

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: P1055717

Luminaire Tested: S123R3DR-H1165D840-X4F0-XX-UDD-F-S

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1055717
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-6)
Test Lab: INNOVATION CENTER
Issue Date: 7/25/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123R3DR-H1165D840-X4F0-XX-UDD-F-S
Description: DEFINE 3, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

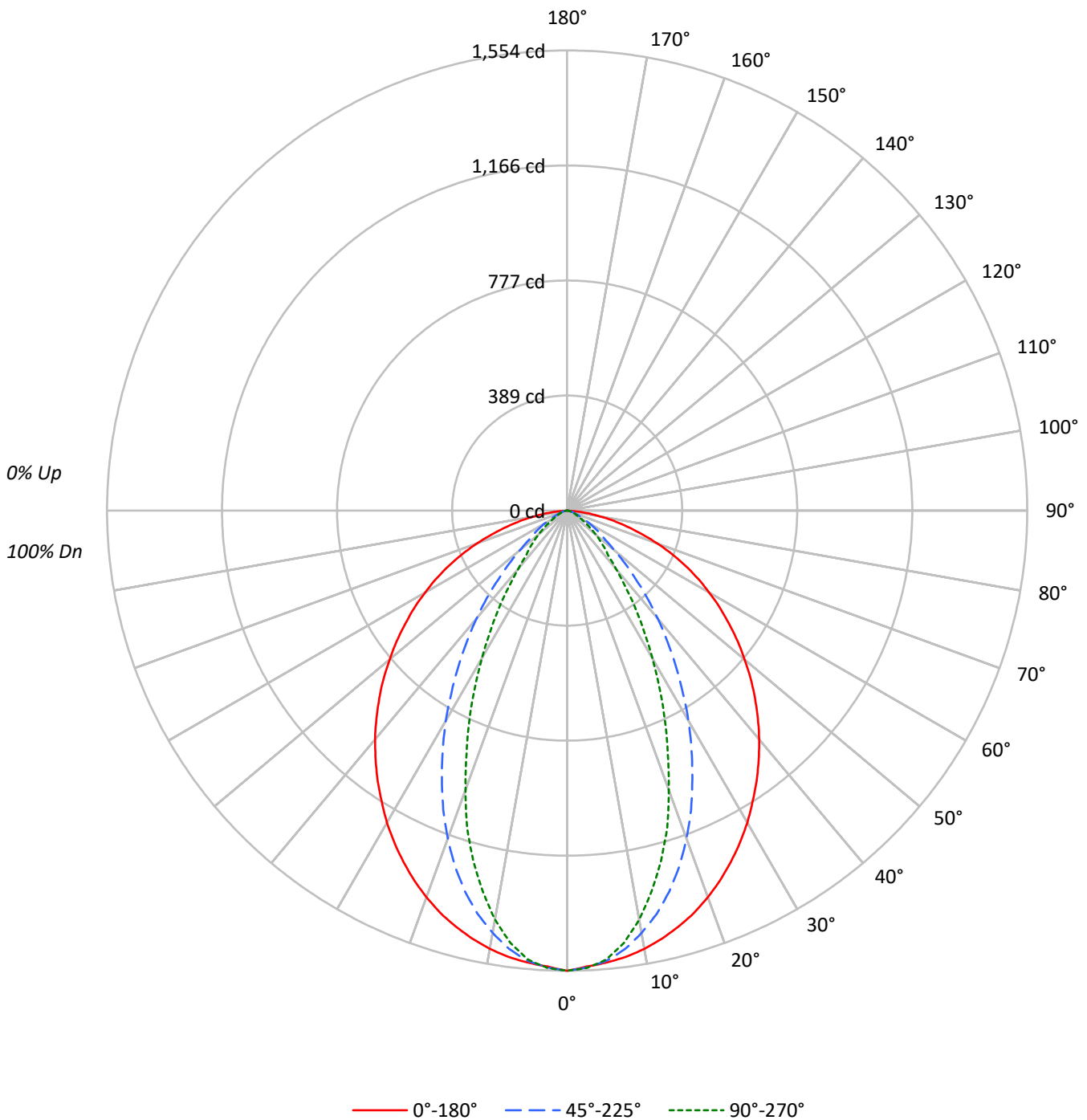
Lumens per Lamp: N/A
Luminaire Lumens: 2161.6 lumens
Efficiency: N/A
Efficacy: 59.1 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 0.77 / 0.94
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 36.6
Input Voltage (V): 120
Input Current (A_{in}): 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: P1055717

CATALOG NUMBER: S123R3DR-H1165D840-X4F0-XX-UDD-F-S

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	111	108	104	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79
3	96	88	81	76	94	86	80	76	84	78	74	81	77	73	79	75	72	70
4	90	80	73	67	88	79	72	67	76	71	66	74	69	65	72	68	64	62
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	67	62	58	56
6	78	67	60	54	77	66	59	54	65	58	53	63	57	53	62	57	53	51
7	73	62	54	49	72	61	54	49	60	53	49	58	53	48	57	52	48	46
8	69	57	50	45	68	57	50	45	56	49	45	54	49	44	53	48	44	42
9	65	53	46	41	64	53	46	41	52	45	41	51	45	41	50	45	41	39
10	62	50	43	38	60	49	43	38	48	42	38	48	42	38	47	42	38	36

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	18739	18739	18739
5°	18543	18472	18419
10°	18397	17729	17171
15°	18150	16623	15281
20°	17825	15122	12872
25°	17404	13308	10387
30°	16941	11403	7999
35°	16415	9411	5920
40°	15883	7490	4034
45°	15298	5601	3040
50°	14673	3896	2376
55°	14029	2848	1734
60°	13358	2132	1244
65°	12567	1429	967
70°	11372	1040	779
75°	9815	755	620
80°	7873	611	514
85°	4081	609	401

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 15298 cd/sqm



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CATALOG NUMBER: S123R3DR-H1165D840-X4F0-XX-UDD-F-S

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	143.7	6.6
10°-20°	374.0	17.3
20°-30°	469.9	21.7
30°-40°	437.7	20.2
40°-50°	335.0	15.5
50°-60°	222.7	10.3
60°-70°	120.0	5.6
70°-80°	49.2	2.3
80°-90°	9.4	0.4
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°	987.6	45.7
0°-40°	1425.2	65.9
0°-60°	1982.9	91.7
0°-90°	2161.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2161.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1554	1554	1554	1554	1554	
5°	1532	1548	1526	1520	1522	145
15°	1454	1430	1332	1254	1224	410
25°	1308	1220	1000	834	781	602
35°	1115	950	639	452	402	697
45°	897	663	328	193	178	692
55°	667	386	136	94	82	598
65°	440	149	50	37	34	435
75°	211	35	16	15	13	226
85°	30	4	4	4	3	43
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1554.3	1554.3	1554.3	1554.3	1554.3
2.5°	1541.0	1560.2	1544.0	1545.5	1545.5
5°	1532.2	1548.4	1526.3	1520.4	1521.9
7.5°	1520.4	1530.7	1493.9	1474.7	1471.8
10°	1502.7	1505.7	1448.2	1414.3	1402.6
12.5°	1480.6	1470.3	1395.2	1339.2	1317.1
15°	1454.1	1430.5	1331.8	1253.8	1224.3
17.5°	1424.7	1384.9	1259.6	1158.0	1122.6
20°	1389.3	1333.3	1178.6	1051.9	1003.3
22.5°	1351.0	1278.8	1093.2	942.9	888.4
25°	1308.3	1219.9	1000.4	833.9	780.8
27.5°	1264.1	1156.5	909.0	730.7	676.2
30°	1216.9	1091.7	819.1	630.6	574.6
32.5°	1165.4	1021.0	726.3	537.7	481.8
35°	1115.3	950.3	639.4	452.3	402.2
37.5°	1062.2	879.5	555.4	377.2	321.2
40°	1009.2	807.4	475.9	303.5	256.3
42.5°	953.2	735.2	400.7	241.6	204.8
45°	897.2	663.0	328.5	193.0	178.3
47.5°	841.2	590.8	265.2	166.5	151.7
50°	782.3	521.5	207.7	141.4	126.7
52.5°	726.3	452.3	162.1	116.4	103.1
55°	667.4	386.0	135.5	94.3	82.5
57.5°	612.9	318.2	112.0	73.7	64.8
60°	554.0	257.8	88.4	57.5	51.6
62.5°	498.0	201.8	67.8	45.7	41.3
65°	440.5	148.8	50.1	36.8	33.9
67.5°	383.1	107.5	38.3	29.5	28.0
70°	322.6	81.0	29.5	23.6	22.1
72.5°	265.2	57.5	22.1	19.2	17.7
75°	210.7	35.4	16.2	14.7	13.3
77.5°	162.1	20.6	11.8	11.8	10.3
80°	113.4	11.8	8.8	8.8	7.4
82.5°	69.2	7.4	5.9	5.9	5.9
85°	29.5	4.4	4.4	4.4	2.9
87.5°	4.4	1.5	1.5	1.5	1.5
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	19.99	21.35	20.36	21.66	21.98	8.57	9.93	8.94	10.24	10.56
	3H	21.75	22.95	22.13	23.28	23.65	9.23	10.44	9.61	10.77	11.13
	4H	22.45	23.57	22.85	23.92	24.30	9.43	10.56	9.83	10.91	11.29
	6H	22.96	23.99	23.38	24.36	24.76	9.55	10.59	9.97	10.96	11.35
	8H	23.10	24.08	23.53	24.47	24.88	9.59	10.57	10.02	10.96	11.36
	12H	23.15	24.09	23.58	24.47	24.90	9.60	10.53	10.03	10.92	11.35
4H	2H	19.80	20.93	20.20	21.28	21.66	9.13	10.25	9.53	10.60	10.98
	3H	21.60	22.52	22.01	22.92	23.32	9.93	10.85	10.34	11.25	11.65
	4H	22.29	23.11	22.72	23.53	23.97	10.18	11.01	10.62	11.43	11.87
	6H	22.86	23.57	23.32	24.02	24.48	10.38	11.09	10.84	11.54	12.00
	8H	23.04	23.70	23.50	24.14	24.62	10.44	11.10	10.90	11.55	12.02
	12H	23.12	23.71	23.61	24.19	24.66	10.47	11.05	10.95	11.54	12.01
8H	4H	22.17	22.83	22.64	23.28	23.75	10.50	11.16	10.97	11.61	12.08
	6H	22.72	23.26	23.22	23.76	24.24	10.75	11.29	11.25	11.78	12.26
	8H	22.90	23.38	23.42	23.90	24.39	10.83	11.32	11.35	11.83	12.32
	12H	23.00	23.43	23.52	23.92	24.49	10.91	11.34	11.43	11.83	12.41
12H	4H	22.12	22.71	22.61	23.19	23.67	10.54	11.13	11.03	11.61	12.09
	6H	22.66	23.15	23.18	23.66	24.15	10.79	11.28	11.31	11.79	12.28
	8H	22.86	23.29	23.37	23.78	24.35	10.92	11.35	11.43	11.84	12.41