

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: P243362

Luminaire Tested: S123DRP-H560D835-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243362
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-54)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-H560D835-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

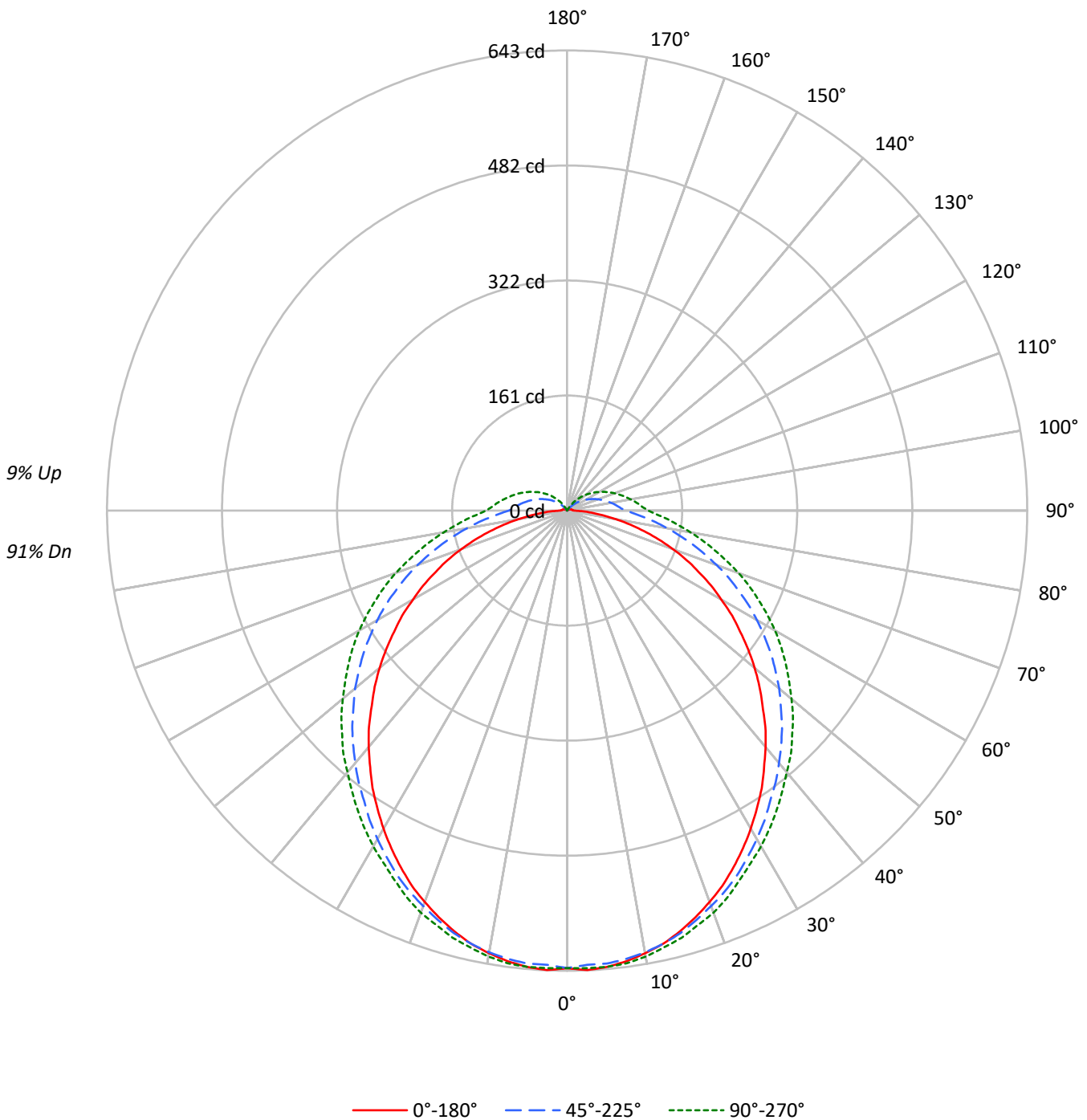
Lumens per Lamp: N/A
Luminaire Lumens: 2170.0 lumens
Efficiency: N/A
Efficacy: 126.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 17.2
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: P243362

CATALOG NUMBER: S123DRP-H560D835-X4F0-XX-UDD-D-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	0	
RCR																						
0	117	117	117	117	113	113	113	113	106	106	106	100	100	100	94	94	94	94	94	94	91	
1	105	100	95	90	101	96	92	88	91	87	84	85	82	80	80	78	76	76	76	76	73	
2	95	86	79	72	91	83	77	71	78	73	68	74	69	65	69	66	62	62	62	62	60	
3	86	75	66	60	83	73	65	58	69	62	56	65	59	54	61	56	52	52	52	52	50	
4	79	66	57	50	76	64	56	49	61	53	48	57	51	46	54	49	45	45	45	45	42	
5	72	59	50	43	70	57	49	42	54	47	41	51	45	40	49	43	39	39	39	39	36	
6	67	53	44	37	64	52	43	37	49	41	36	46	40	35	44	38	34	34	34	34	31	
7	62	48	39	33	60	47	38	32	44	37	32	42	36	31	40	34	30	30	30	30	28	
8	57	44	35	29	55	43	34	29	41	33	28	39	32	27	37	31	27	27	27	27	25	
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	24	24	24	22	
10	50	37	29	24	49	36	29	23	35	28	23	33	27	22	32	26	22	22	22	22	20	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7749	7749	7749
5°	7773	7550	7547
10°	7700	7360	7318
15°	7595	7149	7067
20°	7449	6901	6812
25°	7283	6669	6518
30°	7096	6410	6270
35°	6910	6148	6023
40°	6704	5934	5787
45°	6478	5722	5590
50°	6288	5505	5385
55°	6055	5284	5184
60°	5813	5041	4987
65°	5557	4780	4749
70°	5264	4500	4515
75°	4825	4197	4238
80°	4274	3896	3996
85°	3796	3652	3811

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6478 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	60.7	2.8
10°-20°	173.1	8.0
20°-30°	259.2	11.9
30°-40°	310.1	14.3
40°-50°	325.2	15.0
50°-60°	305.7	14.1
60°-70°	255.8	11.8
70°-80°	183.6	8.5
80°-90°	110.0	5.1
90°-100°	69.7	3.2
100°-110°	51.4	2.4
110°-120°	34.4	1.6
120°-130°	19.8	0.9
130°-140°	9.1	0.4
140°-150°	2.1	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	492.9	22.7
0°-40°	803.0	37.0
0°-60°	1433.9	66.1
0°-90°	1983.4	91.4
90°-120°	155.5	7.2
90°-150°	186.6	8.6
90°-180°	187.0	8.6
0°-180°	2170.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	639	639	639	639	639	
5°	640	639	635	641	640	61
15°	609	613	611	619	618	172
25°	550	557	562	571	570	253
35°	474	485	495	507	511	296
45°	386	405	425	439	445	299
55°	295	320	347	366	373	264
65°	203	233	264	287	295	201
75°	111	145	181	205	213	118
85°	34	69	108	133	141	35
90°	9	44	81	106	113	6
95°	7	36	71	93	101	6
105°	5	23	54	74	80	6
115°	3	12	38	55	61	4
125°	3	3	23	38	43	2
135°	1	1	10	22	26	1
145°	1	0	0	7	9	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	639.3	639.3	639.3	639.3	639.3
2.5°	642.7	640.7	635.3	641.3	640.0
5°	640.0	639.3	635.3	640.7	640.0
7.5°	635.3	635.3	632.0	638.0	638.0
10°	628.0	630.0	626.7	633.3	632.7
12.5°	620.0	622.7	620.0	627.3	625.3
15°	608.7	612.7	611.3	619.3	618.0
17.5°	596.0	600.7	600.0	608.0	607.3
20°	582.0	588.0	588.0	596.0	598.0
22.5°	567.3	574.0	576.0	584.0	585.3
25°	550.0	557.3	562.0	570.7	570.0
27.5°	532.0	540.7	546.0	555.3	555.3
30°	513.3	523.3	530.0	540.0	542.0
32.5°	493.3	505.3	513.3	524.0	526.7
35°	474.0	485.3	494.7	507.3	510.7
37.5°	452.0	466.0	478.7	492.0	494.0
40°	431.3	446.7	460.7	474.7	477.3
42.5°	410.0	426.0	442.7	456.7	462.7
45°	386.0	405.3	424.7	439.3	444.7
47.5°	364.7	384.0	404.7	422.0	428.0
50°	342.0	362.0	386.7	403.3	409.3
52.5°	318.7	340.7	366.7	384.7	390.7
55°	295.3	320.0	347.3	366.0	372.7
57.5°	273.3	298.0	326.7	347.3	354.7
60°	248.7	276.0	306.0	327.3	335.3
62.5°	226.7	254.7	286.0	307.3	315.3
65°	202.7	232.7	264.0	287.3	294.7
67.5°	180.7	210.0	244.0	267.3	275.3
70°	157.3	188.0	222.0	246.0	254.7
72.5°	134.0	166.7	201.3	226.0	233.3
75°	111.3	145.3	180.7	205.3	213.3
77.5°	90.0	124.0	160.7	185.3	194.0
80°	68.7	104.0	142.0	166.7	175.3
82.5°	50.0	86.0	124.7	148.7	156.7
85°	34.0	69.3	108.0	132.7	141.3
87.5°	20.0	56.0	93.3	118.0	125.3
90°	9.3	44.0	81.3	106.0	113.3
92.5°	8.7	39.3	75.3	98.7	106.0
95°	7.3	36.0	70.7	93.3	100.7
97.5°	7.3	32.7	66.7	88.7	95.3
100°	6.7	29.3	62.7	83.3	90.0
102.5°	6.0	26.0	58.0	78.7	85.3
105°	5.3	23.3	54.0	74.0	80.0
107.5°	4.7	20.0	50.0	69.3	75.3
110°	4.7	17.3	46.0	64.7	70.7



TEST NUMBER: P243362

CATALOG NUMBER: S123DRP-H560D835-X4F0-XX-UDD-D-W

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	4.0	14.7	42.0	60.0	66.0
115°	3.3	12.0	38.0	55.3	61.3
117.5°	3.3	9.3	34.0	51.3	56.7
120°	3.3	7.3	30.7	46.7	52.0
122.5°	2.7	4.7	27.3	42.7	48.0
125°	2.7	2.7	23.3	38.0	43.3
127.5°	2.0	1.3	20.0	34.0	38.7
130°	2.0	1.3	16.7	30.0	34.7
132.5°	1.3	1.3	13.3	26.0	30.7
135°	1.3	0.7	10.0	22.0	26.0
137.5°	1.3	0.7	6.7	18.0	22.0
140°	0.7	0.7	3.3	14.0	18.0
142.5°	0.7	0.0	0.7	10.7	14.0
145°	0.7	0.0	0.0	6.7	9.3
147.5°	0.7	0.0	0.0	3.3	6.0
150°	0.7	0.0	0.0	0.0	2.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0



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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	16.15	17.65	16.64	18.14	18.66	18.22	19.72	18.71	20.20	20.73
	3H	17.70	19.07	18.21	19.57	20.13	20.61	21.98	21.12	22.48	23.04
	4H	18.23	19.53	18.75	20.04	20.61	21.73	23.03	22.25	23.54	24.11
	6H	18.57	19.78	19.11	20.30	20.89	22.85	24.06	23.39	24.59	25.18
	8H	18.65	19.81	19.20	20.36	20.96	23.42	24.58	23.97	25.12	25.72
	12H	18.70	19.81	19.26	20.35	20.98	24.03	25.15	24.59	25.69	26.31
4H	2H	17.06	18.36	17.59	18.87	19.45	18.67	19.97	19.19	20.48	21.05
	3H	18.87	19.97	19.40	20.52	21.12	21.28	22.38	21.82	22.94	23.54
	4H	19.53	20.55	20.09	21.11	21.74	22.55	23.57	23.11	24.13	24.76
	6H	20.01	20.90	20.58	21.49	22.13	23.86	24.75	24.43	25.34	25.98
	8H	20.14	20.98	20.72	21.57	22.22	24.51	25.35	25.10	25.94	26.60
	12H	20.23	20.99	20.83	21.60	22.26	25.24	26.01	25.85	26.62	27.28
8H	4H	20.18	21.02	20.76	21.61	22.26	22.78	23.62	23.36	24.20	24.86
	6H	20.84	21.55	21.45	22.18	22.84	24.24	24.95	24.85	25.58	26.24
	8H	21.07	21.71	21.70	22.35	23.02	25.02	25.66	25.65	26.30	26.98
	12H	21.24	21.81	21.87	22.44	23.18	25.92	26.49	26.55	27.12	27.86
12H	4H	20.34	21.10	20.95	21.72	22.38	22.79	23.55	23.39	24.17	24.83
	6H	21.08	21.73	21.71	22.37	23.04	24.28	24.92	24.90	25.56	26.23
	8H	21.41	21.98	22.04	22.61	23.35	25.13	25.70	25.76	26.33	27.07