

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: P1439978

Luminaire Tested: S124DR-S865D840-X4F0-XX-UDD-FLB-W

Issue Date: 4/2/2026

Test Information

Test Method: LM-79-2024
Report Number: P1439978
TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G2-2509-563-1)
Test Lab: INNOVATION CENTER
Issue Date: 4/2/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DR-S865D840-X4F0-XX-UDD-FLB-W
Description: DEFINE 4, DIRECT RECESSED WITH BATWING FLUSH OPTIC
CORE LIGHT ENGINE
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

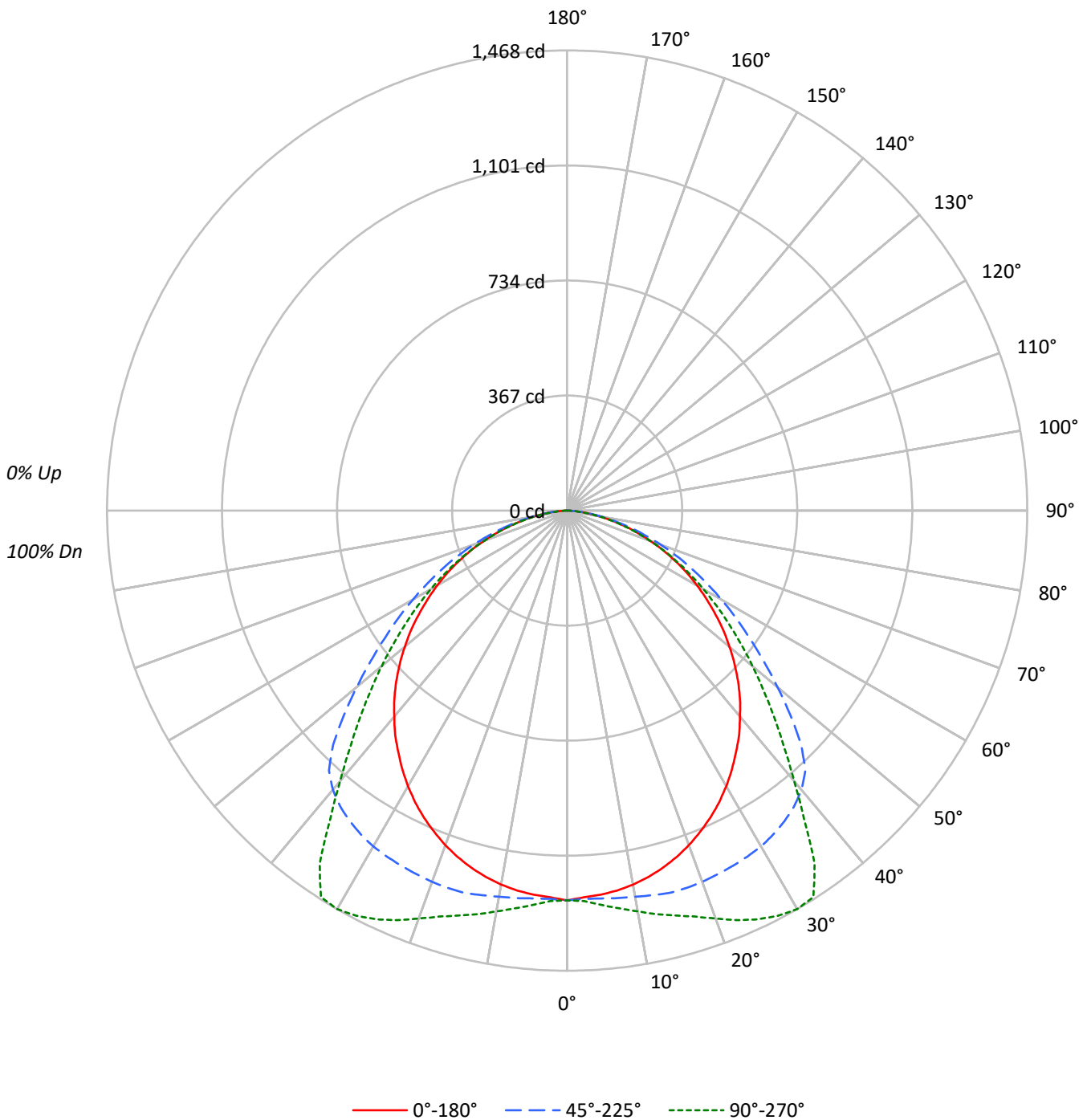
Lumens per Lamp: N/A
Luminaire Lumens: 3778.4 lumens
Efficiency: N/A
Efficacy: 108.9 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.53 / 1.51
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 34.7
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

TEST NUMBER: P1439978

CATALOG NUMBER: S124DR-S865D840-X4F0-XX-UDD-FLB-W

Luminous Intensity Polar Plot



TEST NUMBER: P1439978

CATALOG NUMBER: S124DR-S865D840-X4F0-XX-UDD-FLB-W

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	105	101	97	107	103	99	95	98	95	92	94	92	90	91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	77	73	71
3	91	81	73	67	89	79	72	66	76	70	65	74	68	64	71	66	63	60
4	83	72	63	57	81	70	62	56	68	61	55	66	60	55	63	58	54	52
5	77	64	55	49	75	63	55	49	61	54	48	59	53	47	57	52	47	45
6	71	58	49	43	69	57	48	42	55	48	42	53	47	42	52	46	41	39
7	66	52	44	38	64	52	43	37	50	43	37	49	42	37	47	41	37	35
8	61	48	39	34	60	47	39	33	46	38	33	44	38	33	43	37	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	28
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°	10992	10992	10992
5°	10915	11023	11208
10°	10877	11228	11655
15°	10799	11559	12240
20°	10687	11858	13029
25°	10546	12200	14033
30°	10363	12631	14985
35°	10140	13050	14855
40°	9899	13419	12997
45°	9642	13196	11686
50°	9297	12049	10623
55°	8914	10964	9705
60°	8479	10054	8889
65°	7964	9163	8117
70°	7285	8200	7254
75°	6419	7044	6292
80°	5280	5652	5092
85°	3713	3835	3469

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 13196 cd/sqm



TEST NUMBER: P1439978

CATALOG NUMBER: S124DR-S865D840-X4F0-XX-UDD-FLB-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.3	3.2
10°-20°	357.5	9.5
20°-30°	581.9	15.4
30°-40°	739.0	19.6
40°-50°	720.1	19.1
50°-60°	590.4	15.6
60°-70°	411.9	10.9
70°-80°	211.4	5.6
80°-90°	46.9	1.2
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°	1058.7	28.0
0°-40°	1797.7	47.6
0°-60°	3108.2	82.3
0°-90°	3778.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3778.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1243	1243	1243	1243	1243	
5°	1230	1248	1242	1251	1263	117
15°	1180	1216	1263	1313	1337	333
25°	1081	1150	1251	1380	1438	498
35°	940	1031	1209	1385	1376	588
45°	771	866	1055	968	935	594
55°	578	667	711	652	630	517
65°	381	436	438	403	388	377
75°	188	209	206	192	184	200
85°	37	38	38	35	34	46
90°	0	0	0	0	0	



TEST NUMBER: P1439978

CATALOG NUMBER: S124DR-S865D840-X4F0-XX-UDD-FLB-W

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1243.3	1243.3	1243.3	1243.3	1243.3
2.5°	1234.7	1250.6	1239.6	1244.5	1246.9
5°	1229.8	1248.1	1242.0	1250.6	1262.8
7.5°	1222.5	1243.3	1246.9	1264.0	1279.9
10°	1211.5	1235.9	1250.6	1279.9	1298.2
12.5°	1196.9	1227.4	1256.7	1296.9	1318.9
15°	1179.8	1216.4	1262.8	1312.8	1337.2
17.5°	1159.1	1203.0	1262.8	1325.0	1357.9
20°	1135.9	1187.1	1260.3	1340.9	1384.8
22.5°	1109.1	1170.1	1255.5	1359.2	1414.1
25°	1081.0	1150.5	1250.6	1379.9	1438.5
27.5°	1049.3	1127.4	1244.5	1395.8	1456.8
30°	1015.1	1099.3	1237.2	1403.1	1467.8
32.5°	978.5	1066.3	1225.0	1403.1	1461.7
35°	939.5	1031.0	1209.1	1384.8	1376.3
37.5°	901.6	993.1	1189.6	1295.7	1242.0
40°	857.7	952.9	1162.7	1170.1	1126.1
42.5°	816.2	910.2	1124.9	1063.9	1024.9
45°	771.1	866.3	1055.4	967.5	934.6
47.5°	724.7	818.7	965.1	880.9	850.4
50°	675.9	771.1	876.0	799.2	772.3
52.5°	628.3	719.8	790.6	723.5	697.9
55°	578.3	667.4	711.3	651.5	629.6
57.5°	528.3	613.7	639.3	584.4	563.7
60°	479.5	556.4	568.6	521.0	502.7
62.5°	430.7	496.6	501.5	460.0	444.1
65°	380.7	435.6	438.0	402.6	388.0
67.5°	331.9	377.0	377.0	346.5	334.3
70°	281.8	319.7	317.2	292.8	280.6
72.5°	234.3	261.1	258.7	240.4	231.8
75°	187.9	208.6	206.2	191.6	184.2
77.5°	144.0	158.6	156.2	146.4	140.3
80°	103.7	112.2	111.0	103.7	100.0
82.5°	68.3	73.2	70.8	65.9	63.4
85°	36.6	37.8	37.8	35.4	34.2
87.5°	13.4	13.4	13.4	13.4	12.2
90°	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1439978
 CATALOG NUMBER: S124DR-S865D840-X4F0-XX-UDD-FLB-W

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	20.01	21.61	20.38	21.93	22.24	19.80	21.40	20.16	21.71	22.02
	3H	21.52	22.96	21.89	23.28	23.64	21.27	22.71	21.65	23.03	23.40
	4H	22.02	23.37	22.42	23.72	24.10	21.76	23.12	22.16	23.47	23.84
	6H	22.34	23.59	22.75	23.96	24.35	22.08	23.33	22.49	23.70	24.09
	8H	22.42	23.62	22.85	24.01	24.41	22.16	23.35	22.58	23.74	24.14
	12H	22.46	23.61	22.89	23.99	24.42	22.19	23.33	22.62	23.72	24.15
4H	2H	20.63	21.99	21.03	22.34	22.71	20.47	21.82	20.86	22.17	22.54
	3H	22.36	23.49	22.77	23.89	24.29	22.13	23.26	22.54	23.66	24.06
	4H	22.99	24.01	23.42	24.42	24.86	22.73	23.75	23.16	24.16	24.60
	6H	23.42	24.31	23.88	24.75	25.20	23.14	24.03	23.60	24.47	24.93
	8H	23.53	24.36	23.99	24.80	25.27	23.25	24.07	23.71	24.52	24.98
	12H	23.60	24.34	24.08	24.82	25.29	23.30	24.05	23.78	24.52	24.99
8H	4H	23.23	24.06	23.70	24.51	24.97	23.00	23.83	23.46	24.27	24.74
	6H	23.76	24.44	24.25	24.93	25.41	23.50	24.19	24.00	24.68	25.15
	8H	23.92	24.54	24.43	25.05	25.53	23.65	24.27	24.16	24.77	25.26
	12H	24.03	24.58	24.54	25.07	25.63	23.75	24.29	24.26	24.78	25.35
12H	4H	23.25	23.99	23.73	24.46	24.93	23.02	23.76	23.50	24.24	24.71
	6H	23.78	24.40	24.29	24.90	25.39	23.53	24.15	24.04	24.66	25.14
	8H	23.99	24.53	24.50	25.02	25.59	23.73	24.27	24.23	24.76	25.32