

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: P242536

Luminaire Tested: S123RDRP-S560D835-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242536  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-25)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123RDRP-S560D835-X4F0-XX-UDD-F-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: -

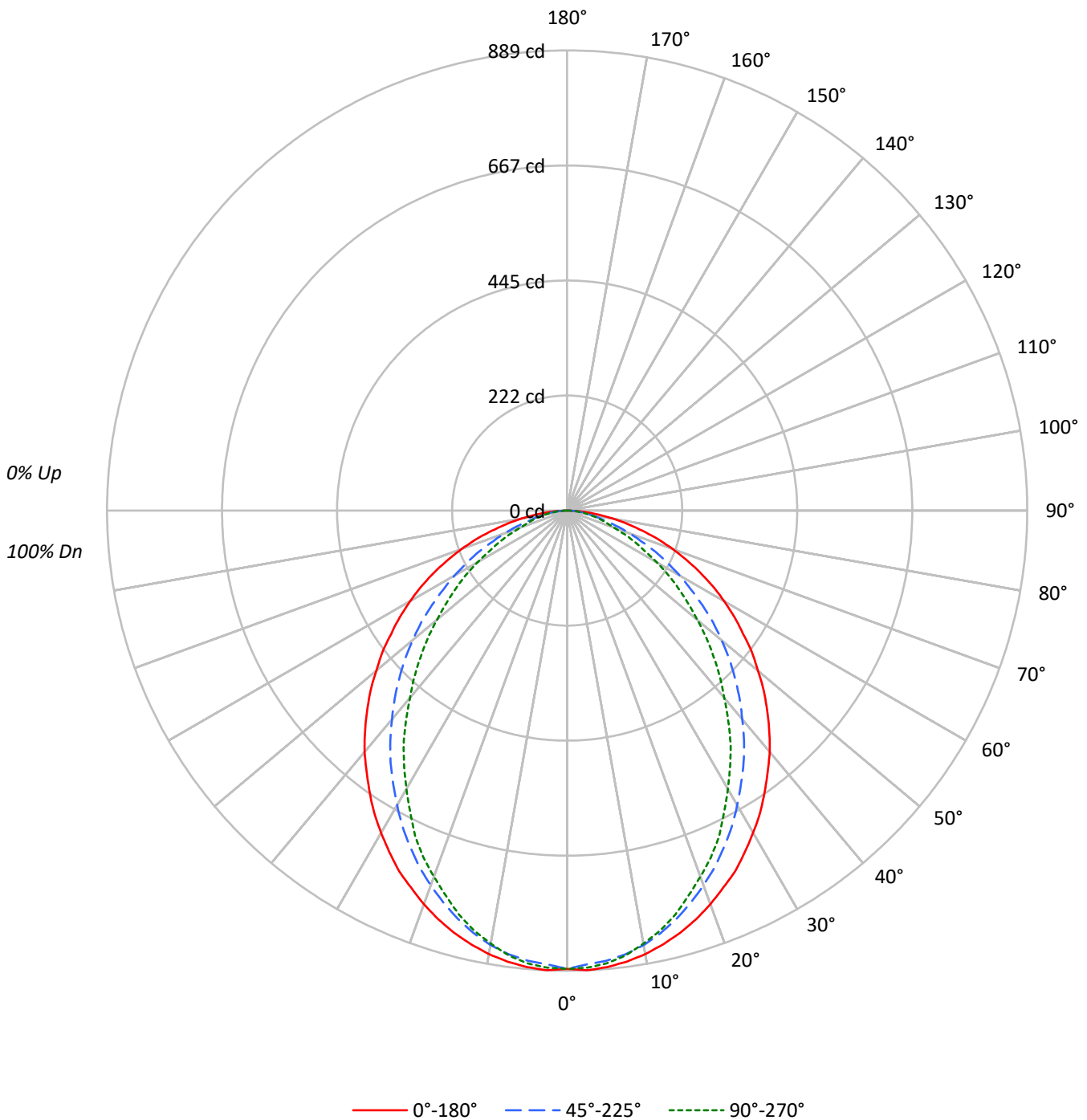
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2000.1 lumens  
Efficiency: N/A  
Efficacy: 106.4 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22  
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 18.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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	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																												
1	110	105	101	98	107	103	99	96	99	96	93	95	93	90	91	89	88	86																												
2	100	93	86	81	98	91	85	80	87	83	78	84	80	77	81	78	75	73																												
3	92	82	75	68	90	81	74	68	78	72	67	75	70	66	73	68	64	62																												
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56	54																												
5	78	66	57	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47																												
6	73	60	51	45	71	59	51	45	57	50	45	55	49	44	54	48	44	42																												
7	67	54	46	40	66	54	46	40	52	45	40	51	44	39	49	44	39	37																												
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35	34																												
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30																												
10	55	43	35	30	54	42	35	30	41	34	30	40	34	29	39	34	29	28																												

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10731	10731	10731
5°	10772	10623	10684
10°	10711	10490	10455
15°	10596	10245	10137
20°	10438	9937	9707
25°	10275	9593	9286
30°	10059	9196	8693
35°	9839	8797	8149
40°	9635	8328	7476
45°	9366	7865	6869
50°	9072	7339	6187
55°	8770	6737	5554
60°	8495	6092	4856
65°	8134	5395	4159
70°	7683	4529	3360
75°	7030	3564	3161
80°	6268	3155	2904
85°	5299	2795	2601

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9366 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	83.2	4.2
10°-20°	231.5	11.6
20°-30°	333.3	16.7
30°-40°	375.4	18.8
40°-50°	359.1	18.0
50°-60°	293.9	14.7
60°-70°	198.2	9.9
70°-80°	99.4	5.0
80°-90°	26.0	1.3
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°	648.1	32.4
0°-40°	1023.5	51.2
0°-60°	1676.5	83.8
0°-90°	2000.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2000.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	885	885	885	885	885	
5°	885	882	873	880	878	84
15°	844	836	816	813	808	238
25°	768	750	717	702	694	353
35°	665	639	594	564	551	416
45°	546	514	459	418	401	422
55°	415	380	319	277	263	372
65°	284	244	188	153	145	281
75°	150	116	76	69	68	160
85°	38	22	20	19	19	44
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	885.3	885.3	885.3	885.3	885.3
2.5°	888.9	886.0	877.4	885.3	883.9
5°	885.3	881.7	873.1	879.6	878.1
7.5°	878.9	875.3	864.5	868.8	866.7
10°	870.2	865.2	852.3	853.0	849.4
12.5°	858.0	852.3	835.8	835.1	830.8
15°	844.4	836.5	816.4	812.8	807.8
17.5°	827.9	819.3	794.1	787.0	779.8
20°	809.2	797.7	770.4	761.1	752.5
22.5°	788.4	774.8	745.3	733.1	725.2
25°	768.3	750.3	717.3	702.2	694.3
27.5°	743.9	724.5	688.6	668.5	656.3
30°	718.7	697.2	657.0	632.6	621.1
32.5°	693.6	668.5	625.4	598.1	585.9
35°	664.9	639.0	594.5	563.7	550.7
37.5°	636.2	608.2	561.5	527.0	511.2
40°	608.9	577.3	526.3	489.0	472.5
42.5°	578.0	546.4	493.3	451.6	437.3
45°	546.4	514.1	458.8	417.9	400.7
47.5°	515.5	479.6	425.1	380.6	365.5
50°	481.1	447.3	389.2	344.7	328.1
52.5°	450.2	412.9	355.4	308.8	294.4
55°	415.0	379.8	318.8	277.2	262.8
57.5°	383.4	345.4	283.6	244.1	231.9
60°	350.4	310.9	251.3	212.5	200.3
62.5°	317.4	277.9	218.3	182.4	169.5
65°	283.6	244.1	188.1	152.9	145.0
67.5°	249.9	209.7	155.1	128.5	119.9
70°	216.8	178.1	127.8	102.7	94.8
72.5°	183.8	145.8	101.2	81.9	79.7
75°	150.1	115.6	76.1	68.9	67.5
77.5°	119.2	87.6	59.6	55.3	53.9
80°	89.8	60.3	45.2	43.1	41.6
82.5°	61.8	37.3	32.3	30.2	30.2
85°	38.1	22.3	20.1	18.7	18.7
87.5°	17.2	9.3	9.3	8.6	7.9
90°	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	19.69	21.25	20.06	21.56	21.88	17.06	18.62	17.43	18.93	19.25
	3H	21.47	22.87	21.85	23.20	23.56	18.18	19.57	18.55	19.90	20.26
	4H	22.13	23.44	22.53	23.79	24.17	18.57	19.88	18.97	20.23	20.61
	6H	22.61	23.83	23.02	24.19	24.58	18.89	20.10	19.30	20.47	20.86
	8H	22.76	23.92	23.19	24.31	24.71	19.00	20.16	19.43	20.55	20.95
	12H	22.87	23.97	23.30	24.35	24.78	19.07	20.18	19.50	20.56	20.99
4H	2H	19.95	21.27	20.35	21.61	21.99	17.78	19.09	18.18	19.44	19.82
	3H	21.92	23.01	22.33	23.41	23.81	19.05	20.15	19.46	20.54	20.95
	4H	22.69	23.67	23.12	24.08	24.52	19.53	20.52	19.97	20.93	21.37
	6H	23.28	24.14	23.74	24.58	25.04	19.95	20.81	20.41	21.25	21.71
	8H	23.47	24.27	23.94	24.72	25.18	20.10	20.90	20.56	21.34	21.81
	12H	23.62	24.34	24.10	24.81	25.28	20.21	20.93	20.69	21.40	21.87
8H	4H	22.74	23.54	23.20	23.99	24.45	19.86	20.66	20.32	21.10	21.57
	6H	23.40	24.06	23.90	24.55	25.03	20.37	21.03	20.86	21.52	22.00
	8H	23.64	24.23	24.15	24.74	25.23	20.57	21.17	21.09	21.68	22.16
	12H	23.84	24.36	24.35	24.85	25.42	20.74	21.27	21.25	21.76	22.32
12H	4H	22.73	23.45	23.21	23.92	24.39	19.90	20.61	20.38	21.09	21.56
	6H	23.39	23.98	23.90	24.49	24.98	20.43	21.02	20.94	21.53	22.02
	8H	23.66	24.19	24.17	24.68	25.24	20.69	21.21	21.19	21.70	22.27