

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: P242531

Luminaire Tested: S123RDRP-S560D830-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242531  
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-S560D830-X4F0-XX-UDD-F-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

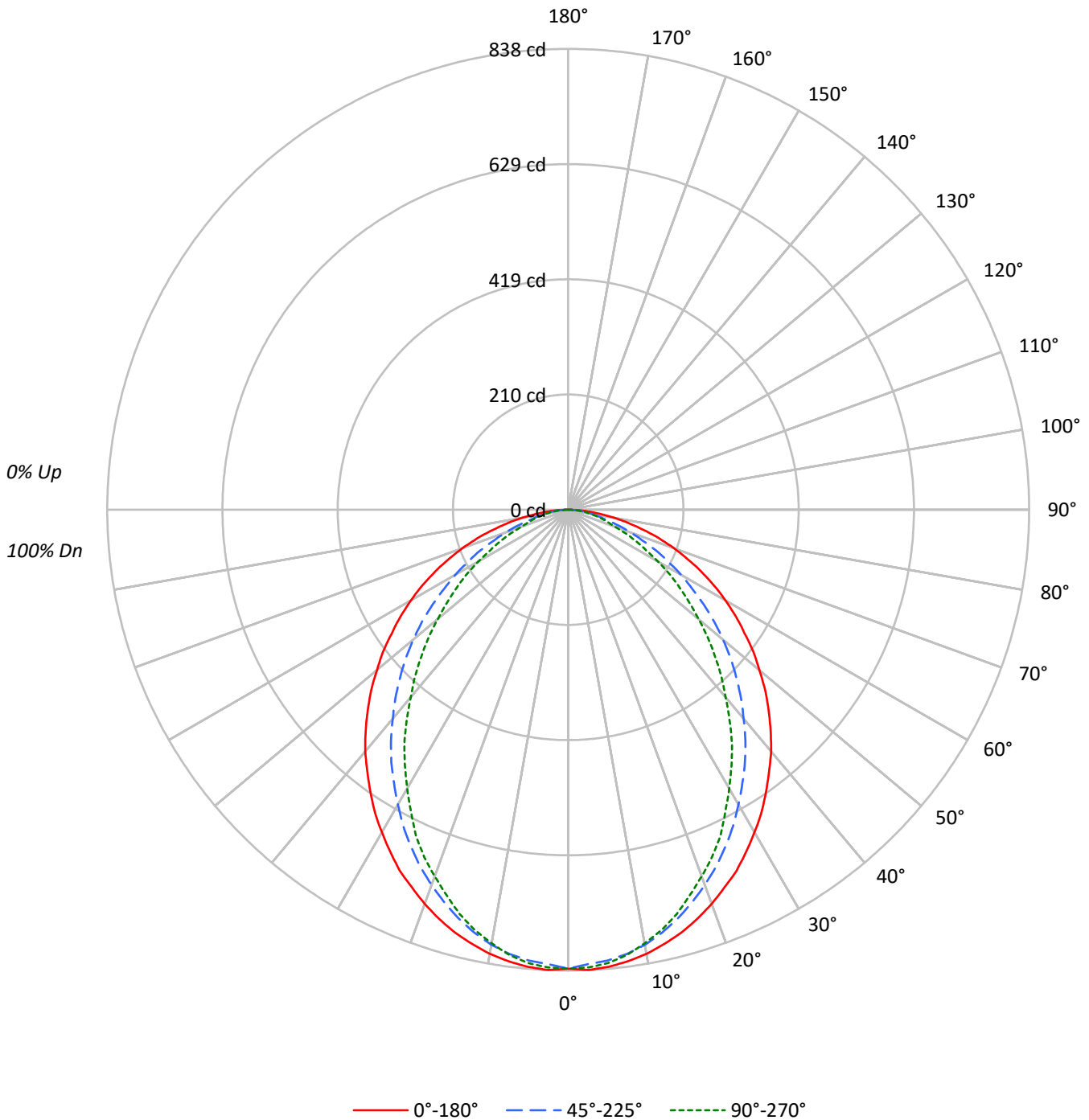
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1885.2 lumens  
Efficiency: N/A  
Efficacy: 100.3 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

TEST NUMBER: P242531

CATALOG NUMBER: S123RDRP-S560D830-X4F0-XX-UDD-F-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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	105	101	98	107	103	99	96	99	96	93	95	93	90	91	89	88	86				86
2	100	93	86	81	98	91	85	80	87	83	78	84	80	77	81	78	75	73				73
3	92	82	75	68	90	81	74	68	78	72	67	75	70	66	73	68	64	62				62
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56	54				54
5	78	66	57	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47				47
6	73	60	51	45	71	59	51	45	57	50	45	55	49	44	54	48	44	42				42
7	67	54	46	40	66	54	46	40	52	45	40	51	44	39	49	44	39	37				37
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35	34				34
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30				30
10	55	43	35	30	54	42	35	30	41	34	30	40	34	29	39	34	29	28				28

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

	0°	45°	90°
0°	10115	10115	10115
5°	10154	10014	10071
10°	10095	9887	9854
15°	9988	9656	9555
20°	9838	9367	9149
25°	9684	9042	8752
30°	9481	8667	8193
35°	9273	8292	7681
40°	9081	7850	7046
45°	8828	7414	6473
50°	8550	6917	5833
55°	8267	6350	5235
60°	8007	5743	4577
65°	7667	5085	3921
70°	7244	4271	3165
75°	6622	3358	2979
80°	5905	2974	2743
85°	4993	2629	2448

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8828 cd/sqm

TEST NUMBER: P242531

CATALOG NUMBER: S123RDRP-S560D830-X4F0-XX-UDD-F-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	78.4	4.2
10°-20°	218.2	11.6
20°-30°	314.2	16.7
30°-40°	353.8	18.8
40°-50°	338.5	18.0
50°-60°	277.1	14.7
60°-70°	186.8	9.9
70°-80°	93.7	5.0
80°-90°	24.5	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°	610.9	32.4
0°-40°	964.7	51.2
0°-60°	1580.2	83.8
0°-90°	1885.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1885.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	834	834	834	834	834	
5°	834	831	823	829	828	79
15°	796	788	770	766	761	224
25°	724	707	676	662	654	333
35°	627	602	560	531	519	392
45°	515	485	432	394	378	397
55°	391	358	300	261	248	351
65°	267	230	177	144	137	265
75°	141	109	72	65	64	151
85°	36	21	19	18	18	42
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	834.5	834.5	834.5	834.5	834.5
2.5°	837.8	835.1	827.0	834.5	833.1
5°	834.5	831.1	823.0	829.0	827.7
7.5°	828.4	825.0	814.8	818.9	816.9
10°	820.2	815.5	803.3	804.0	800.6
12.5°	808.7	803.3	787.8	787.1	783.0
15°	795.9	788.4	769.5	766.1	761.4
17.5°	780.3	772.2	748.5	741.7	735.0
20°	762.7	751.9	726.2	717.4	709.3
22.5°	743.1	730.2	702.5	691.0	683.5
25°	724.1	707.2	676.1	661.9	654.4
27.5°	701.1	682.9	649.0	630.1	618.6
30°	677.4	657.1	619.2	596.2	585.4
32.5°	653.8	630.1	589.5	563.8	552.2
35°	626.7	602.3	560.4	531.3	519.1
37.5°	599.6	573.2	529.2	496.7	481.9
40°	573.9	544.1	496.1	460.9	445.3
42.5°	544.8	515.0	464.9	425.7	412.2
45°	515.0	484.6	432.5	393.9	377.6
47.5°	485.9	452.1	400.6	358.7	344.5
50°	453.4	421.6	366.8	324.9	309.3
52.5°	424.3	389.1	335.0	291.0	277.5
55°	391.2	358.0	300.5	261.2	247.7
57.5°	361.4	325.5	267.3	230.1	218.6
60°	330.3	293.0	236.9	200.3	188.8
62.5°	299.1	261.9	205.7	171.9	159.7
65°	267.3	230.1	177.3	144.2	136.7
67.5°	235.5	197.6	146.2	121.1	113.0
70°	204.4	167.8	120.5	96.8	89.3
72.5°	173.3	137.4	95.4	77.2	75.1
75°	141.4	109.0	71.7	65.0	63.6
77.5°	112.3	82.6	56.2	52.1	50.8
80°	84.6	56.8	42.6	40.6	39.3
82.5°	58.2	35.2	30.5	28.4	28.4
85°	35.9	21.0	18.9	17.6	17.6
87.5°	16.2	8.8	8.8	8.1	7.4
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	19.49	21.04	19.85	21.36	21.67	16.86	18.41	17.22	18.73	19.04
	3H	21.26	22.66	21.64	22.99	23.35	17.97	19.37	18.35	19.69	20.06
	4H	21.92	23.24	22.32	23.59	23.96	18.36	19.68	18.76	20.03	20.40
	6H	22.41	23.62	22.82	23.98	24.38	18.68	19.90	19.10	20.26	20.65
	8H	22.56	23.71	22.98	24.10	24.50	18.79	19.95	19.22	20.34	20.74
	12H	22.66	23.77	23.09	24.15	24.58	18.87	19.98	19.30	20.36	20.79
4H	2H	19.75	21.06	20.15	21.41	21.79	17.57	18.88	17.97	19.23	19.61
	3H	21.71	22.80	22.12	23.20	23.60	18.85	19.94	19.26	20.34	20.74
	4H	22.48	23.46	22.91	23.88	24.32	19.33	20.31	19.76	20.73	21.16
	6H	23.08	23.93	23.53	24.37	24.83	19.75	20.60	20.20	21.05	21.50
	8H	23.27	24.07	23.73	24.51	24.98	19.89	20.69	20.36	21.14	21.60
	12H	23.41	24.13	23.90	24.61	25.08	20.00	20.72	20.49	21.20	21.67
8H	4H	22.54	23.34	23.00	23.78	24.25	19.65	20.45	20.11	20.89	21.36
	6H	23.20	23.86	23.69	24.35	24.83	20.16	20.83	20.66	21.32	21.79
	8H	23.43	24.02	23.94	24.53	25.02	20.37	20.96	20.88	21.47	21.96
	12H	23.63	24.16	24.14	24.65	25.21	20.54	21.06	21.05	21.55	22.12
12H	4H	22.52	23.24	23.01	23.72	24.19	19.69	20.41	20.18	20.89	21.36
	6H	23.18	23.78	23.70	24.29	24.77	20.22	20.82	20.74	21.33	21.82
	8H	23.45	23.98	23.96	24.47	25.03	20.48	21.00	20.99	21.50	22.06