

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: P1055720

Luminaire Tested: S123R3DR-H1165D850-X4F0-XX-UDD-F-S

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2024  
Report Number: P1055720  
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-H1165D850-X4F0-XX-UDD-F-S  
Description: DEFINE 3, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: -

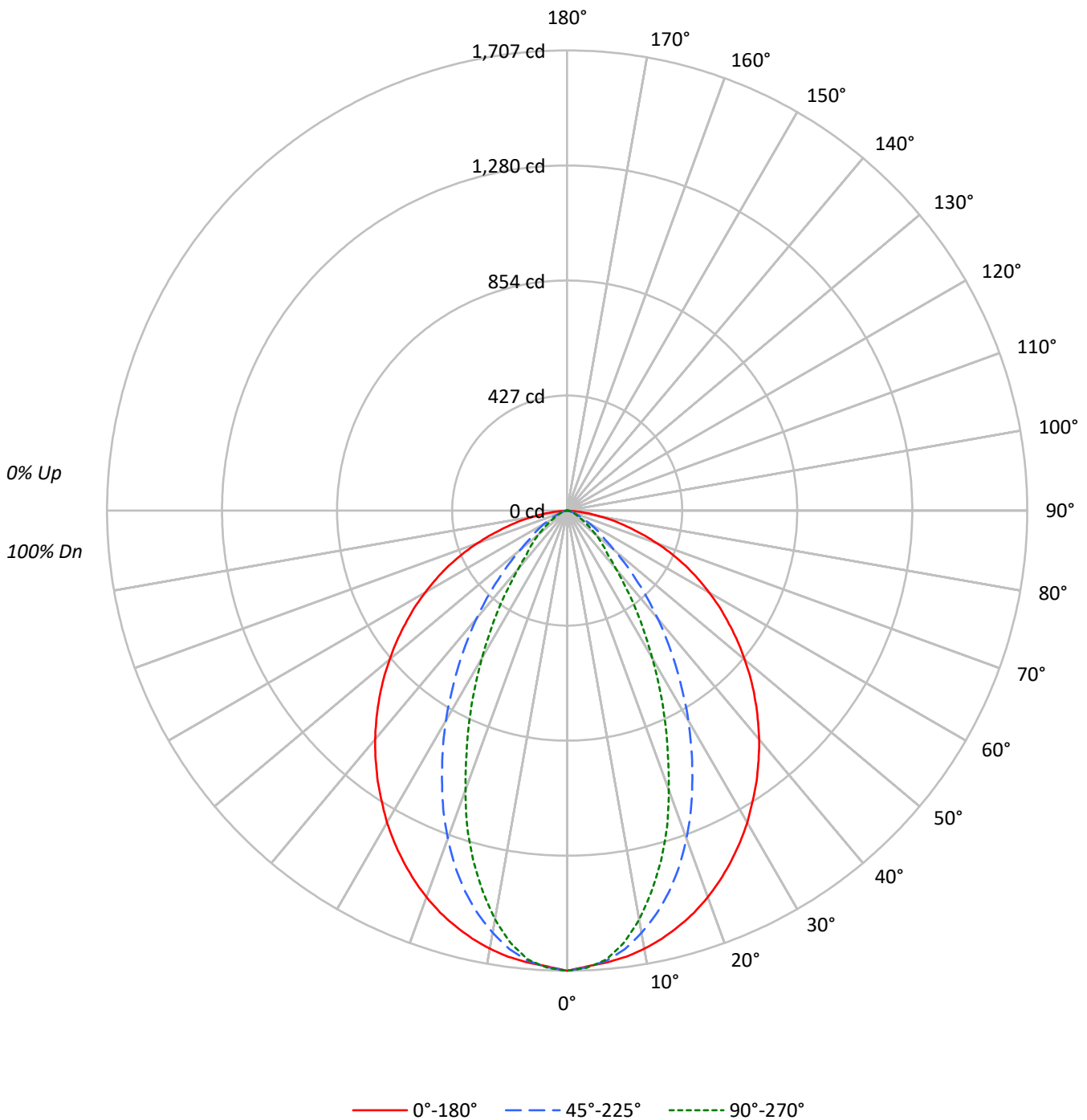
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2373.7 lumens  
Efficiency: N/A  
Efficacy: 64.9 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<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

TEST NUMBER: P1055720

CATALOG NUMBER: S123R3DR-H1165D850-X4F0-XX-UDD-F-S

### Luminous Intensity Polar Plot





TEST NUMBER: P1055720

CATALOG NUMBER: S123R3DR-H1165D850-X4F0-XX-UDD-F-S

**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°	20579	20579	20579
5°	20364	20285	20227
10°	20204	19470	18856
15°	19932	18256	16782
20°	19575	16606	14136
25°	19112	14614	11407
30°	18605	12524	8784
35°	18025	10335	6501
40°	17443	8225	4430
45°	16800	6152	3338
50°	16114	4278	2609
55°	15405	3128	1904
60°	14668	2341	1365
65°	13802	1569	1061
70°	12489	1142	857
75°	10779	829	680
80°	8651	673	562
85°	4482	678	443

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 16800 cd/sqm



TEST NUMBER: P1055720

CATALOG NUMBER: S123R3DR-H1165D850-X4F0-XX-UDD-F-S

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	157.8	6.6
10°-20°	410.7	17.3
20°-30°	516.0	21.7
30°-40°	480.6	20.2
40°-50°	367.9	15.5
50°-60°	244.5	10.3
60°-70°	131.8	5.6
70°-80°	54.0	2.3
80°-90°	10.3	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°	1084.5	45.7
0°-40°	1565.1	65.9
0°-60°	2177.6	91.7
0°-90°	2373.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2373.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1707	1707	1707	1707	1707	
5°	1683	1700	1676	1670	1671	160
15°	1597	1571	1463	1377	1344	450
25°	1437	1340	1099	916	858	662
35°	1225	1044	702	497	442	766
45°	985	728	361	212	196	760
55°	733	424	149	104	91	657
65°	484	163	55	40	37	478
75°	231	39	18	16	15	248
85°	32	5	5	5	3	48
90°	0	0	0	0	0	



TEST NUMBER: P1055720

CATALOG NUMBER: S123R3DR-H1165D850-X4F0-XX-UDD-F-S

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1706.9	1706.9	1706.9	1706.9	1706.9
2.5°	1692.3	1713.4	1695.6	1697.2	1697.2
5°	1682.6	1700.4	1676.1	1669.7	1671.3
7.5°	1669.7	1681.0	1640.5	1619.5	1616.3
10°	1650.3	1653.5	1590.4	1553.2	1540.2
12.5°	1626.0	1614.7	1532.1	1470.7	1446.4
15°	1596.9	1571.0	1462.6	1376.8	1344.5
17.5°	1564.5	1520.8	1383.3	1271.7	1232.8
20°	1525.7	1464.2	1294.3	1155.2	1101.8
22.5°	1483.6	1404.3	1200.5	1035.5	975.6
25°	1436.7	1339.6	1098.6	915.7	857.5
27.5°	1388.2	1270.0	998.2	802.5	742.6
30°	1336.4	1198.9	899.6	692.5	631.0
32.5°	1279.8	1121.2	797.6	590.5	529.1
35°	1224.7	1043.5	702.2	496.7	441.7
37.5°	1166.5	965.9	609.9	414.2	352.7
40°	1108.3	886.6	522.6	333.3	281.5
42.5°	1046.8	807.3	440.1	265.3	224.9
45°	985.3	728.1	360.8	211.9	195.8
47.5°	923.8	648.8	291.2	182.8	166.6
50°	859.1	572.7	228.1	155.3	139.1
52.5°	797.6	496.7	178.0	127.8	113.3
55°	732.9	423.9	148.8	103.5	90.6
57.5°	673.0	349.5	123.0	80.9	71.2
60°	608.3	283.1	97.1	63.1	56.6
62.5°	546.8	221.7	74.4	50.2	45.3
65°	483.8	163.4	55.0	40.4	37.2
67.5°	420.7	118.1	42.1	32.4	30.7
70°	354.3	89.0	32.4	25.9	24.3
72.5°	291.2	63.1	24.3	21.0	19.4
75°	231.4	38.8	17.8	16.2	14.6
77.5°	178.0	22.7	12.9	12.9	11.3
80°	124.6	12.9	9.7	9.7	8.1
82.5°	76.0	8.1	6.5	6.5	6.5
85°	32.4	4.9	4.9	4.9	3.2
87.5°	4.9	1.6	1.6	1.6	1.6
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P1055720  
 CATALOG NUMBER: S123R3DR-H1165D850-X4F0-XX-UDD-F-S

**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	20.32	21.68	20.68	21.99	22.30	8.89	10.25	9.26	10.56	10.88
	3H	22.07	23.28	22.45	23.61	23.97	9.56	10.76	9.94	11.09	11.46
	4H	22.77	23.90	23.18	24.25	24.63	9.75	10.88	10.16	11.23	11.61
	6H	23.29	24.32	23.70	24.69	25.08	9.88	10.91	10.29	11.28	11.67
	8H	23.43	24.41	23.86	24.80	25.20	9.91	10.89	10.34	11.28	11.68
	12H	23.48	24.41	23.91	24.80	25.23	9.92	10.86	10.35	11.24	11.67
4H	2H	20.13	21.25	20.53	21.60	21.99	9.45	10.57	9.85	10.92	11.31
	3H	21.92	22.84	22.33	23.25	23.65	10.25	11.17	10.66	11.57	11.98
	4H	22.62	23.44	23.05	23.86	24.30	10.51	11.33	10.94	11.75	12.19
	6H	23.19	23.90	23.65	24.34	24.81	10.70	11.42	11.17	11.86	12.33
	8H	23.36	24.02	23.83	24.47	24.94	10.76	11.42	11.23	11.87	12.34
	12H	23.45	24.03	23.93	24.52	24.99	10.79	11.38	11.28	11.86	12.33
8H	4H	22.49	23.16	22.96	23.60	24.07	10.82	11.48	11.29	11.93	12.40
	6H	23.05	23.59	23.55	24.08	24.56	11.07	11.61	11.57	12.11	12.59
	8H	23.22	23.71	23.74	24.22	24.71	11.16	11.64	11.68	12.16	12.65
	12H	23.33	23.76	23.84	24.25	24.82	11.24	11.67	11.75	12.16	12.73
12H	4H	22.45	23.04	22.94	23.52	23.99	10.87	11.45	11.35	11.94	12.41
	6H	22.99	23.47	23.51	23.99	24.48	11.11	11.60	11.64	12.11	12.61
	8H	23.18	23.61	23.70	24.11	24.68	11.24	11.67	11.76	12.16	12.74