

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: P1439934

Luminaire Tested: S124DR-H865D850-X4F0-XX-UDD-FLB-W

Issue Date: 4/2/2026

Test Information

Test Method: LM-79-2024
Report Number: P1439934
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-H865D850-X4F0-XX-UDD-FLB-W
Description: DEFINE 4, DIRECT RECESSED WITH BATWING FLUSH OPTIC
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

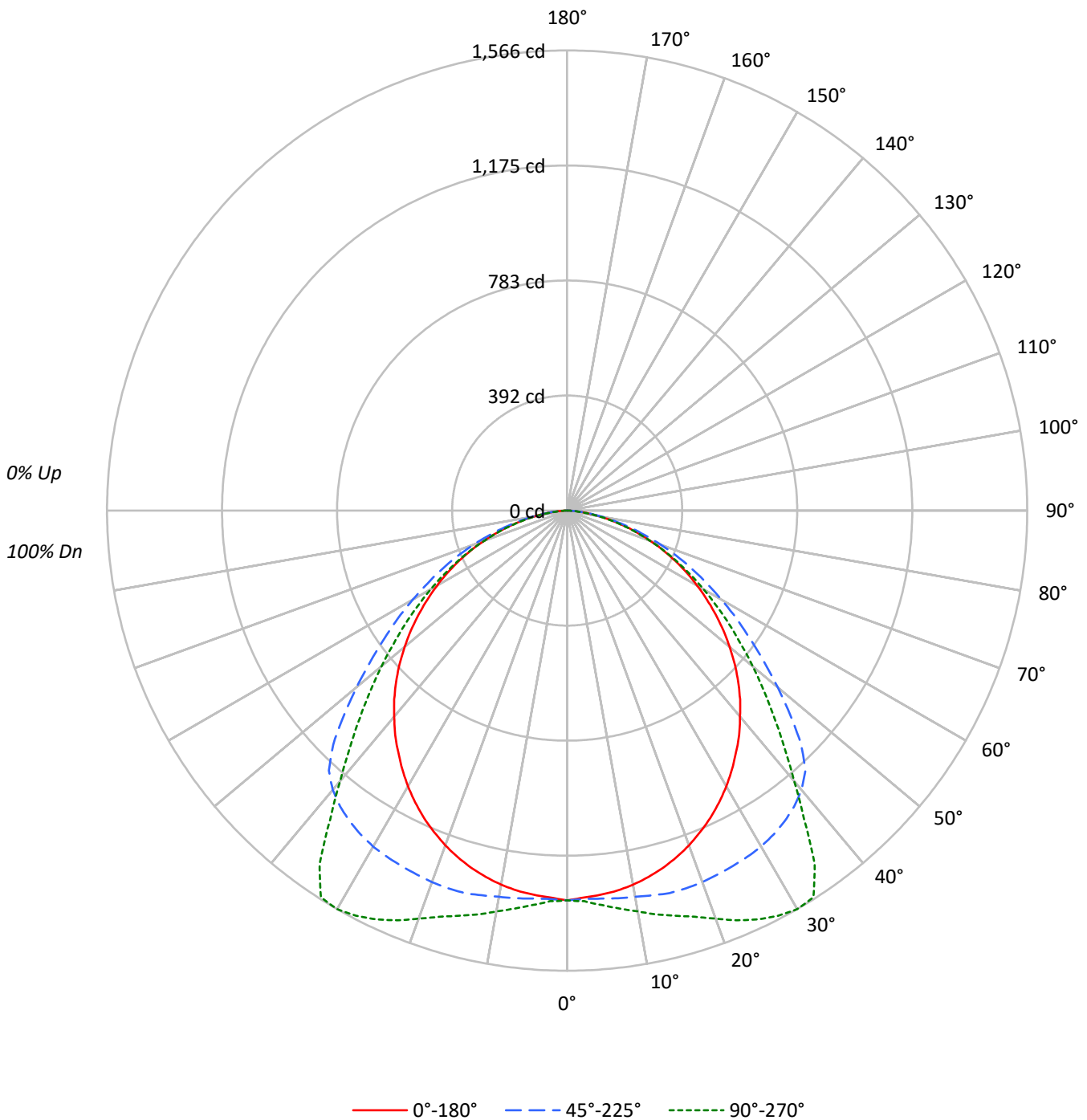
Lumens per Lamp: N/A
Luminaire Lumens: 4032.3 lumens
Efficiency: N/A
Efficacy: 130.5 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.53 / 1.51
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 30.9
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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	109	105	101	97	107	103	99	95	98	95	92	94	92	90	91	89	87	85					85			
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	77	73	71					71			
3	91	81	73	67	89	79	72	66	76	70	65	74	68	64	71	66	63	60					60			
4	83	72	63	57	81	70	62	56	68	61	55	66	60	55	63	58	54	52					52			
5	77	64	55	49	75	63	55	49	61	54	48	59	53	47	57	52	47	45					45			
6	71	58	49	43	69	57	48	42	55	48	42	53	47	42	52	46	41	39					39			
7	66	52	44	38	64	52	43	37	50	43	37	49	42	37	47	41	37	35					35			
8	61	48	39	34	60	47	39	33	46	38	33	44	38	33	43	37	33	31					31			
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	28					28			
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25					25			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11731	11731	11731
5°	11649	11764	11961
10°	11608	11982	12438
15°	11525	12336	13063
20°	11405	12656	13905
25°	11254	13020	14976
30°	11060	13479	15992
35°	10821	13928	15853
40°	10565	14322	13871
45°	10289	14083	12471
50°	9923	12859	11337
55°	9514	11701	10357
60°	9048	10730	9487
65°	8500	9778	8663
70°	7776	8750	7742
75°	6849	7519	6716
80°	5636	6033	5438
85°	3966	4098	3703

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 14083 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.3	3.2
10°-20°	381.5	9.5
20°-30°	621.0	15.4
30°-40°	788.6	19.6
40°-50°	768.5	19.1
50°-60°	630.1	15.6
60°-70°	439.6	10.9
70°-80°	225.6	5.6
80°-90°	50.0	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°	1129.9	28.0
0°-40°	1918.5	47.6
0°-60°	3317.1	82.3
0°-90°	4032.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4032.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1327	1327	1327	1327	1327	
5°	1312	1332	1326	1335	1348	125
15°	1259	1298	1348	1401	1427	355
25°	1154	1228	1335	1473	1535	531
35°	1003	1100	1290	1478	1469	627
45°	823	924	1126	1033	997	634
55°	617	712	759	695	672	552
65°	406	465	467	430	414	402
75°	200	223	220	204	197	213
85°	39	40	40	38	36	49
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1326.8	1326.8	1326.8	1326.8	1326.8
2.5°	1317.7	1334.6	1322.9	1328.1	1330.7
5°	1312.5	1332.0	1325.5	1334.6	1347.7
7.5°	1304.7	1326.8	1330.7	1349.0	1365.9
10°	1293.0	1319.0	1334.6	1365.9	1385.4
12.5°	1277.3	1309.9	1341.1	1384.1	1407.6
15°	1259.1	1298.2	1347.7	1401.0	1427.1
17.5°	1237.0	1283.9	1347.7	1414.1	1449.2
20°	1212.2	1266.9	1345.1	1431.0	1477.9
22.5°	1183.6	1248.7	1339.8	1450.5	1509.1
25°	1153.6	1227.9	1334.6	1472.7	1535.2
27.5°	1119.8	1203.1	1328.1	1489.6	1554.7
30°	1083.3	1173.2	1320.3	1497.4	1566.4
32.5°	1044.3	1138.0	1307.3	1497.4	1559.9
35°	1002.6	1100.3	1290.4	1477.9	1468.8
37.5°	962.2	1059.9	1269.5	1382.8	1325.5
40°	915.4	1016.9	1240.9	1248.7	1201.8
42.5°	871.1	971.4	1200.5	1135.4	1093.8
45°	822.9	924.5	1126.3	1032.6	997.4
47.5°	773.4	873.7	1030.0	940.1	907.6
50°	721.4	822.9	934.9	852.9	824.2
52.5°	670.6	768.2	843.8	772.1	744.8
55°	617.2	712.2	759.1	695.3	671.9
57.5°	563.8	654.9	682.3	623.7	601.6
60°	511.7	593.8	606.8	556.0	536.5
62.5°	459.6	529.9	535.2	490.9	474.0
65°	406.3	464.8	467.4	429.7	414.1
67.5°	354.2	402.3	402.3	369.8	356.8
70°	300.8	341.1	338.5	312.5	299.5
72.5°	250.0	278.6	276.0	256.5	247.4
75°	200.5	222.7	220.1	204.4	196.6
77.5°	153.6	169.3	166.7	156.3	149.7
80°	110.7	119.8	118.5	110.7	106.8
82.5°	72.9	78.1	75.5	70.3	67.7
85°	39.1	40.4	40.4	37.8	36.5
87.5°	14.3	14.3	14.3	14.3	13.0
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	20.24	21.84	20.60	22.15	22.47	20.02	21.62	20.39	21.94	22.25
	3H	21.74	23.18	22.12	23.51	23.87	21.49	22.93	21.87	23.26	23.62
	4H	22.24	23.60	22.64	23.95	24.32	21.99	23.34	22.39	23.69	24.07
	6H	22.57	23.82	22.98	24.18	24.57	22.31	23.56	22.72	23.92	24.32
	8H	22.65	23.84	23.07	24.23	24.63	22.38	23.58	22.81	23.97	24.37
	12H	22.69	23.83	23.12	24.21	24.64	22.42	23.56	22.85	23.94	24.37
4H	2H	20.86	22.21	21.26	22.56	22.94	20.69	22.04	21.09	22.39	22.77
	3H	22.59	23.72	23.00	24.12	24.52	22.36	23.49	22.77	23.88	24.28
	4H	23.22	24.23	23.65	24.65	25.09	22.96	23.97	23.39	24.39	24.82
	6H	23.65	24.53	24.10	24.97	25.43	23.37	24.25	23.82	24.70	25.15
	8H	23.76	24.59	24.22	25.03	25.50	23.47	24.30	23.93	24.74	25.21
	12H	23.82	24.57	24.30	25.04	25.51	23.53	24.27	24.01	24.75	25.22
8H	4H	23.46	24.29	23.92	24.73	25.20	23.23	24.06	23.69	24.50	24.96
	6H	23.98	24.67	24.48	25.16	25.63	23.73	24.41	24.22	24.90	25.38
	8H	24.15	24.76	24.66	25.27	25.76	23.88	24.49	24.39	25.00	25.49
	12H	24.26	24.80	24.77	25.29	25.85	23.98	24.52	24.48	25.01	25.57
12H	4H	23.47	24.21	23.95	24.69	25.16	23.25	23.99	23.73	24.46	24.93
	6H	24.01	24.62	24.52	25.13	25.62	23.76	24.38	24.27	24.88	25.37
	8H	24.22	24.76	24.72	25.25	25.81	23.95	24.50	24.46	24.99	25.55