

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: P243311

Luminaire Tested: S123DRP-H340D940-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243311  
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-H340D940-X4F0-XX-UDD-F-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

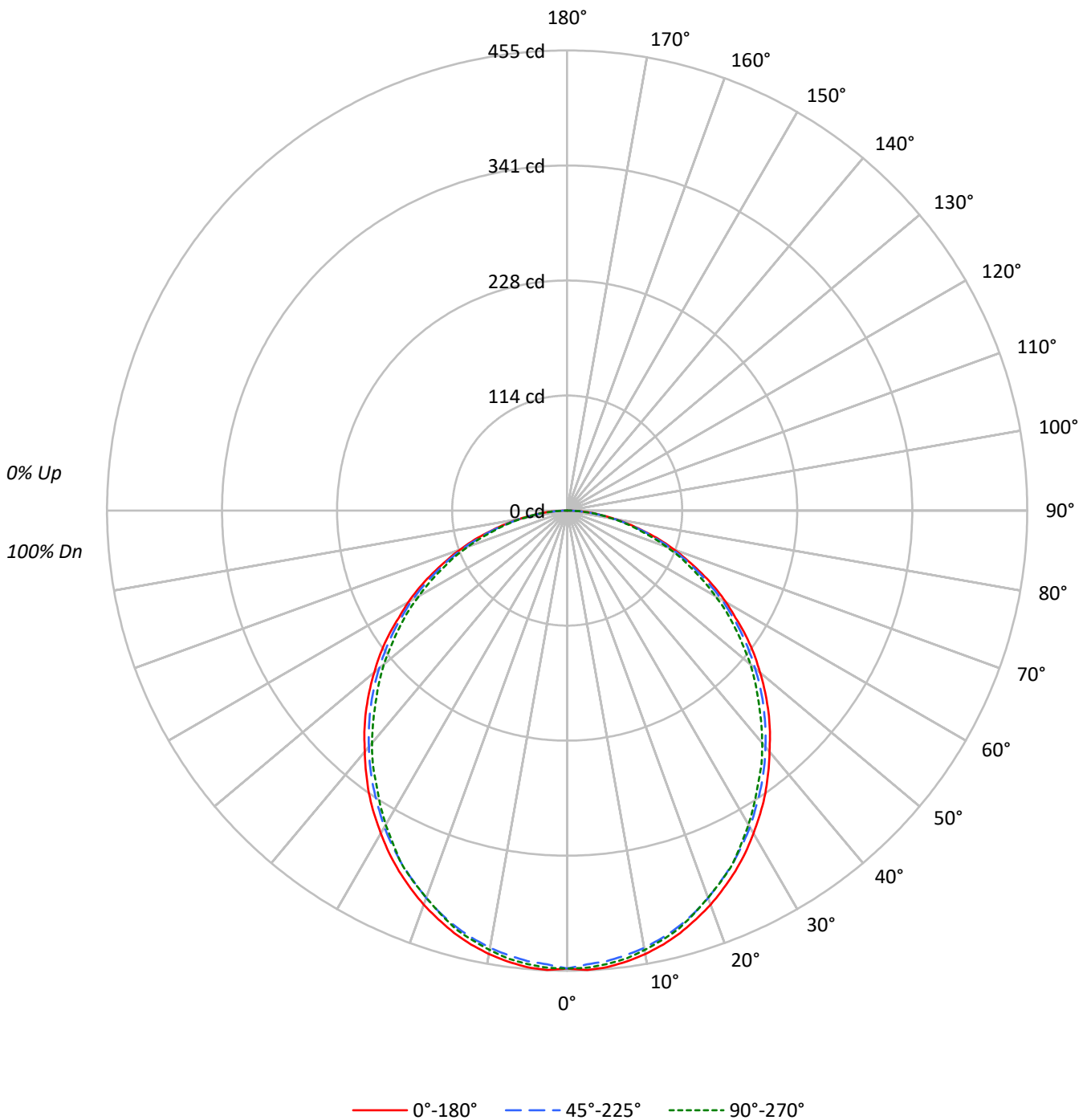
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1197.9 lumens  
Efficiency: N/A  
Efficacy: 107.0 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°	5488	5488	5488
5°	5514	5441	5478
10°	5481	5403	5430
15°	5425	5345	5368
20°	5349	5258	5254
25°	5263	5162	5168
30°	5156	5058	5021
35°	5055	4944	4871
40°	4926	4826	4749
45°	4825	4709	4589
50°	4695	4575	4464
55°	4560	4442	4292
60°	4398	4281	4109
65°	4208	4078	3909
70°	3994	3863	3703
75°	3704	3601	3409
80°	3337	3260	3155
85°	3115	2962	2851

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4825 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	42.7	3.6
10°-20°	120.8	10.1
20°-30°	178.9	14.9
30°-40°	209.8	17.5
40°-50°	212.1	17.7
50°-60°	187.6	15.7
60°-70°	140.9	11.8
70°-80°	81.2	6.8
80°-90°	24.1	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°	342.4	28.6
0°-40°	552.1	46.1
0°-60°	951.8	79.5
0°-90°	1197.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1197.9	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°	432	430	426	429	428	122
25°	394	390	386	388	386	181
35°	342	339	334	333	329	213
45°	282	279	275	271	268	217
55°	216	214	210	206	203	193
65°	147	146	142	138	136	145
75°	79	78	77	75	73	84
85°	22	22	21	21	20	25
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°	454.7	453.2	449.1	453.2	452.4
5°	453.2	451.3	447.2	450.9	450.2
7.5°	449.8	448.0	443.5	447.6	446.8
10°	445.3	443.5	439.0	442.4	441.2
12.5°	439.4	437.5	433.0	435.6	434.9
15°	432.3	430.0	425.9	428.9	427.8
17.5°	423.7	421.8	417.3	421.1	417.7
20°	414.7	412.9	407.6	411.0	407.3
22.5°	404.3	402.0	396.8	399.1	397.2
25°	393.5	390.5	386.0	387.9	386.4
27.5°	381.5	378.5	374.0	374.8	372.2
30°	368.4	365.8	361.4	362.1	358.7
32.5°	355.4	353.1	347.5	347.5	344.2
35°	341.6	338.6	334.1	333.0	329.2
37.5°	326.6	324.0	319.9	318.1	315.8
40°	311.3	309.8	305.0	302.7	300.1
42.5°	296.8	294.2	290.1	287.1	284.1
45°	281.5	279.2	274.7	271.0	267.7
47.5°	265.4	263.5	259.1	255.0	252.3
50°	249.0	247.5	242.6	238.2	236.7
52.5°	232.9	231.1	226.2	222.1	219.1
55°	215.8	214.3	210.2	206.1	203.1
57.5°	197.5	197.5	193.0	189.3	187.0
60°	181.4	179.6	176.6	172.5	169.5
62.5°	164.6	163.5	159.4	155.3	153.1
65°	146.7	145.6	142.2	138.5	136.3
67.5°	129.2	128.8	125.8	122.8	121.3
70°	112.7	112.0	109.0	106.0	104.5
72.5°	95.9	95.2	92.6	90.0	88.1
75°	79.1	78.4	76.9	74.7	72.8
77.5°	62.7	62.7	60.8	60.1	59.4
80°	47.8	47.4	46.7	45.9	45.2
82.5°	34.3	34.0	33.2	32.9	32.9
85°	22.4	22.0	21.3	20.9	20.5
87.5°	11.6	10.8	10.5	9.7	9.3
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	17.37	18.99	17.73	19.31	19.62	17.06	18.68	17.42	19.00	19.31
	3H	19.16	20.63	19.54	20.96	21.32	18.81	20.28	19.19	20.61	20.97
	4H	19.84	21.23	20.24	21.57	21.95	19.46	20.85	19.86	21.19	21.57
	6H	20.34	21.62	20.75	21.99	22.38	19.96	21.25	20.37	21.61	22.00
	8H	20.51	21.73	20.93	22.12	22.52	20.13	21.36	20.56	21.75	22.15
	12H	20.63	21.80	21.06	22.19	22.61	20.25	21.43	20.68	21.81	22.24
4H	2H	17.96	19.34	18.36	19.69	20.07	17.71	19.10	18.11	19.44	19.82
	3H	19.98	21.14	20.39	21.54	21.94	19.69	20.85	20.10	21.25	21.65
	4H	20.79	21.84	21.22	22.26	22.69	20.47	21.52	20.90	21.93	22.37
	6H	21.42	22.34	21.88	22.78	23.24	21.10	22.02	21.55	22.46	22.91
	8H	21.64	22.50	22.10	22.94	23.41	21.32	22.18	21.78	22.62	23.08
	12H	21.81	22.59	22.29	23.06	23.53	21.49	22.26	21.97	22.73	23.20
8H	4H	21.09	21.95	21.55	22.39	22.85	20.80	21.66	21.26	22.10	22.57
	6H	21.84	22.56	22.33	23.05	23.52	21.56	22.27	22.05	22.76	23.23
	8H	22.14	22.78	22.65	23.29	23.77	21.85	22.50	22.36	23.00	23.49
	12H	22.40	22.96	22.90	23.45	24.02	22.10	22.67	22.61	23.16	23.72
12H	4H	21.12	21.89	21.60	22.37	22.84	20.84	21.61	21.32	22.09	22.56
	6H	21.90	22.54	22.40	23.05	23.53	21.62	22.27	22.13	22.77	23.26
	8H	22.25	22.82	22.76	23.31	23.87	21.98	22.55	22.49	23.04	23.60