

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: P242451

Luminaire Tested: S123DRP-S340D940-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242451  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-11)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DRP-S340D940-X4F0-XX-UDD-F-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

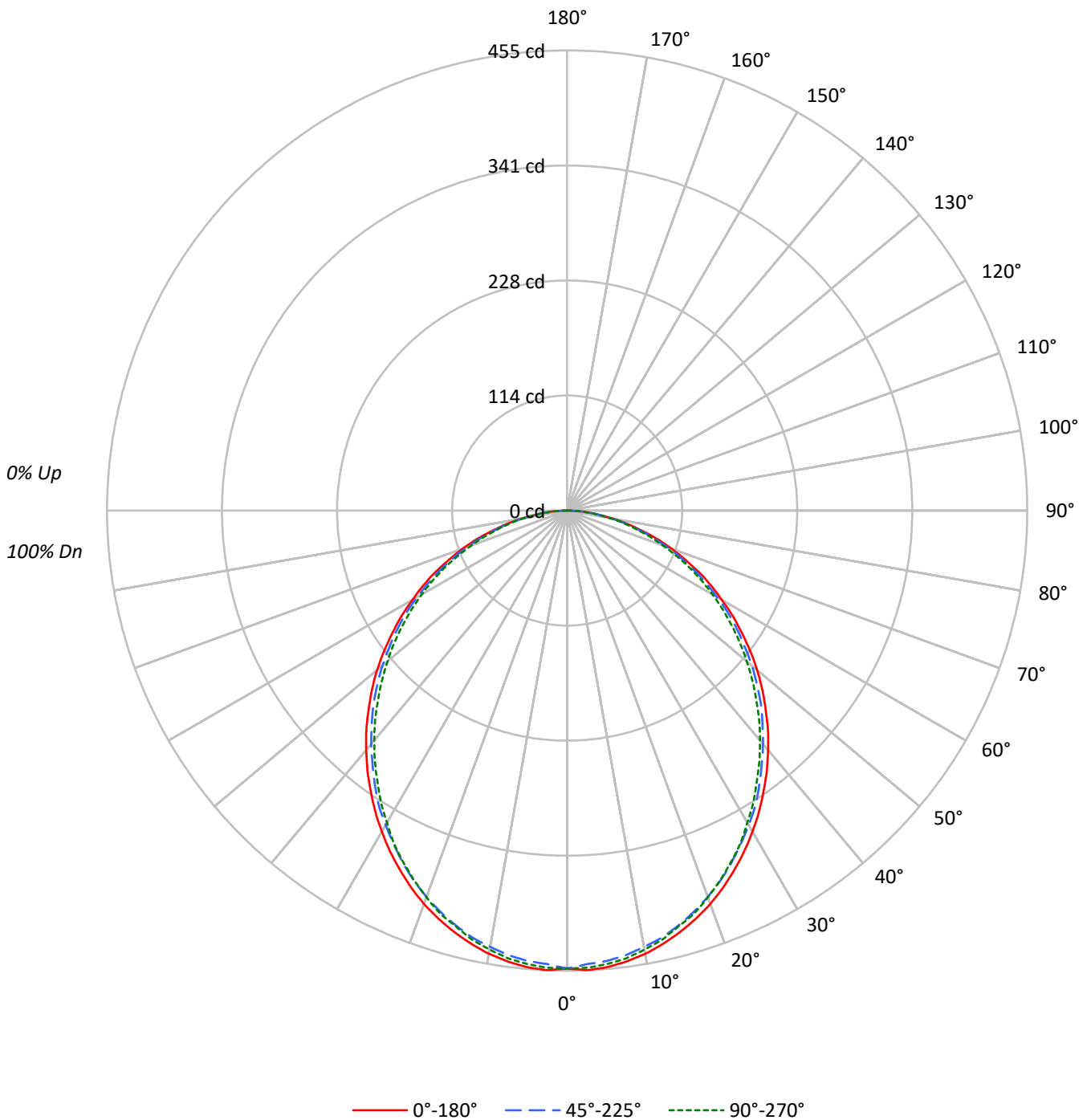
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1178.5 lumens  
Efficiency: N/A  
Efficacy: 101.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.3  
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.6  
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	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	95	98	94	92	94	91	89	90	88	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	59
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	58	53	51
5	76	64	55	48	74	63	54	48	60	53	47	58	52	47	57	51	46	44
6	71	57	49	42	69	56	48	42	55	47	42	53	46	41	51	46	41	39
7	66	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36	34
8	61	48	39	33	60	47	39	33	46	38	33	44	38	33	43	37	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	28
10	54	40	33	27	52	40	32	27	39	32	27	38	32	27	37	31	27	25

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

	0°	45°	90°
0°	5488	5488	5488
5°	5514	5439	5477
10°	5477	5391	5424
15°	5414	5331	5341
20°	5339	5243	5249
25°	5239	5140	5129
30°	5128	5025	4986
35°	5012	4902	4839
40°	4891	4769	4695
45°	4759	4645	4532
50°	4626	4494	4369
55°	4451	4336	4205
60°	4276	4153	4022
65°	4121	3952	3829
70°	3891	3725	3562
75°	3555	3428	3283
80°	3204	3071	3043
85°	2809	2712	2601

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4759 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	42.7	3.6
10°-20°	120.5	10.2
20°-30°	178.0	15.1
30°-40°	207.9	17.6
40°-50°	209.0	17.7
50°-60°	183.6	15.6
60°-70°	136.7	11.6
70°-80°	77.8	6.6
80°-90°	22.1	1.9
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°	341.2	29.0
0°-40°	549.1	46.6
0°-60°	941.8	79.9
0°-90°	1178.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1178.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	453	453	453	453	453	
5°	453	451	447	451	450	43
15°	431	430	425	428	426	122
25°	392	389	384	385	384	180
35°	339	336	331	329	327	212
45°	278	276	271	266	264	214
55°	211	210	205	201	199	189
65°	144	142	138	135	134	142
75°	76	74	73	71	70	81
85°	20	20	20	19	19	23
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	452.8	452.8	452.8	452.8	452.8
2.5°	454.8	453.2	448.9	452.8	452.4
5°	453.2	451.2	447.0	450.9	450.1
7.5°	449.7	447.7	443.5	447.0	446.6
10°	445.0	443.1	438.0	441.5	440.7
12.5°	438.8	437.2	432.6	434.9	434.5
15°	431.4	429.8	424.8	427.9	425.6
17.5°	423.2	421.3	416.2	418.5	417.8
20°	413.9	411.5	406.5	408.0	406.9
22.5°	403.4	401.0	396.0	397.1	395.6
25°	391.7	389.3	384.3	384.7	383.5
27.5°	379.6	377.3	371.8	372.2	371.0
30°	366.4	364.4	359.0	359.0	356.2
32.5°	353.1	350.4	346.5	343.8	342.6
35°	338.7	336.4	331.3	329.0	327.0
37.5°	324.3	321.2	316.1	313.4	312.3
40°	309.1	306.8	301.4	298.2	296.7
42.5°	294.0	291.2	285.8	282.7	281.1
45°	277.6	276.0	271.0	266.3	264.4
47.5°	261.6	259.3	254.6	250.0	248.4
50°	245.3	243.3	238.3	234.0	231.7
52.5°	228.2	227.0	221.5	218.0	215.7
55°	210.6	210.2	205.2	200.9	199.0
57.5°	194.3	192.7	188.8	184.9	182.6
60°	176.4	176.0	171.3	167.8	165.9
62.5°	160.4	159.2	154.6	151.1	149.9
65°	143.7	141.7	137.8	134.7	133.5
67.5°	125.8	124.2	121.1	118.4	116.8
70°	109.8	107.5	105.1	102.4	100.5
72.5°	93.1	91.5	88.8	86.4	85.7
75°	75.9	74.4	73.2	71.2	70.1
77.5°	60.7	60.0	58.4	56.8	56.8
80°	45.9	44.8	44.0	43.6	43.6
82.5°	31.5	31.5	31.5	30.8	30.4
85°	20.2	19.5	19.5	18.7	18.7
87.5°	10.1	9.0	8.6	8.2	8.2
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	17.27	18.89	17.64	19.21	19.52	16.96	18.58	17.32	18.89	19.20
	3H	19.04	20.51	19.42	20.83	21.19	18.67	20.14	19.05	20.46	20.82
	4H	19.70	21.08	20.10	21.43	21.80	19.31	20.69	19.71	21.04	21.41
	6H	20.19	21.47	20.60	21.83	22.22	19.80	21.07	20.21	21.44	21.83
	8H	20.34	21.56	20.77	21.95	22.35	19.96	21.18	20.38	21.57	21.96
	12H	20.45	21.62	20.88	22.00	22.43	20.06	21.23	20.49	21.61	22.04
4H	2H	17.85	19.23	18.25	19.58	19.95	17.60	18.98	18.00	19.33	19.70
	3H	19.85	21.00	20.26	21.40	21.80	19.54	20.69	19.95	21.09	21.49
	4H	20.63	21.67	21.06	22.09	22.52	20.30	21.34	20.73	21.76	22.19
	6H	21.25	22.16	21.70	22.60	23.06	20.91	21.82	21.37	22.27	22.72
	8H	21.45	22.30	21.91	22.75	23.21	21.12	21.97	21.58	22.42	22.88
	12H	21.60	22.37	22.08	22.84	23.31	21.27	22.04	21.75	22.51	22.98
8H	4H	20.92	21.77	21.38	22.21	22.68	20.62	21.48	21.08	21.92	22.38
	6H	21.65	22.36	22.15	22.85	23.32	21.36	22.07	21.85	22.56	23.03
	8H	21.93	22.56	22.44	23.07	23.56	21.64	22.28	22.15	22.78	23.27
	12H	22.15	22.72	22.66	23.21	23.77	21.86	22.43	22.37	22.92	23.48
12H	4H	20.94	21.71	21.42	22.19	22.66	20.66	21.43	21.14	21.90	22.37
	6H	21.70	22.34	22.21	22.85	23.33	21.42	22.06	21.93	22.56	23.05
	8H	22.03	22.60	22.54	23.09	23.65	21.76	22.32	22.27	22.81	23.37