	536.4	533.6	531.4	528.3	524.8	521.1	516.5
5°	574.8	567.4	561.9	553.6	545.8	539.2	532.5	526.4	518.9	510.9	505.0
7.5°	602.1	591.8	578.1	567.4	554.5	543.4	533.6	523.3	512.4	501.9	492.1
10°	627.9	613.7	598.0	579.4	561.9	546.4	532.0	518.1	504.5	491.0	479.4
12.5°	655.6	637.0	611.9	589.4	569.4	547.3	529.2	511.3	494.3	479.9	465.9
15°	679.8	654.3	627.4	598.4	572.6	548.4	524.6	503.0	484.7	465.9	452.8
17.5°	695.1	663.5	634.6	604.3	574.6	544.3	519.6	495.4	472.6	454.3	437.9
20°	710.2	678.7	640.5	610.2	573.1	541.6	511.9	484.2	460.2	440.3	423.3
22.5°	723.3	685.7	647.5	605.2	568.3	534.4	501.2	473.3	448.6	427.5	411.3
25°	726.3	684.6	643.2	603.4	561.5	522.0	492.5	459.8	433.6	411.5	394.1
27.5°	727.4	683.3	637.3	594.0	550.8	514.8	476.4	447.8	420.7	397.3	380.7
30°	725.0	678.5	628.1	580.3	536.8	496.9	464.6	432.7	405.0	381.8	364.4
32.5°	717.4	668.5	616.3	565.0	519.6	480.7	447.1	417.2	390.3	367.6	349.1
35°	701.2	653.4	598.2	545.6	499.5	460.0	429.9	399.1	372.0	350.4	332.7
37.5°	679.6	635.1	579.0	524.2	479.9	439.7	409.3	381.0	356.5	334.2	315.9
40°	649.5	611.5	555.2	502.1	453.2	415.4	387.5	362.0	337.7	317.0	299.7
42.5°	614.8	582.9	532.0	475.0	428.3	390.3	363.3	341.0	318.5	299.7	282.5
45°	572.2	550.4	501.5	449.5	400.4	364.6	338.6	318.5	299.3	280.5	266.1
47.5°	524.8	512.6	470.0	420.3	373.1	337.3	314.8	295.6	278.1	261.8	248.9
50°	477.0	471.8	436.2	388.6	344.1	310.9	288.2	272.2	257.8	243.9	231.8
52.5°	429.9	431.0	399.7	357.2	316.8	285.1	262.6	248.0	236.0	225.3	214.8
55°	381.6	387.7	362.6	323.8	286.9	258.0	237.7	224.4	215.7	206.3	198.2
57.5°	337.3	347.6	325.7	290.1	258.9	231.4	213.5	203.2	193.6	187.5	181.2
60°	294.1	303.7	287.5	258.7	229.7	207.0	190.2	181.2	173.1	169.2	165.0
62.5°	255.6	263.9	253.0	226.8	202.6	181.0	167.4	158.9	154.1	149.8	147.4
65°	219.4	226.6	216.3	196.9	175.3	157.8	146.3	139.5	134.3	132.5	129.5
67.5°	183.6	190.2	184.7	167.7	149.3	135.6	126.4	119.2	116.1	114.4	112.4
70°	152.4	158.9	153.0	138.6	125.3	114.2	105.7	102.0	98.7	98.0	95.0
72.5°	126.0	129.9	124.0	113.5	102.6	93.7	87.5	83.6	82.3	81.0	79.7
75°	98.5	102.4	98.5	89.7	81.6	75.1	69.4	67.9	65.9	65.3	64.2
77.5°	73.8	77.5	74.4	68.6	62.2	56.8	53.5	51.3	51.1	49.8	50.2
80°	53.3	55.5	52.6	48.9	44.1	40.6	38.4	37.3	36.0	35.6	36.5
82.5°	34.5	35.1	34.1	31.9	28.6	26.6	25.3	24.0	24.0	24.2	24.0
85°	19.9	19.6	19.4	17.2	16.2	14.6	13.8	13.5	13.3	13.8	14.2
87.5°	8.3	8.5	8.3	7.4	6.8	6.1	5.9	5.7	5.9	6.1	6.3
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: P242638

CATALOG NUMBER: S124DRP-S350D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0	527.0
2.5°	514.3	512.4	509.5	505.6	502.3	498.8	498.0	496.7	499.3	497.1	496.4
5°	499.9	495.4	489.5	482.7	478.8	473.1	472.0	469.8	467.6	467.4	465.2
7.5°	484.9	478.5	471.1	464.1	458.0	451.9	448.0	447.5	444.0	442.3	440.1
10°	470.5	462.2	453.2	446.7	439.2	432.7	428.1	425.5	423.3	420.9	418.7
12.5°	453.4	444.5	437.5	430.3	421.1	416.5	408.2	403.2	403.2	403.9	397.3
15°	441.0	432.3	420.9	410.9	406.1	396.5	392.3	387.1	383.8	380.5	377.9
17.5°	425.7	415.0	406.3	394.9	386.0	378.8	373.1	370.3	365.0	360.2	356.9
20°	411.5	399.9	390.6	378.3	368.3	358.9	354.3	350.0	346.2	342.3	338.6
22.5°	397.1	384.9	372.9	361.1	351.9	341.9	337.5	331.2	327.7	325.9	322.2
25°	381.8	368.7	355.6	344.3	334.7	325.9	320.0	315.5	311.5	309.8	307.4
27.5°	365.2	352.4	339.9	326.8	315.7	309.3	304.5	300.8	298.4	295.8	294.7
30°	349.5	336.0	322.4	310.4	300.4	294.1	289.7	287.3	285.6	284.5	283.4
32.5°	333.6	320.3	305.9	295.2	286.4	281.0	277.9	275.5	274.9	274.6	274.4
35°	316.3	302.8	289.7	279.9	271.4	269.2	266.3	265.0	264.6	266.1	266.8
37.5°	299.7	287.1	274.9	265.0	259.4	255.9	254.8	254.6	256.1	257.4	258.9
40°	283.8	271.6	260.2	251.9	246.7	244.7	244.3	245.4	247.1	248.7	250.4
42.5°	268.3	256.3	246.3	238.6	235.3	233.6	234.0	235.1	237.7	239.7	242.5
45°	252.2	242.1	232.1	225.7	222.7	223.1	223.1	225.1	227.5	230.3	233.2
47.5°	237.1	226.8	218.3	212.9	211.3	210.7	211.8	214.4	217.7	220.9	224.9
50°	221.8	212.2	205.0	200.2	198.4	199.1	200.8	203.2	207.4	211.8	215.9
52.5°	206.3	197.8	191.2	186.9	185.8	187.1	188.8	193.0	196.5	201.3	206.5
55°	190.2	182.7	177.5	174.2	173.8	174.4	176.4	180.5	185.8	191.7	196.5
57.5°	174.2	167.9	162.9	160.5	160.7	161.1	164.2	169.2	174.4	180.8	186.9
60°	158.1	152.4	148.5	146.7	146.9	148.2	152.2	156.7	163.7	169.8	176.4
62.5°	142.8	138.0	134.3	132.7	132.3	135.6	139.3	144.1	151.1	158.1	165.3
65°	126.2	122.3	119.2	118.3	119.0	121.2	126.0	132.3	138.2	145.4	152.8
67.5°	110.0	106.8	104.6	105.0	105.7	108.7	112.9	118.3	124.9	132.3	139.9
70°	94.7	91.7	89.9	90.2	91.5	95.4	98.9	104.4	111.6	119.2	125.3
72.5°	79.0	77.3	75.8	76.8	78.2	80.6	85.1	90.6	96.7	103.7	110.2
75°	63.1	63.1	62.2	62.9	64.8	67.5	70.7	76.4	82.7	88.4	93.7
77.5°	49.6	48.9	49.3	50.0	51.3	54.6	58.3	62.4	67.5	73.4	77.7
80°	35.8	36.0	37.1	38.4	38.9	41.3	45.2	48.9	52.6	57.4	61.6
82.5°	24.7	24.9	25.3	27.1	27.5	30.1	32.3	36.0	39.3	42.1	45.4
85°	14.6	14.6	15.7	16.4	17.5	19.2	20.7	22.9	26.0	28.2	31.4
87.5°	7.0	7.0	7.9	8.3	9.0	10.0	10.5	12.9	13.8	14.8	16.8
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: P242638

CATALOG NUMBER: S124DRP-S350D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	527.0	527.0	527.0	527.0
2.5°	496.0	495.6	494.0	493.8
5°	463.9	462.8	462.2	464.6
7.5°	439.7	438.8	436.8	436.2
10°	416.5	415.7	413.9	413.5
12.5°	394.3	392.3	392.3	393.0
15°	375.1	374.2	371.8	372.4
17.5°	355.4	354.5	351.3	354.5
20°	337.1	335.3	333.8	333.6
22.5°	319.6	318.1	318.3	316.6
25°	305.6	304.1	303.7	302.6
27.5°	294.3	293.4	292.5	293.0
30°	284.0	283.8	283.4	283.4
32.5°	275.5	275.5	275.9	275.9
35°	267.7	268.3	268.7	268.1
37.5°	260.7	261.1	261.8	262.4
40°	252.4	253.9	254.3	255.4
42.5°	244.5	246.3	247.6	247.6
45°	236.4	238.2	239.7	239.7
47.5°	228.1	230.5	232.1	232.3
50°	219.6	222.7	224.2	225.3
52.5°	211.3	214.4	216.6	217.0
55°	201.5	205.9	208.3	209.1
57.5°	192.8	196.7	199.3	200.0
60°	182.3	186.7	190.2	190.8
62.5°	171.6	176.2	179.2	181.2
65°	158.9	163.5	166.6	167.2
67.5°	145.6	150.4	152.4	153.7
70°	131.4	135.1	137.3	138.4
72.5°	115.3	119.2	121.8	121.8
75°	98.7	102.2	103.5	103.5
77.5°	81.4	83.4	85.1	85.6
80°	64.8	65.9	67.2	67.2
82.5°	47.8	48.7	50.0	49.8
85°	31.0	33.0	32.7	32.3
87.5°	17.5	17.7	18.3	18.8
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242638
 CATALOG NUMBER: S124DRP-S350D835-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	15.33	16.89	15.70	17.21	17.52	16.24	17.81	16.61	18.12	18.43
	3H	16.82	18.22	17.19	18.55	18.91	17.61	19.02	17.99	19.34	19.70
	4H	17.35	18.68	17.75	19.02	19.40	18.08	19.40	18.48	19.75	20.13
	6H	17.71	18.94	18.13	19.30	19.69	18.39	19.61	18.80	19.98	20.37
	8H	17.81	18.98	18.24	19.37	19.77	18.47	19.64	18.90	20.02	20.43
	12H	17.87	18.99	18.30	19.37	19.80	18.51	19.63	18.94	20.01	20.44
4H	2H	16.49	17.81	16.89	18.16	18.54	16.93	18.25	17.33	18.60	18.98
	3H	18.02	19.13	18.43	19.52	19.92	18.64	19.74	19.05	20.14	20.54
	4H	18.61	19.60	19.04	20.02	20.46	19.23	20.22	19.66	20.64	21.07
	6H	19.04	19.90	19.49	20.35	20.80	19.62	20.49	20.08	20.93	21.39
	8H	19.16	19.97	19.62	20.42	20.88	19.73	20.54	20.19	20.98	21.45
	12H	19.24	19.96	19.72	20.44	20.91	19.79	20.52	20.27	21.00	21.47
8H	4H	19.07	19.88	19.53	20.32	20.79	19.54	20.35	20.00	20.79	21.26
	6H	19.57	20.24	20.07	20.73	21.21	20.07	20.74	20.56	21.23	21.71
	8H	19.74	20.35	20.25	20.85	21.34	20.23	20.83	20.74	21.34	21.83
	12H	19.87	20.40	20.37	20.89	21.45	20.34	20.88	20.85	21.37	21.93
12H	4H	19.11	19.84	19.60	20.32	20.79	19.57	20.30	20.05	20.78	21.25
	6H	19.65	20.25	20.16	20.76	21.25	20.12	20.73	20.64	21.24	21.72
	8H	19.87	20.40	20.37	20.89	21.45	20.35	20.88	20.85	21.37	21.93