

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P1055787

Luminaire Tested: S123R3DR-H560D940-X4F0-XX-UDD-FLL-W

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1055787  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-4)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123R3DR-H560D940-X4F0-XX-UDD-FLL-W  
Description: DEFINE 3, WHITE 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

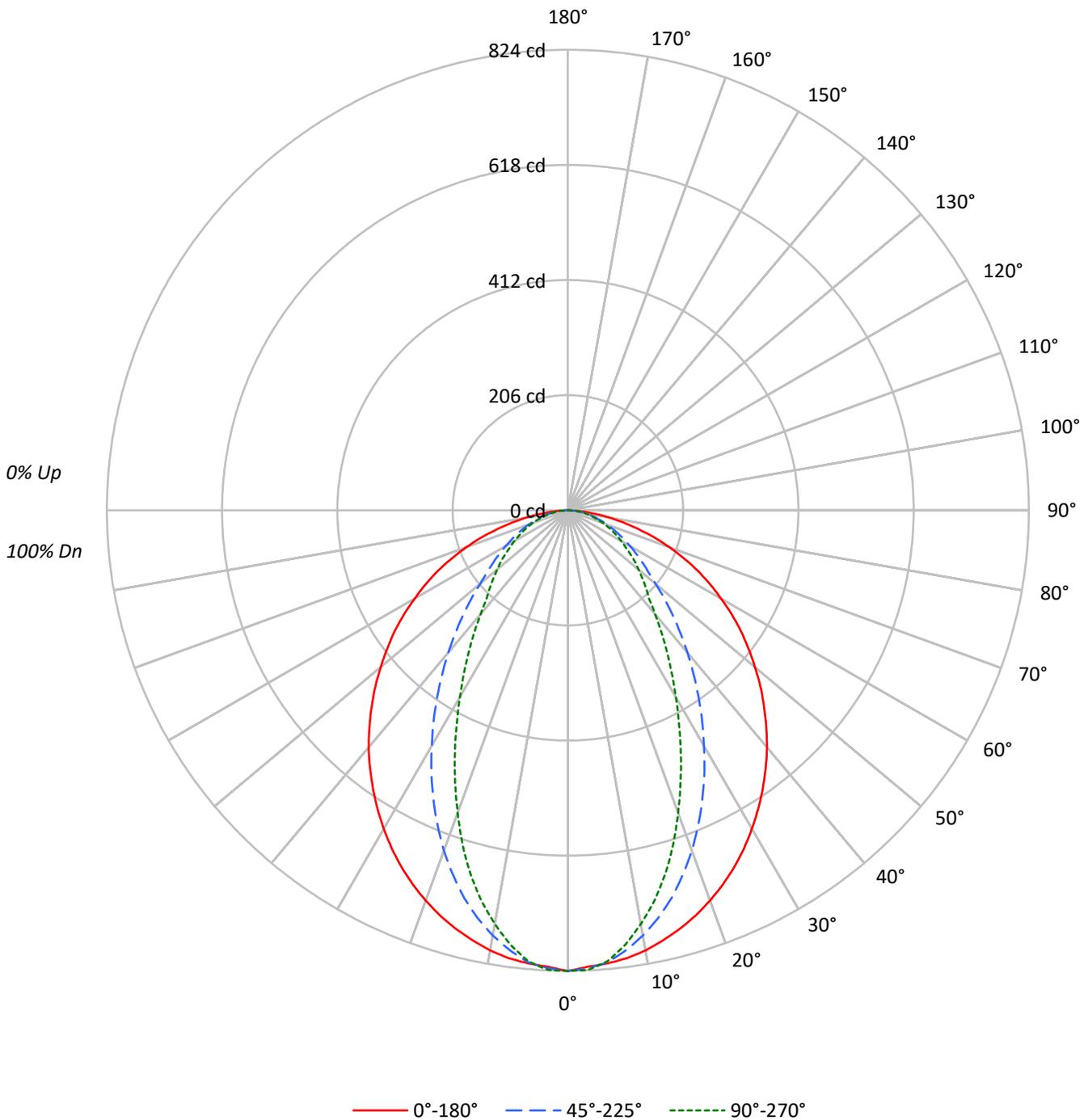
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1445.8 lumens  
Efficiency: N/A  
Efficacy: 83.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 0.83 / 1.02  
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 17.3  
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	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	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	88	86													86															
2	101	94	88	83	99	92	87	82	89	84	80	85	82	78	83	79	76	74													74															
3	93	84	77	71	91	82	76	70	80	74	69	77	72	68	74	70	67	65													65															
4	86	75	68	61	84	74	67	61	72	65	60	70	64	59	67	63	59	57													57															
5	80	68	60	54	78	67	60	54	65	58	53	63	57	53	62	56	52	50													50															
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45													45															
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40													40															
8	65	53	45	39	64	52	44	39	51	44	39	49	43	39	48	43	39	37													37															
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	34													34															
10	58	45	38	33	56	45	38	33	44	37	33	43	37	33	42	37	33	31													31															

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

	0°	45°	90°
0°	9939	9939	9939
5°	9850	9827	9805
10°	9790	9458	9201
15°	9673	8958	8404
20°	9533	8314	7389
25°	9366	7571	6356
30°	9159	6773	5374
35°	8938	5989	4538
40°	8714	5230	3813
45°	8452	4510	3364
50°	8187	3839	3087
55°	7945	3422	2850
60°	7612	3091	2662
65°	7300	2833	2499
70°	6803	2609	2348
75°	6088	2413	2213
80°	5221	2229	2055
85°	3666	2047	1964

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8452 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	76.4	5.3
10°-20°	202.2	14.0
20°-30°	266.3	18.4
30°-40°	270.3	18.7
40°-50°	234.9	16.3
50°-60°	184.1	12.7
60°-70°	125.1	8.7
70°-80°	67.8	4.7
80°-90°	18.7	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°	544.9	37.7
0°-40°	815.2	56.4
0°-60°	1234.3	85.4
0°-90°	1445.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1445.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	824	824	824	824	824	
5°	814	824	812	805	810	77
15°	775	764	718	682	673	218
25°	704	662	569	498	478	324
35°	607	535	407	329	308	380
45°	496	398	264	204	197	383
55°	378	263	163	139	136	337
65°	256	142	99	89	88	253
75°	131	65	52	48	48	140
85°	26	16	15	14	14	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	824.4	824.4	824.4	824.4	824.4
2.5°	817.6	828.1	820.0	820.7	823.1
5°	813.9	823.7	812.0	804.6	810.2
7.5°	808.3	815.7	794.1	782.4	784.3
10°	799.7	802.2	772.6	754.1	751.6
12.5°	788.0	783.7	746.7	719.5	715.2
15°	775.0	763.9	717.7	682.5	673.3
17.5°	760.2	741.7	683.8	640.6	626.4
20°	743.0	717.1	648.0	593.1	575.9
22.5°	724.5	691.2	609.2	544.4	526.6
25°	704.1	661.6	569.1	498.2	477.8
27.5°	681.9	632.0	528.4	452.6	429.8
30°	657.9	601.2	486.5	408.2	386.0
32.5°	633.2	568.5	446.4	366.9	345.3
35°	607.3	535.2	406.9	329.3	308.3
37.5°	580.8	501.3	368.7	293.5	273.8
40°	553.7	466.7	332.3	260.2	242.3
42.5°	524.7	432.2	297.2	228.7	215.2
45°	495.7	397.7	264.5	204.1	197.3
47.5°	466.7	362.5	233.7	186.8	180.7
50°	436.5	328.6	204.7	170.8	164.6
52.5°	406.9	295.3	180.7	155.4	151.1
55°	378.0	262.7	162.8	138.7	135.6
57.5°	347.7	230.6	144.9	125.8	122.1
60°	315.7	199.8	128.2	112.2	110.4
62.5°	286.7	170.8	113.4	100.5	98.7
65°	255.9	141.8	99.3	88.8	87.6
67.5°	224.4	117.8	86.3	77.7	77.1
70°	193.0	99.3	74.0	67.2	66.6
72.5°	162.2	82.0	62.3	58.0	56.7
75°	130.7	65.4	51.8	48.1	47.5
77.5°	102.4	50.6	41.3	38.8	38.2
80°	75.2	37.6	32.1	30.2	29.6
82.5°	49.3	25.9	22.8	21.6	21.6
85°	26.5	16.0	14.8	13.6	14.2
87.5°	9.2	6.8	6.8	6.2	6.8
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	18.54	20.03	18.90	20.34	20.66	13.69	15.18	14.05	15.49	15.81
	3H	20.42	21.76	20.80	22.09	22.45	15.31	16.65	15.69	16.98	17.34
	4H	21.18	22.44	21.58	22.78	23.16	15.95	17.21	16.35	17.56	17.94
	6H	21.74	22.90	22.16	23.27	23.66	16.44	17.60	16.85	17.97	18.36
	8H	21.92	23.02	22.34	23.41	23.81	16.61	17.72	17.04	18.10	18.51
	12H	22.01	23.07	22.44	23.45	23.88	16.74	17.79	17.17	18.17	18.60
4H	2H	18.58	19.84	18.98	20.19	20.57	14.41	15.67	14.82	16.02	16.40
	3H	20.60	21.64	21.01	22.04	22.45	16.24	17.28	16.65	17.68	18.08
	4H	21.42	22.36	21.85	22.77	23.21	16.98	17.92	17.42	18.34	18.78
	6H	22.10	22.92	22.56	23.36	23.82	17.59	18.41	18.05	18.85	19.31
	8H	22.33	23.09	22.79	23.54	24.01	17.81	18.57	18.27	19.01	19.48
	12H	22.48	23.16	22.97	23.64	24.11	17.97	18.66	18.46	19.13	19.61
8H	4H	21.44	22.21	21.91	22.65	23.12	17.37	18.13	17.83	18.57	19.04
	6H	22.17	22.80	22.67	23.29	23.77	18.09	18.72	18.59	19.22	19.69
	8H	22.44	23.01	22.96	23.52	24.01	18.38	18.95	18.90	19.46	19.95
	12H	22.65	23.15	23.16	23.64	24.21	18.63	19.13	19.14	19.62	20.18
12H	4H	21.43	22.11	21.91	22.59	23.06	17.42	18.10	17.90	18.58	19.05
	6H	22.16	22.72	22.67	23.23	23.72	18.18	18.74	18.69	19.25	19.74
	8H	22.46	22.96	22.97	23.45	24.02	18.52	19.02	19.03	19.52	20.08