

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: P1055716

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

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1055716
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-5)
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-B
Description: DEFINE 3, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

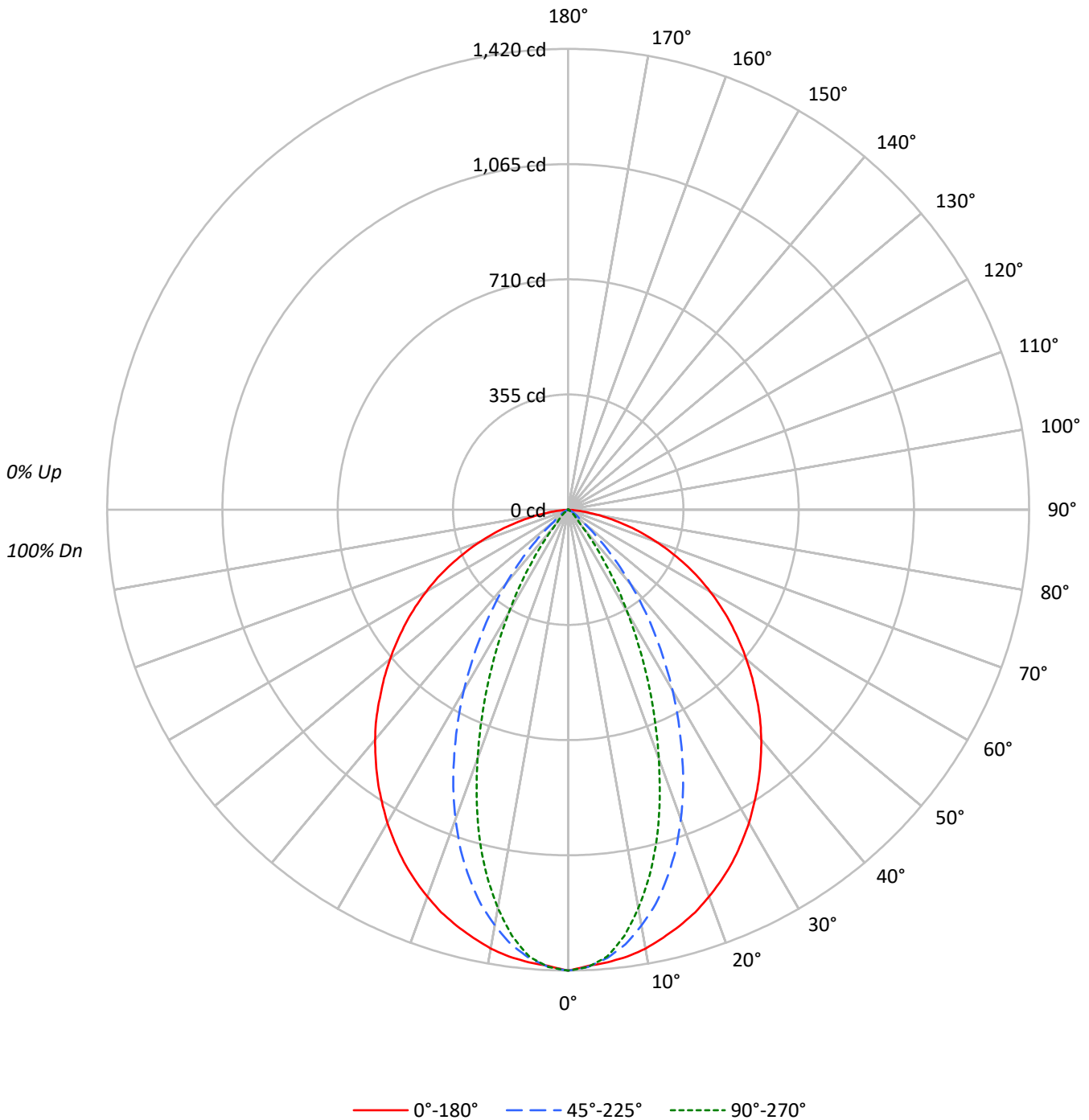
Lumens per Lamp: N/A
Luminaire Lumens: 1662.3 lumens
Efficiency: N/A
Efficacy: 45.4 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 0.7 / 0.86
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 36.6
Input Voltage (V): 120
Input Current (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	112	108	105	103	109	106	104	101	102	100	98	98	97	95	95	93	92	90
2	105	99	94	89	102	97	92	88	93	90	86	90	87	84	87	85	83	81
3	98	90	84	79	96	88	83	78	86	81	77	83	79	76	81	77	74	73
4	92	82	75	70	90	81	75	70	79	73	69	77	72	68	75	71	67	65
5	86	76	69	63	84	75	68	63	73	67	62	71	66	62	69	65	61	59
6	81	70	63	57	79	69	62	57	67	61	57	66	61	56	64	60	56	54
7	76	65	58	53	74	64	57	52	63	57	52	61	56	52	60	55	52	50
8	71	60	53	48	70	60	53	48	58	52	48	57	52	48	56	51	48	46
9	68	56	49	45	66	56	49	45	55	49	45	54	48	44	53	48	44	43
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17123	17123	17123
5°	16939	16778	16724
10°	16810	15926	15259
15°	16568	14675	13148
20°	16275	13024	10472
25°	15934	11035	7722
30°	15506	8942	5066
35°	15049	6809	2776
40°	14561	4707	951
45°	13992	2738	552
50°	13430	1078	332
55°	12851	681	156
60°	12184	427	70
65°	11348	211	43
70°	10180	102	53
75°	8646	70	70
80°	6443	104	0
85°	2448	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 13992 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.2	7.8
10°-20°	330.5	19.9
20°-30°	394.2	23.7
30°-40°	334.4	20.1
40°-50°	227.3	13.7
50°-60°	140.9	8.5
60°-70°	71.4	4.3
70°-80°	29.1	1.8
80°-90°	4.5	0.3
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°	854.8	51.4
0°-40°	1189.2	71.5
0°-60°	1557.3	93.7
0°-90°	1662.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1662.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1420	1420	1420	1420	1420	
5°	1400	1413	1386	1376	1382	133
15°	1327	1294	1176	1083	1053	374
25°	1198	1086	830	641	580	551
35°	1022	821	463	249	189	639
45°	821	538	161	40	32	634
55°	611	271	32	12	7	546
65°	398	66	7	2	2	393
75°	186	12	2	2	2	197
85°	18	0	0	2	0	31
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1420.2	1420.2	1420.2	1420.2	1420.2
2.5°	1407.0	1426.1	1409.9	1408.4	1409.9
5°	1399.6	1412.9	1386.3	1376.0	1381.9
7.5°	1389.3	1395.2	1351.0	1324.5	1324.5
10°	1373.1	1368.7	1300.9	1256.7	1246.4
12.5°	1351.0	1333.3	1244.9	1175.7	1156.5
15°	1327.4	1293.5	1175.7	1082.9	1053.4
17.5°	1300.9	1249.3	1100.5	979.7	937.0
20°	1268.5	1199.2	1015.1	867.8	816.2
22.5°	1234.6	1144.7	925.2	752.8	695.4
25°	1197.8	1085.8	829.5	640.9	580.5
27.5°	1156.5	1023.9	735.2	533.3	467.0
30°	1113.8	959.1	642.3	430.2	363.9
32.5°	1068.1	891.3	549.5	335.9	274.0
35°	1022.5	820.6	462.6	249.0	188.6
37.5°	973.8	749.9	378.6	172.4	119.3
40°	925.2	680.7	299.1	109.0	60.4
42.5°	875.1	608.5	226.9	54.5	41.3
45°	820.6	537.7	160.6	39.8	32.4
47.5°	769.0	470.0	106.1	32.4	25.0
50°	716.0	402.2	57.5	23.6	17.7
52.5°	663.0	337.4	41.3	17.7	11.8
55°	611.4	271.1	32.4	11.8	7.4
57.5°	558.4	213.6	25.0	7.4	4.4
60°	505.3	157.6	17.7	4.4	2.9
62.5°	452.3	109.0	11.8	2.9	1.5
65°	397.8	66.3	7.4	1.5	1.5
67.5°	341.8	45.7	4.4	1.5	1.5
70°	288.8	32.4	2.9	1.5	1.5
72.5°	235.7	20.6	1.5	1.5	0.0
75°	185.6	11.8	1.5	1.5	1.5
77.5°	137.0	4.4	1.5	1.5	0.0
80°	92.8	1.5	1.5	1.5	0.0
82.5°	51.6	0.0	1.5	1.5	0.0
85°	17.7	0.0	0.0	1.5	0.0
87.5°	0.0	0.0	0.0	1.5	0.0
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	18.92	20.20	19.28	20.51	20.82	0.00	0.00	0.00	0.00	0.00
	3H	20.86	22.00	21.24	22.33	22.69	0.00	0.00	0.00	0.00	0.00
	4H	21.69	22.74	22.09	23.10	23.48	0.00	0.00	0.00	0.00	0.00
	6H	22.24	23.21	22.66	23.58	23.98	0.00	0.00	0.00	0.00	0.00
	8H	22.37	23.28	22.80	23.68	24.08	0.00	0.00	0.00	0.00	0.00
	12H	22.39	23.27	22.83	23.65	24.08	0.00	0.00	0.00	0.00	0.00
4H	2H	18.68	19.74	19.08	20.09	20.47	0.00	0.00	0.00	0.00	0.00
	3H	20.63	21.50	21.05	21.90	22.30	0.00	0.00	0.00	0.00	0.00
	4H	21.45	22.22	21.88	22.64	23.08	0.00	0.00	0.00	0.00	0.00
	6H	22.05	22.71	22.51	23.16	23.62	0.00	0.00	0.00	0.00	0.00
	8H	22.20	22.82	22.67	23.27	23.74	0.00	0.00	0.00	0.00	0.00
	12H	22.25	22.79	22.73	23.27	23.75	0.00	0.00	0.00	0.00	0.00
8H	4H	21.30	21.92	21.77	22.37	22.84	0.00	0.00	0.00	0.00	0.00
	6H	21.89	22.39	22.39	22.89	23.37	0.00	0.00	0.00	0.00	0.00
	8H	22.04	22.49	22.56	23.00	23.49	0.00	0.00	0.00	0.00	0.00
	12H	22.09	22.49	22.61	22.98	23.56	0.00	0.00	0.00	0.00	0.00
12H	4H	21.26	21.80	21.74	22.28	22.76	0.00	0.00	0.00	0.00	0.00
	6H	21.82	22.27	22.35	22.79	23.28	0.00	0.00	0.00	0.00	0.00
	8H	21.99	22.39	22.51	22.88	23.45	0.00	0.00	0.00	0.00	0.17