

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: P242545

Luminaire Tested: S123RDRP-S560D930-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242545  
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-S560D930-X4F0-XX-UDD-F-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

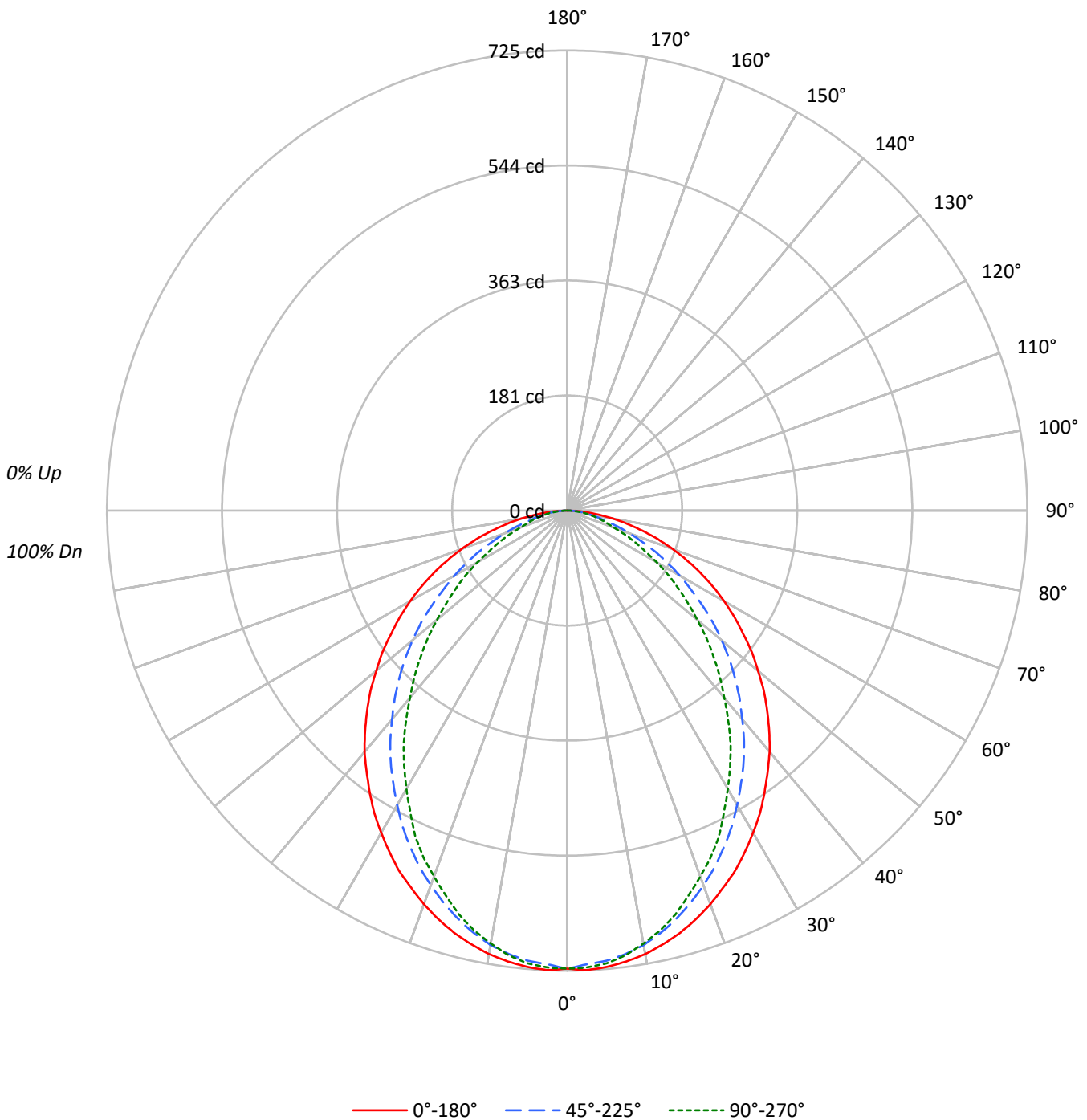
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1630.7 lumens  
Efficiency: N/A  
Efficacy: 86.7 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																		
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°	8749	8749	8749
5°	8783	8662	8712
10°	8733	8553	8523
15°	8639	8352	8265
20°	8511	8102	7914
25°	8378	7821	7571
30°	8202	7496	7088
35°	8022	7172	6644
40°	7855	6790	6095
45°	7637	6413	5600
50°	7396	5983	5044
55°	7151	5492	4529
60°	6926	4967	3959
65°	6631	4400	3393
70°	6266	3693	2740
75°	5732	2908	2576
80°	5110	2576	2373
85°	4311	2281	2114

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7637 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	67.9	4.2
10°-20°	188.8	11.6
20°-30°	271.8	16.7
30°-40°	306.1	18.8
40°-50°	292.8	18.0
50°-60°	239.7	14.7
60°-70°	161.6	9.9
70°-80°	81.0	5.0
80°-90°	21.2	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°	528.4	32.4
0°-40°	834.5	51.2
0°-60°	1366.9	83.8
0°-90°	1630.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1630.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	722	722	722	722	722	
5°	722	719	712	717	716	68
15°	688	682	666	663	659	194
25°	626	612	585	572	566	288
35°	542	521	485	460	449	339
45°	446	419	374	341	327	344
55°	338	310	260	226	214	303
65°	231	199	153	125	118	229
75°	122	94	62	56	55	130
85°	31	18	16	15	15	36
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	721.8	721.8	721.8	721.8	721.8
2.5°	724.7	722.4	715.4	721.8	720.6
5°	721.8	718.9	711.9	717.1	716.0
7.5°	716.5	713.6	704.8	708.3	706.6
10°	709.5	705.4	694.9	695.5	692.5
12.5°	699.6	694.9	681.4	680.8	677.3
15°	688.4	682.0	665.6	662.7	658.6
17.5°	675.0	667.9	647.5	641.6	635.8
20°	659.8	650.4	628.1	620.5	613.5
22.5°	642.8	631.7	607.7	597.7	591.3
25°	626.4	611.8	584.8	572.5	566.1
27.5°	606.5	590.7	561.4	545.0	535.1
30°	586.0	568.4	535.6	515.7	506.4
32.5°	565.5	545.0	509.9	487.6	477.7
35°	542.1	521.0	484.7	459.5	449.0
37.5°	518.7	495.8	457.8	429.7	416.8
40°	496.4	470.7	429.1	398.7	385.2
42.5°	471.3	445.5	402.2	368.2	356.5
45°	445.5	419.2	374.1	340.7	326.7
47.5°	420.3	391.1	346.6	310.3	298.0
50°	392.2	364.7	317.3	281.0	267.5
52.5°	367.1	336.6	289.8	251.7	240.0
55°	338.4	309.7	259.9	226.0	214.3
57.5°	312.6	281.6	231.2	199.0	189.1
60°	285.7	253.5	204.9	173.3	163.3
62.5°	258.7	226.6	178.0	148.7	138.2
65°	231.2	199.0	153.4	124.7	118.3
67.5°	203.7	170.9	126.4	104.8	97.8
70°	176.8	145.2	104.2	83.7	77.3
72.5°	149.9	118.8	82.5	66.7	65.0
75°	122.4	94.3	62.1	56.2	55.0
77.5°	97.2	71.4	48.6	45.1	43.9
80°	73.2	49.2	36.9	35.1	34.0
82.5°	50.3	30.4	26.3	24.6	24.6
85°	31.0	18.1	16.4	15.2	15.2
87.5°	14.0	7.6	7.6	7.0	6.4
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	18.98	20.54	19.35	20.85	21.17	16.35	17.91	16.72	18.22	18.54
	3H	20.76	22.16	21.14	22.49	22.85	17.47	18.86	17.84	19.19	19.55
	4H	21.42	22.73	21.82	23.08	23.46	17.86	19.17	18.26	19.52	19.90
	6H	21.90	23.12	22.31	23.48	23.87	18.18	19.39	18.59	19.76	20.15
	8H	22.05	23.21	22.48	23.60	24.00	18.29	19.45	18.72	19.84	20.24
	12H	22.16	23.26	22.59	23.64	24.07	18.36	19.47	18.79	19.85	20.28
4H	2H	19.24	20.56	19.64	20.90	21.28	17.07	18.38	17.47	18.73	19.11
	3H	21.21	22.30	21.62	22.70	23.10	18.34	19.44	18.75	19.84	20.24
	4H	21.98	22.96	22.41	23.37	23.81	18.82	19.81	19.26	20.22	20.66
	6H	22.57	23.43	23.03	23.87	24.33	19.24	20.10	19.70	20.54	21.00
	8H	22.76	23.56	23.23	24.01	24.47	19.39	20.19	19.85	20.63	21.10
	12H	22.91	23.63	23.39	24.10	24.57	19.50	20.22	19.98	20.69	21.16
8H	4H	22.03	22.83	22.49	23.28	23.74	19.15	19.95	19.61	20.39	20.86
	6H	22.69	23.36	23.19	23.85	24.32	19.66	20.32	20.16	20.81	21.29
	8H	22.93	23.52	23.44	24.03	24.52	19.86	20.46	20.38	20.97	21.45
	12H	23.13	23.65	23.64	24.14	24.71	20.03	20.56	20.54	21.05	21.61
12H	4H	22.02	22.74	22.50	23.22	23.69	19.19	19.91	19.67	20.38	20.85
	6H	22.68	23.28	23.19	23.78	24.27	19.72	20.32	20.23	20.82	21.31
	8H	22.95	23.48	23.46	23.97	24.53	19.98	20.50	20.48	20.99	21.56