

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: P243296

Luminaire Tested: S123DRP-H340D840-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243296  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-49)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DRP-H340D840-X4F0-XX-UDD-F-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

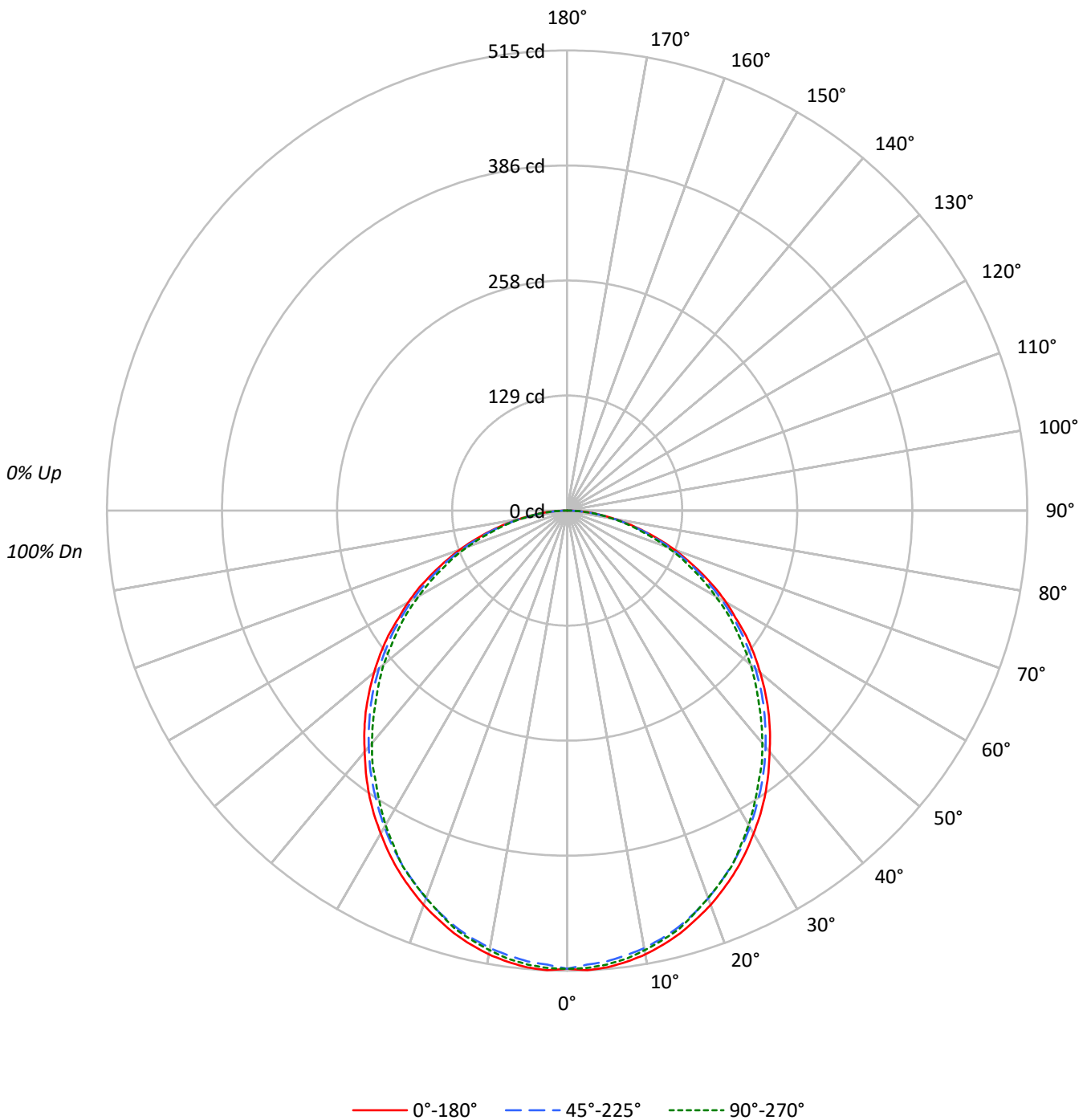
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1356.6 lumens  
Efficiency: N/A  
Efficacy: 121.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.2  
Input Voltage (V): 120  
Input Current (Ain): 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	100	96	106	102	98	94	97	94	91	94	91	89	90	88	86	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	75	72	70
3	90	80	72	65	88	78	71	65	75	69	64	73	67	62	70	65	61	59
4	83	71	62	55	80	70	61	55	67	60	54	65	59	54	63	57	53	51
5	76	63	54	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44
6	70	57	48	42	69	56	48	42	54	47	41	53	46	41	51	45	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	33	43	37	32	30
9	57	44	35	30	56	43	35	30	42	35	30	41	34	29	40	34	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

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

	0°	45°	90°
0°	6216	6216	6216
5°	6244	6163	6204
10°	6208	6120	6150
15°	6144	6054	6080
20°	6059	5956	5949
25°	5960	5846	5853
30°	5841	5727	5687
35°	5724	5599	5518
40°	5579	5465	5378
45°	5465	5335	5196
50°	5318	5182	5054
55°	5165	5030	4861
60°	4982	4848	4652
65°	4764	4621	4426
70°	4526	4373	4196
75°	4196	4079	3859
80°	3776	3686	3574
85°	3533	3352	3240

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5465 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	48.4	3.6
10°-20°	136.8	10.1
20°-30°	202.6	14.9
30°-40°	237.6	17.5
40°-50°	240.2	17.7
50°-60°	212.4	15.7
60°-70°	159.5	11.8
70°-80°	91.9	6.8
80°-90°	27.3	2.0
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°	387.8	28.6
0°-40°	625.3	46.1
0°-60°	1077.9	79.5
0°-90°	1356.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1356.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	513	513	513	513	513	
5°	513	511	506	511	510	49
15°	490	487	482	486	484	138
25°	446	442	437	439	438	205
35°	387	383	378	377	373	242
45°	319	316	311	307	303	246
55°	244	243	238	233	230	218
65°	166	165	161	157	154	165
75°	90	89	87	85	82	95
85°	25	25	24	24	23	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	512.8	512.8	512.8	512.8	512.8
2.5°	514.9	513.2	508.6	513.2	512.4
5°	513.2	511.1	506.5	510.7	509.9
7.5°	509.4	507.3	502.2	506.9	506.0
10°	504.4	502.2	497.2	501.0	499.7
12.5°	497.6	495.5	490.4	493.4	492.5
15°	489.6	487.0	482.4	485.8	484.5
17.5°	479.8	477.7	472.6	476.9	473.1
20°	469.7	467.6	461.7	465.5	461.2
22.5°	457.9	455.3	449.4	451.9	449.8
25°	445.6	442.2	437.1	439.2	437.6
27.5°	432.1	428.7	423.6	424.5	421.5
30°	417.3	414.3	409.2	410.1	406.3
32.5°	402.5	399.9	393.6	393.6	389.8
35°	386.8	383.4	378.4	377.1	372.9
37.5°	369.9	367.0	362.3	360.2	357.7
40°	352.6	350.9	345.4	342.9	339.9
42.5°	336.1	333.1	328.5	325.1	321.7
45°	318.8	316.2	311.2	306.9	303.1
47.5°	300.6	298.5	293.4	288.7	285.8
50°	282.0	280.3	274.8	269.7	268.0
52.5°	263.8	261.7	256.2	251.5	248.2
55°	244.4	242.7	238.0	233.4	230.0
57.5°	223.6	223.6	218.6	214.3	211.8
60°	205.5	203.3	200.0	195.3	191.9
62.5°	186.4	185.2	180.5	175.9	173.3
65°	166.1	164.9	161.1	156.8	154.3
67.5°	146.3	145.9	142.5	139.1	137.4
70°	127.7	126.8	123.4	120.1	118.4
72.5°	108.6	107.8	104.8	101.9	99.8
75°	89.6	88.8	87.1	84.6	82.4
77.5°	71.0	71.0	68.9	68.1	67.2
80°	54.1	53.7	52.8	52.0	51.2
82.5°	38.9	38.5	37.6	37.2	37.2
85°	25.4	24.9	24.1	23.7	23.3
87.5°	13.1	12.3	11.8	11.0	10.6
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	17.80	19.42	18.16	19.74	20.05	17.49	19.11	17.85	19.43	19.74
	3H	19.60	21.07	19.97	21.39	21.75	19.24	20.71	19.62	21.04	21.40
	4H	20.27	21.66	20.67	22.01	22.38	19.89	21.28	20.29	21.62	22.00
	6H	20.77	22.05	21.18	22.42	22.81	20.39	21.68	20.80	22.04	22.43
	8H	20.94	22.16	21.36	22.55	22.95	20.56	21.79	20.99	22.18	22.58
	12H	21.06	22.24	21.49	22.62	23.05	20.69	21.86	21.11	22.24	22.67
4H	2H	18.39	19.77	18.79	20.12	20.50	18.14	19.53	18.54	19.88	20.25
	3H	20.41	21.58	20.82	21.97	22.37	20.12	21.28	20.53	21.68	22.08
	4H	21.22	22.27	21.66	22.69	23.12	20.90	21.95	21.33	22.36	22.80
	6H	21.85	22.77	22.31	23.21	23.67	21.53	22.45	21.98	22.89	23.34
	8H	22.07	22.93	22.53	23.38	23.84	21.75	22.61	22.21	23.05	23.52
	12H	22.25	23.02	22.73	23.50	23.96	21.92	22.69	22.40	23.17	23.64
8H	4H	21.52	22.38	21.98	22.82	23.29	21.23	22.09	21.69	22.53	23.00
	6H	22.27	22.99	22.77	23.48	23.95	21.99	22.70	22.48	23.19	23.67
	8H	22.57	23.21	23.08	23.72	24.20	22.29	22.93	22.79	23.43	23.92
	12H	22.83	23.40	23.33	23.89	24.45	22.54	23.10	23.04	23.59	24.15
12H	4H	21.55	22.32	22.03	22.80	23.27	21.27	22.04	21.75	22.52	22.99
	6H	22.33	22.97	22.84	23.48	23.96	22.05	22.70	22.56	23.20	23.69
	8H	22.68	23.25	23.19	23.74	24.30	22.41	22.98	22.92	23.47	24.03