

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: P242511

Luminaire Tested: S123DRP-S560D930-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242511  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-15)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DRP-S560D930-X4F0-XX-UDD-D-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

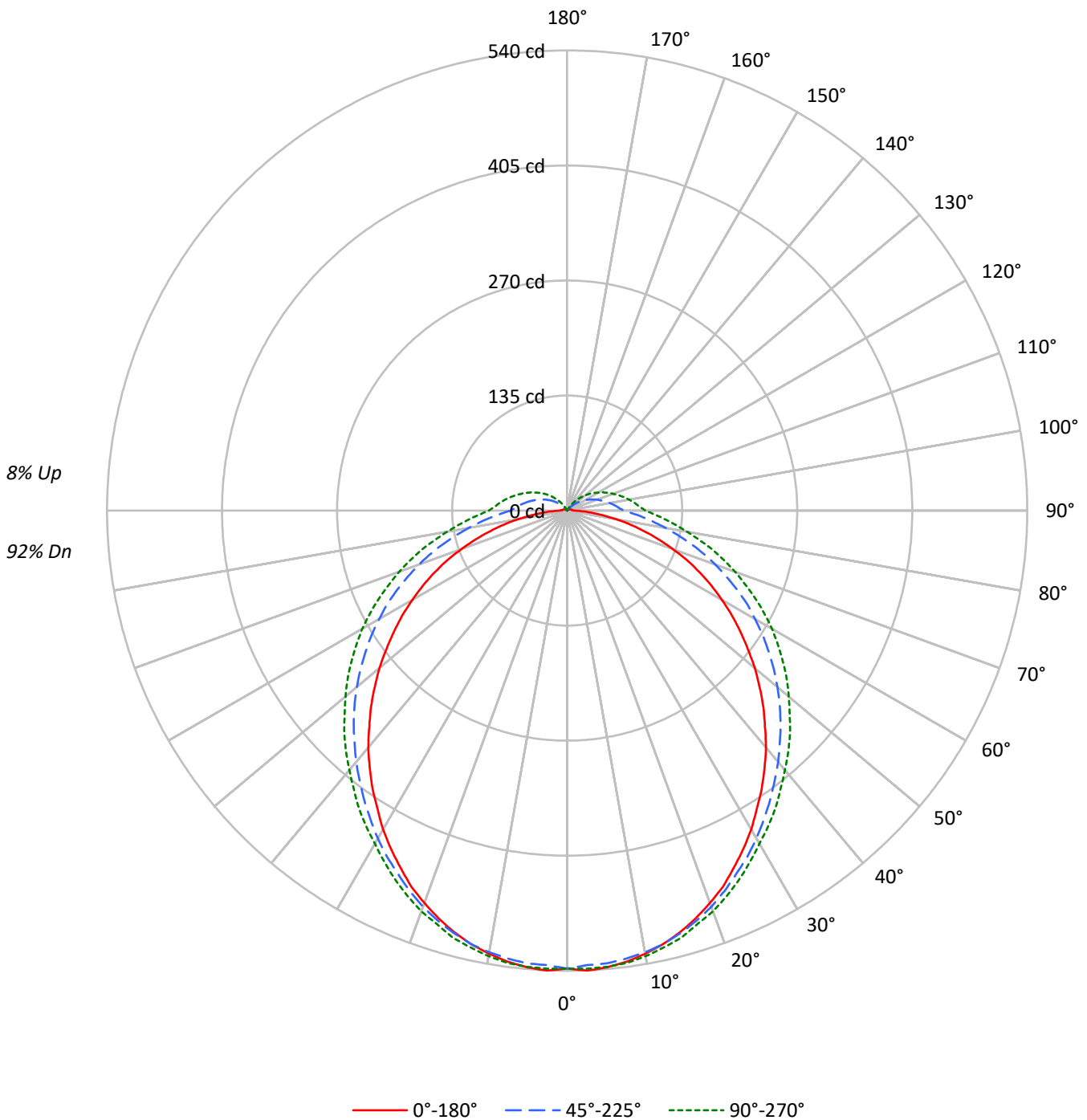
Lumens per Lamp: N/A  
Luminaire Lumens: 1806.1 lumens  
Efficiency: N/A  
Efficacy: 96.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')  
CIE Type: Direct

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: P242511

CATALOG NUMBER: S123DRP-S560D930-X4F0-XX-UDD-D-W

### Luminous Intensity Polar Plot





TEST NUMBER: P242511

CATALOG NUMBER: S123DRP-S560D930-X4F0-XX-UDD-D-W

**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	0
RCR																		
0	117	117	117	117	113	113	113	113	106	106	106	100	100	100	94	94	94	92
1	105	100	95	90	102	97	92	88	91	87	84	85	82	80	80	78	76	73
2	95	86	79	72	92	83	77	71	79	73	68	74	69	65	70	66	63	60
3	86	75	67	60	83	73	65	59	69	62	56	65	59	54	61	56	52	50
4	79	66	57	50	76	64	56	49	61	54	48	57	51	46	54	49	45	42
5	72	59	50	43	70	58	49	42	54	47	41	52	45	40	49	43	39	36
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	44	38	34	32
7	62	48	39	33	60	47	38	32	45	37	32	42	36	31	40	35	30	28
8	58	44	35	29	56	43	35	29	41	33	28	39	32	28	37	31	27	25
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	22
10	50	37	29	24	49	36	29	24	35	28	23	33	27	23	32	26	22	20

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

	0°	45°	90°
0°	6514	6514	6514
5°	6534	6338	6337
10°	6474	6181	6142
15°	6391	6004	5931
20°	6271	5806	5701
25°	6124	5579	5463
30°	5972	5374	5221
35°	5803	5159	5027
40°	5642	4961	4819
45°	5462	4772	4651
50°	5284	4584	4467
55°	5089	4391	4299
60°	4899	4196	4128
65°	4702	3985	3924
70°	4407	3750	3716
75°	4036	3482	3501
80°	3609	3212	3255
85°	3204	3010	3094

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5462 cd/sqm



TEST NUMBER: P242511

CATALOG NUMBER: S123DRP-S560D930-X4F0-XX-UDD-D-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	51.0	2.8
10°-20°	145.3	8.0
20°-30°	217.3	12.0
30°-40°	259.5	14.4
40°-50°	271.5	15.0
50°-60°	254.8	14.1
60°-70°	212.8	11.8
70°-80°	152.2	8.4
80°-90°	90.5	5.0
90°-100°	56.9	3.2
100°-110°	41.8	2.3
110°-120°	27.9	1.5
120°-130°	15.9	0.9
130°-140°	7.2	0.4
140°-150°	1.5	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	413.6	22.9
0°-40°	673.1	37.3
0°-60°	1199.4	66.4
0°-90°	1654.9	91.6
90°-120°	126.7	7.0
90°-150°	151.2	8.4
90°-180°	151.0	8.4
0°-180°	1806.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	537	537	537	537	537	
5°	538	537	533	538	537	51
15°	512	514	513	519	519	144
25°	462	468	470	478	478	213
35°	398	407	415	424	426	249
45°	326	340	354	365	370	251
55°	248	268	289	304	309	222
65°	172	194	220	238	244	170
75°	93	121	150	169	176	99
85°	29	58	89	109	115	30
90°	8	36	66	86	92	5
95°	6	29	58	76	82	5
105°	5	19	44	60	66	5
115°	3	10	31	45	50	3
125°	2	2	19	31	35	2
135°	1	1	7	18	20	1
145°	1	0	0	5	7	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



TEST NUMBER: P242511

CATALOG NUMBER: S123DRP-S560D930-X4F0-XX-UDD-D-W

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	537.4	537.4	537.4	537.4	537.4
2.5°	540.3	538.6	533.9	538.6	538.0
5°	538.0	536.8	533.3	538.0	537.4
7.5°	533.9	533.9	530.4	536.2	535.6
10°	528.0	529.2	526.3	532.1	531.0
12.5°	521.0	522.8	521.0	526.3	525.1
15°	512.2	514.0	513.4	519.3	518.7
17.5°	501.7	505.2	504.6	509.9	508.7
20°	490.0	493.5	494.7	499.9	500.5
22.5°	477.7	481.2	483.0	490.0	489.4
25°	462.5	468.3	470.1	477.7	477.7
27.5°	447.8	454.3	457.8	464.2	464.8
30°	432.0	439.6	444.3	451.3	451.3
32.5°	414.5	423.2	429.7	437.3	439.1
35°	398.1	407.4	415.1	423.8	426.2
37.5°	380.5	391.1	399.8	409.8	411.5
40°	363.0	373.5	385.2	395.1	397.5
42.5°	343.6	357.1	369.4	380.5	384.0
45°	325.5	339.5	354.2	365.3	370.0
47.5°	306.2	322.0	338.4	350.7	354.2
50°	287.4	303.8	322.0	335.4	339.5
52.5°	267.5	285.1	305.6	319.6	324.9
55°	248.2	267.5	288.6	304.4	309.1
57.5°	229.5	249.4	272.2	288.0	293.3
60°	209.6	230.7	254.7	271.0	277.5
62.5°	190.8	212.5	238.3	254.7	260.5
65°	171.5	194.4	220.1	237.7	243.5
67.5°	152.2	176.2	202.0	221.3	226.0
70°	131.7	156.9	185.0	203.7	209.6
72.5°	113.0	138.2	167.4	186.7	192.6
75°	93.1	120.6	149.9	169.2	176.2
77.5°	76.1	103.6	132.9	153.4	158.6
80°	58.0	86.6	117.1	137.0	142.8
82.5°	42.1	71.4	102.4	122.3	128.2
85°	28.7	58.0	89.0	108.9	114.7
87.5°	17.6	46.8	76.7	96.6	102.4
90°	7.6	36.3	66.2	86.1	91.9
92.5°	7.0	32.2	61.5	80.8	86.1
95°	6.4	29.3	58.0	76.1	82.0
97.5°	5.9	26.9	54.4	72.0	77.9
100°	5.3	24.0	50.9	67.9	73.8
102.5°	4.7	21.1	47.4	63.8	69.7
105°	4.7	18.7	43.9	60.3	65.6
107.5°	4.1	16.4	40.4	56.2	61.5
110°	3.5	14.0	37.5	52.7	57.4



TEST NUMBER: P242511

CATALOG NUMBER: S123DRP-S560D930-X4F0-XX-UDD-D-W

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	3.5	11.7	34.0	48.6	53.9
115°	2.9	10.0	31.0	45.1	49.8
117.5°	2.9	7.6	27.5	41.6	46.2
120°	2.3	5.3	24.6	38.1	42.1
122.5°	2.3	3.5	21.7	34.5	38.6
125°	1.8	1.8	18.7	31.0	35.1
127.5°	1.8	1.2	15.8	27.5	31.6
130°	1.8	1.2	12.9	24.0	27.5
132.5°	1.2	1.2	10.0	20.5	24.6
135°	1.2	0.6	7.0	17.6	20.5
137.5°	1.2	0.6	4.7	14.0	17.0
140°	0.6	0.6	2.3	11.1	14.0
142.5°	0.6	0.0	0.0	7.6	10.5
145°	0.6	0.0	0.0	4.7	7.0
147.5°	0.0	0.0	0.0	1.8	4.1
150°	0.0	0.0	0.0	0.0	1.2
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

TEST NUMBER: P242511  
 CATALOG NUMBER: S123DRP-S560D930-X4F0-XX-UDD-D-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	15.56	17.07	16.05	17.55	18.07	17.56	19.06	18.05	19.55	20.06
	3H	17.12	18.49	17.62	18.98	19.54	19.94	21.31	20.44	21.80	22.36
	4H	17.64	18.94	18.16	19.45	20.02	21.05	22.35	21.57	22.86	23.43
	6H	17.99	19.20	18.52	19.72	20.30	22.16	23.37	22.69	23.89	24.47
	8H	18.07	19.23	18.62	19.78	20.37	22.71	23.87	23.26	24.42	25.01
	12H	18.12	19.23	18.68	19.77	20.39	23.32	24.43	23.87	24.97	25.59
4H	2H	16.47	17.77	16.99	18.28	18.85	18.02	19.32	18.54	19.83	20.40
	3H	18.27	19.38	18.81	19.93	20.52	20.61	21.72	21.15	22.27	22.86
	4H	18.94	19.95	19.49	20.51	21.13	21.88	22.89	22.44	23.45	24.08
	6H	19.41	20.30	19.99	20.89	21.53	23.16	24.06	23.74	24.64	25.28
	8H	19.55	20.39	20.13	20.97	21.62	23.81	24.65	24.39	25.24	25.89
	12H	19.63	20.39	20.23	21.01	21.66	24.53	25.29	25.13	25.91	26.56
8H	4H	19.57	20.41	20.15	21.00	21.65	22.11	22.95	22.69	23.53	24.18
	6H	20.23	20.94	20.84	21.56	22.22	23.55	24.26	24.16	24.88	25.54
	8H	20.46	21.10	21.08	21.74	22.40	24.32	24.96	24.95	25.60	26.27
	12H	20.63	21.20	21.26	21.83	22.56	25.20	25.78	25.83	26.40	27.14
12H	4H	19.72	20.49	20.33	21.10	21.76	22.12	22.88	22.72	23.49	24.15
	6H	20.47	21.11	21.09	21.75	22.41	23.59	24.23	24.21	24.87	25.53
	8H	20.79	21.36	21.42	21.99	22.72	24.43	25.00	25.06	25.63	26.36