

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: P242564

Luminaire Tested: S123RDRP-S340D830-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242564
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-30)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDRP-S340D830-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

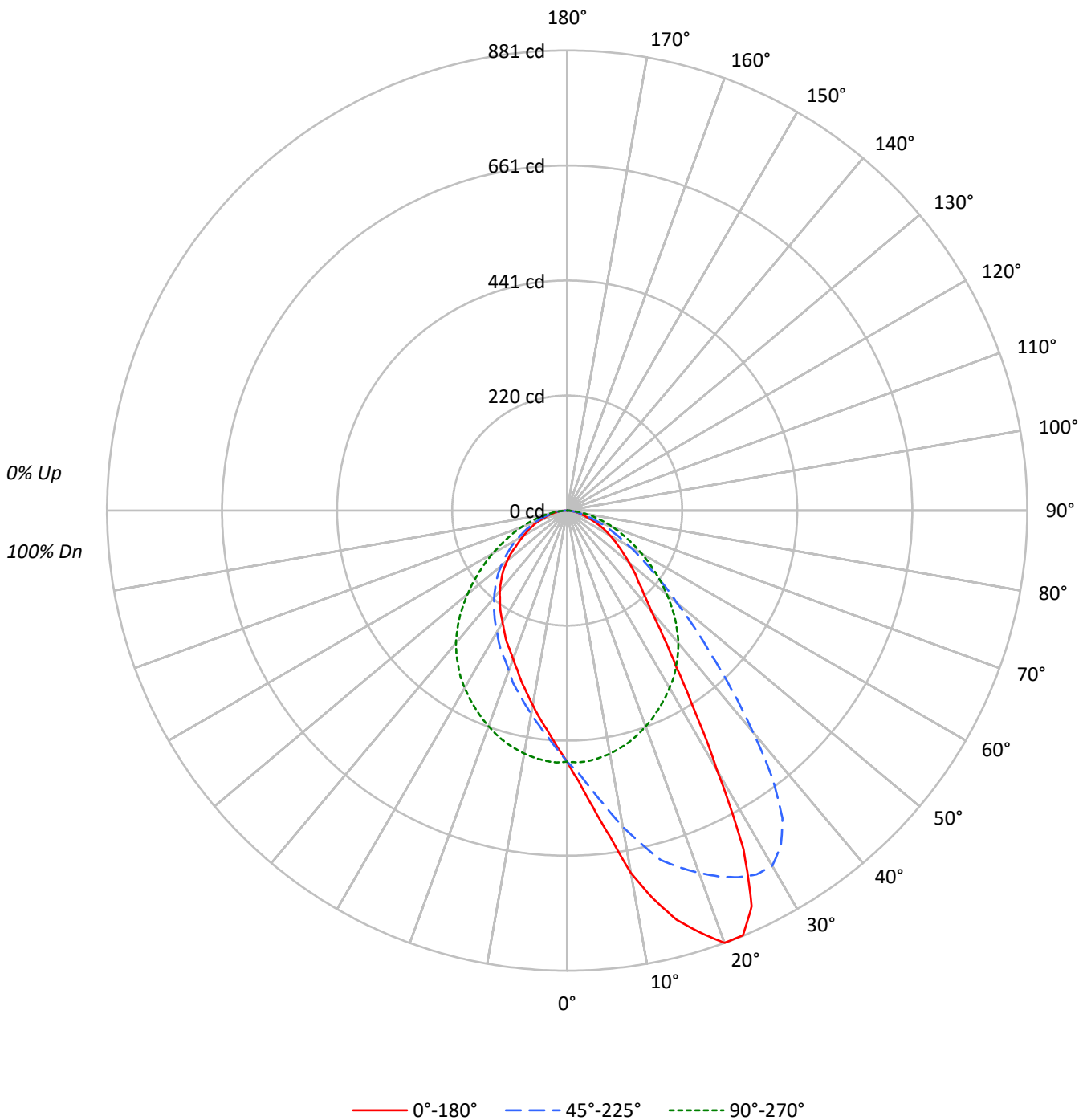
Lumens per Lamp: N/A
Luminaire Lumens: 1196.9 lumens
Efficiency: N/A
Efficacy: 103.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

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

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CATALOG NUMBER: S123RDRP-S340D830-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	110	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	74					74			
3	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64					64			
4	86	75	67	61	84	74	66	61	71	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44					44			
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39					39			
8	64	52	44	38	63	51	43	38	50	43	38	48	42	38	47	42	37	36					36			
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32					32			
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29					29			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	5827	5827	5827	5827	5827
5°	6945	6514	5851	5283	5153
10°	8672	7567	5818	4868	4655
15°	10180	8691	5759	4526	4245
20°	11360	9518	5669	4206	3897
25°	11178	10358	5576	3986	3682
30°	8035	10990	5489	3755	3461
35°	5365	10633	5377	3599	3319
40°	3953	8764	5242	3442	3171
45°	3315	6687	5005	3295	3027
50°	2927	5157	4695	3115	2825
55°	2566	4115	4341	2931	2549
60°	2284	3358	4000	2693	2335
65°	2008	2751	3637	2484	2171
70°	1574	2208	3310	2282	1985
75°	1386	1630	2890	2061	1812
80°	1208	1396	2457	1808	1780
85°	974	1057	1975	1836	1891

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 60°
 Vertical Angle: 45°
 Luminance: 9411 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	47.2	3.9
10°-20°	147.8	12.3
20°-30°	232.7	19.4
30°-40°	242.0	20.2
40°-50°	207.1	17.3
50°-60°	157.8	13.2
60°-70°	101.1	8.4
70°-80°	48.4	4.0
80°-90°	12.7	1.1
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°	427.7	35.7
0°-40°	669.7	56.0
0°-60°	1034.6	86.4
0°-90°	1196.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1196.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	481	481	481	481	481	
5°	571	535	481	434	424	58
15°	811	693	459	361	338	230
25°	836	774	417	298	275	363
35°	363	719	363	243	224	236
45°	193	390	292	192	177	152
55°	121	195	205	139	121	110
65°	70	96	127	87	76	69
75°	30	35	62	44	39	32
85°	7	8	14	13	14	8
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°	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7
2.5°	519.8	520.6	517.9	517.5	514.4	513.6	513.6	509.3	506.6	503.1	501.1
5°	570.8	574.1	572.5	568.8	562.6	561.1	557.2	551.1	544.1	535.4	531.3
7.5°	629.3	636.0	634.8	629.0	622.5	618.3	607.4	598.6	585.2	573.1	563.6
10°	704.6	699.8	696.1	690.6	684.6	674.9	663.4	647.6	629.3	614.8	598.8
12.5°	760.9	761.2	756.2	750.5	741.4	732.3	717.5	697.4	675.3	652.9	634.0
15°	811.2	812.4	809.3	803.3	791.4	775.1	753.7	745.7	715.3	692.6	670.0
17.5°	847.0	847.2	846.5	838.5	825.6	814.4	794.5	775.8	747.0	716.3	686.0
20°	880.7	878.6	879.1	869.8	860.7	847.4	828.0	797.4	774.7	737.9	706.4
22.5°	879.9	879.9	881.7	880.1	874.1	864.7	850.5	825.8	795.3	758.1	721.6
25°	835.8	834.2	843.9	846.5	857.0	858.9	854.4	840.2	812.8	774.5	730.7
27.5°	730.9	724.9	745.1	765.1	791.6	808.5	825.8	829.7	816.7	785.4	739.5
30°	574.1	593.4	602.5	635.0	671.2	714.4	752.3	788.3	797.2	785.2	749.2
32.5°	452.3	468.5	475.7	502.5	535.6	588.1	649.6	704.4	747.2	761.6	743.5
35°	362.6	362.8	380.1	392.4	423.7	475.7	530.9	599.2	667.1	718.6	723.9
37.5°	299.2	300.0	311.1	323.5	348.6	377.8	429.0	486.7	568.3	645.1	685.0
40°	249.8	251.7	259.5	271.6	288.5	309.3	347.1	400.6	466.1	553.9	625.8
42.5°	218.1	221.4	224.5	233.1	242.0	261.1	289.9	328.2	386.2	468.1	553.7
45°	193.4	195.1	198.2	202.5	211.9	225.5	246.1	273.9	323.3	390.1	473.1
47.5°	174.5	173.5	177.0	180.7	187.0	196.9	211.3	235.4	272.4	328.4	400.2
50°	155.2	154.9	157.2	159.9	165.9	172.6	184.0	201.0	229.0	273.5	337.9
52.5°	137.0	138.1	139.5	143.0	146.9	152.1	161.9	173.1	196.1	232.9	284.0
55°	121.4	122.0	124.3	126.1	129.2	134.8	141.2	151.4	167.9	194.7	238.9
57.5°	107.8	107.6	109.9	110.1	114.0	118.7	123.9	131.9	144.5	165.6	196.5
60°	94.2	93.6	95.5	96.9	98.8	102.5	106.6	114.4	123.9	138.5	164.0
62.5°	81.9	81.7	82.9	84.4	85.8	89.1	92.4	97.9	104.9	116.7	135.6
65°	70.0	70.6	71.2	71.8	72.6	74.7	78.0	82.1	87.2	95.9	110.5
67.5°	57.6	58.4	58.6	60.1	61.7	62.8	64.6	68.5	72.4	80.3	88.9
70°	44.4	44.2	44.4	45.1	47.3	49.6	52.3	54.9	57.2	62.3	69.3
72.5°	36.6	36.2	36.8	36.8	37.7	37.9	39.3	41.8	44.9	47.9	52.5
75°	29.6	29.6	29.6	29.6	30.5	30.9	31.5	32.1	33.1	34.8	38.5
77.5°	23.0	23.0	23.5	23.7	23.9	24.1	24.5	25.1	25.5	26.3	28.2
80°	17.3	17.5	17.3	17.5	17.5	17.9	18.1	18.7	18.9	20.0	20.6
82.5°	11.9	11.7	11.9	12.1	12.1	12.6	12.6	13.0	13.0	13.4	14.0
85°	7.0	6.6	7.0	6.8	7.2	6.8	7.0	7.4	7.4	7.6	8.4
87.5°	2.1	2.5	2.1	2.3	2.3	2.5	2.5	2.5	2.9	2.7	2.9
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°	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7
2.5°	500.2	499.6	496.7	493.4	489.1	486.2	484.0	482.7	479.0	474.5	471.4
5°	527.0	520.8	514.2	506.2	498.8	491.2	486.4	480.9	474.1	466.5	461.1
7.5°	553.5	542.8	531.1	519.0	506.6	495.7	485.6	477.4	467.1	456.6	449.4
10°	585.0	567.3	549.0	530.3	513.2	497.1	484.8	472.7	459.7	447.1	437.7
12.5°	613.6	588.9	567.1	543.0	520.0	500.0	480.9	466.1	449.8	436.2	425.1
15°	636.9	613.0	587.5	552.5	523.5	499.2	477.6	458.9	439.9	423.5	413.0
17.5°	661.1	624.9	591.4	564.2	526.4	496.9	471.6	449.8	429.2	412.4	399.2
20°	675.1	640.4	603.1	565.9	528.8	494.9	464.2	439.5	417.9	398.2	386.2
22.5°	683.6	643.0	603.3	562.6	522.7	487.1	456.8	429.0	405.2	386.6	371.2
25°	689.7	642.8	599.6	560.1	520.0	481.7	445.7	416.9	391.6	371.6	356.0
27.5°	694.7	640.4	590.8	547.8	507.2	468.3	435.8	405.0	379.6	358.9	341.8
30°	695.9	637.3	580.3	532.7	491.4	456.4	421.4	392.2	365.0	342.6	327.0
32.5°	697.6	629.7	566.1	514.8	472.2	437.7	406.8	379.2	351.3	329.2	313.2
35°	691.8	627.8	551.7	493.6	451.3	417.7	389.1	363.4	336.0	314.6	298.4
37.5°	674.3	617.7	537.3	470.0	426.2	395.3	371.4	348.0	322.7	299.2	284.2
40°	644.9	601.3	520.0	448.8	402.5	370.6	349.6	331.3	307.0	285.4	268.9
42.5°	601.1	578.8	503.5	426.6	375.7	345.3	328.4	311.5	291.0	268.9	253.7
45°	545.5	549.0	479.9	402.7	351.5	320.6	303.9	292.0	273.1	255.0	239.1
47.5°	478.0	507.2	454.6	377.6	325.1	296.1	281.5	270.6	257.4	238.7	224.1
50°	412.2	458.9	422.9	352.3	300.6	271.8	257.4	249.0	237.9	223.9	210.1
52.5°	351.5	402.5	384.6	324.1	274.1	248.4	234.4	227.8	219.6	206.6	194.5
55°	296.5	347.3	342.4	295.7	247.5	223.9	213.2	205.4	199.4	189.5	179.6
57.5°	248.8	298.0	299.0	264.2	224.5	200.4	191.2	185.0	180.9	173.1	163.4
60°	204.1	248.4	257.0	232.3	199.4	178.8	169.8	165.0	161.9	156.0	149.0
62.5°	167.1	203.1	213.2	197.1	175.3	156.4	149.8	145.3	143.4	138.5	132.5
65°	133.5	164.8	174.3	164.4	151.9	136.4	130.7	126.8	124.9	122.0	117.5
67.5°	105.4	129.6	139.9	131.7	127.0	116.1	112.1	109.9	108.2	106.2	102.3
70°	80.7	97.5	108.2	106.4	102.7	97.5	94.9	93.4	91.8	90.1	86.8
72.5°	60.9	71.2	81.1	82.7	79.8	79.8	77.6	77.2	76.3	74.3	72.8
75°	43.0	51.0	58.0	60.7	61.9	63.0	61.9	61.7	61.5	59.9	58.9
77.5°	29.8	35.0	39.7	44.4	46.1	47.5	47.7	48.6	47.9	46.9	46.5
80°	21.6	22.6	25.7	29.6	32.7	34.0	34.8	35.2	35.0	34.8	34.0
82.5°	14.2	15.0	16.1	18.5	21.0	23.3	23.7	23.5	24.1	24.3	23.7
85°	8.4	8.6	9.1	9.5	10.9	13.2	13.8	14.2	14.6	14.6	13.4
87.5°	3.3	3.1	3.5	3.5	4.1	4.3	5.6	6.6	6.8	6.0	6.0
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°	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7
2.5°	470.4	467.7	465.9	461.8	459.1	456.2	453.3	455.2	455.0	454.8	454.8
5°	456.6	451.9	447.6	442.0	438.5	434.2	430.9	430.5	431.3	428.4	426.8
7.5°	443.6	437.5	431.3	425.5	419.2	414.2	411.1	409.9	407.6	405.8	404.1
10°	429.9	422.2	416.3	408.7	401.7	395.5	391.6	388.9	387.5	386.0	383.4
12.5°	415.7	408.3	400.2	391.4	384.8	377.4	374.7	371.6	368.5	366.9	363.0
15°	401.9	392.2	384.2	375.1	367.7	360.7	356.6	350.6	349.8	347.8	344.1
17.5°	388.5	377.8	366.1	359.9	352.5	345.1	338.5	336.6	330.5	328.4	324.9
20°	372.0	362.4	353.9	345.1	332.9	326.1	321.2	318.5	313.8	310.9	308.9
22.5°	357.8	348.0	337.9	327.2	317.7	309.9	306.6	302.1	300.0	295.7	293.4
25°	344.5	333.8	322.0	310.9	303.7	298.0	292.2	288.5	284.8	282.9	278.8
27.5°	328.2	317.5	306.2	297.5	289.3	283.6	278.0	274.9	270.2	267.1	264.8
30°	315.2	302.1	292.6	285.0	273.7	268.3	264.4	260.3	257.0	253.7	251.5
32.5°	300.2	288.5	279.6	269.8	261.7	255.8	250.4	246.9	244.3	241.2	238.9
35°	284.4	274.3	265.0	255.6	249.2	243.2	237.3	234.2	231.5	228.6	226.6
37.5°	270.0	260.5	251.9	242.8	235.0	229.8	224.9	222.9	219.1	217.1	215.0
40°	256.8	247.5	238.1	229.4	221.2	217.5	213.2	209.7	206.4	204.9	202.7
42.5°	242.4	233.1	225.5	216.1	209.7	204.3	200.4	196.5	194.2	192.0	191.0
45°	228.2	220.0	212.2	202.9	196.5	192.2	187.7	184.2	181.9	180.5	178.2
47.5°	214.6	206.2	198.4	190.1	184.0	179.0	174.3	172.0	168.9	167.3	165.6
50°	199.6	192.2	183.8	176.3	170.2	165.2	161.5	158.4	155.8	153.5	152.5
52.5°	185.8	177.8	170.8	164.0	157.4	151.7	148.4	145.1	143.2	140.5	139.3
55°	170.4	162.8	156.6	149.8	143.4	138.7	134.6	131.7	129.6	126.8	125.1
57.5°	156.2	149.6	142.0	136.0	129.2	125.5	122.0	117.9	115.4	113.2	111.5
60°	141.8	134.0	127.6	122.0	116.3	111.1	108.0	104.9	102.3	100.0	98.6
62.5°	126.8	120.2	114.2	108.0	102.9	98.6	94.9	92.4	90.1	88.9	87.5
65°	111.3	106.0	99.8	94.9	89.9	86.6	83.7	81.5	79.8	78.8	77.6
67.5°	97.1	92.0	86.4	81.3	78.0	75.3	73.3	71.2	70.4	69.1	68.3
70°	83.3	78.0	73.3	69.6	66.3	64.4	63.2	61.7	60.9	59.3	58.4
72.5°	68.3	64.8	61.7	58.9	56.4	54.7	53.1	51.2	49.8	47.9	47.1
75°	56.2	52.7	50.0	47.9	46.3	44.0	41.8	39.9	39.3	38.7	38.5
77.5°	43.8	41.6	39.5	37.9	35.6	33.5	32.9	32.5	32.3	31.9	31.9
80°	32.7	30.7	29.2	27.2	25.9	25.9	25.9	25.5	25.7	25.7	25.7
82.5°	22.2	20.4	19.8	19.3	19.3	19.5	19.5	19.8	19.5	20.0	19.8
85°	12.6	12.8	13.2	13.0	13.2	13.2	13.6	13.4	13.6	13.2	13.6
87.5°	5.8	6.4	6.6	6.8	7.0	6.8	7.0	7.0	7.2	7.2	7.2
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: P242564

CATALOG NUMBER: S123RDRP-S340D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	480.7	480.7	480.7	480.7
2.5°	452.3	452.1	452.3	451.5
5°	426.2	425.9	425.3	423.5
7.5°	402.5	402.1	400.4	400.8
10°	381.9	382.1	379.6	378.2
12.5°	362.0	360.7	358.9	357.2
15°	344.9	342.8	337.9	338.3
17.5°	323.7	322.0	321.8	318.9
20°	305.6	304.5	305.0	302.1
22.5°	291.4	290.3	288.1	287.7
25°	277.6	275.9	274.3	275.3
27.5°	263.6	262.4	260.5	260.5
30°	250.4	249.2	248.4	247.3
32.5°	237.0	237.0	235.4	235.4
35°	225.7	224.5	224.1	224.3
37.5°	214.8	213.2	212.4	211.5
40°	202.9	201.2	200.8	200.4
42.5°	189.5	189.1	188.9	188.1
45°	177.6	177.4	176.1	176.6
47.5°	164.8	163.8	163.2	163.8
50°	151.7	151.2	149.4	149.8
52.5°	138.5	136.6	136.2	135.8
55°	123.7	121.8	121.0	120.6
57.5°	109.1	108.4	107.6	108.2
60°	96.5	96.5	96.5	96.3
62.5°	86.8	86.2	86.0	86.4
65°	77.0	76.8	75.9	75.7
67.5°	67.9	67.1	67.1	66.7
70°	57.4	57.0	55.8	56.0
72.5°	46.1	45.7	45.7	45.3
75°	38.3	38.1	37.9	38.7
77.5°	31.9	31.9	32.1	31.7
80°	25.7	25.7	25.5	25.5
82.5°	19.3	19.5	19.8	19.3
85°	13.6	13.4	13.8	13.6
87.5°	7.6	7.2	7.2	7.4
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242564
 CATALOG NUMBER: S123RDRP-S340D830-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	13.76	15.25	14.13	15.57	15.88	17.16	18.65	17.52	18.96	19.28
	3H	14.85	16.19	15.23	16.52	16.88	18.57	19.90	18.94	20.23	20.59
	4H	15.19	16.44	15.59	16.79	17.17	19.07	20.32	19.47	20.67	21.05
	6H	15.44	16.59	15.85	16.96	17.35	19.42	20.57	19.83	20.94	21.33
	8H	15.51	16.61	15.93	16.99	17.40	19.52	20.62	19.95	21.01	21.41
	12H	15.54	16.59	15.97	16.98	17.41	19.58	20.63	20.01	21.02	21.45
4H	2H	14.74	15.99	15.14	16.34	16.72	17.40	18.65	17.80	19.00	19.38
	3H	15.91	16.95	16.32	17.35	17.75	19.09	20.13	19.50	20.53	20.93
	4H	16.30	17.23	16.73	17.65	18.08	19.70	20.64	20.14	21.05	21.49
	6H	16.61	17.42	17.07	17.86	18.32	20.17	20.98	20.63	21.42	21.88
	8H	16.70	17.45	17.16	17.90	18.37	20.31	21.07	20.78	21.51	21.98
	12H	16.76	17.43	17.24	17.91	18.38	20.41	21.09	20.90	21.57	22.04
8H	4H	16.66	17.42	17.13	17.86	18.33	19.76	20.51	20.22	20.96	21.42
	6H	17.04	17.66	17.54	18.15	18.63	20.29	20.91	20.79	21.41	21.88
	8H	17.17	17.73	17.68	18.24	18.73	20.48	21.04	21.00	21.55	22.04
	12H	17.27	17.76	17.78	18.26	18.82	20.64	21.14	21.15	21.63	22.19
12H	4H	16.69	17.37	17.18	17.85	18.32	19.74	20.42	20.22	20.90	21.37
	6H	17.08	17.64	17.60	18.15	18.64	20.28	20.84	20.79	21.35	21.84
	8H	17.26	17.75	17.77	18.24	18.81	20.51	21.00	21.02	21.50	22.06