

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P931574

Luminaire Tested: DFN2DS-TR4F0-110DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931574
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-TR4F0-110DS840-RLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

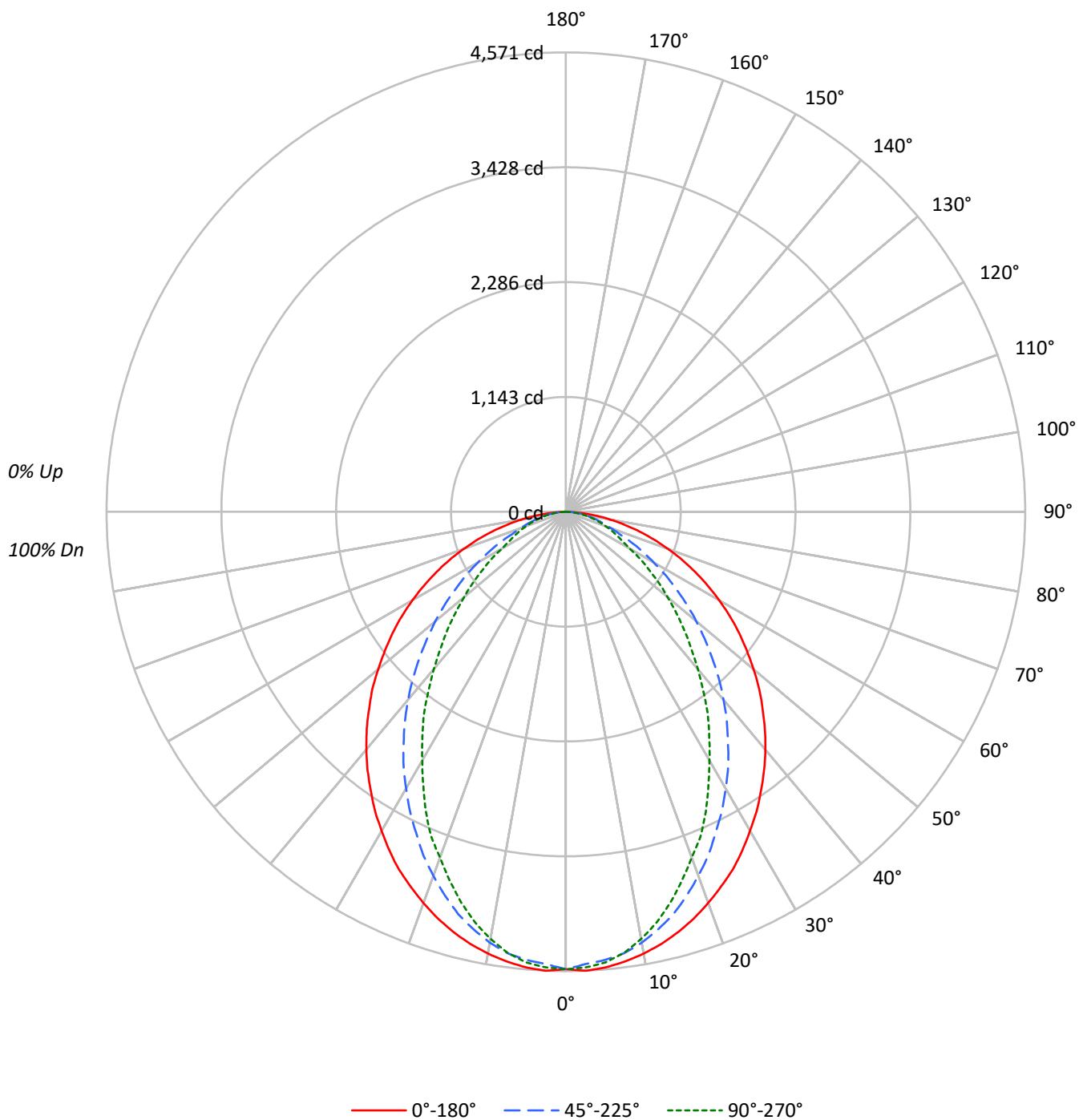
Lumens per Lamp: N/A
Luminaire Lumens: 9359.4 lumens
Efficiency: N/A
Efficacy: 78.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.96' x L: 3.43' x H: 0')
CIE Type: Direct

Input Watts (W): 118.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3615	3615	3615
5°	3629	3570	3590
10°	3601	3512	3482
15°	3560	3408	3309
20°	3503	3259	3095
25°	3444	3090	2888
30°	3363	2916	2622
35°	3283	2728	2388
40°	3203	2533	2118
45°	3110	2314	1874
50°	3013	2092	1634
55°	2915	1854	1403
60°	2801	1603	1165
65°	2671	1347	1060
70°	2516	1109	975
75°	2326	1011	911
80°	2053	904	830
85°	1613	713	713

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3110 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	426.5	4.6
10°-20°	1170.9	12.5
20°-30°	1643.8	17.6
30°-40°	1791.9	19.1
40°-50°	1646.9	17.6
50°-60°	1293.4	13.8
60°-70°	841.9	9.0
70°-80°	433.4	4.6
80°-90°	110.6	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°	3241.2	34.6
0°-40°	5033.1	53.8
0°-60°	7973.4	85.2
0°-90°	9359.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9359.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4551	4551	4551	4551	4551	
5°	4551	4530	4477	4514	4502	432
15°	4328	4283	4143	4065	4024	1220
25°	3929	3797	3525	3357	3295	1807
35°	3386	3175	2813	2554	2463	2119
45°	2768	2492	2059	1767	1668	2137
55°	2104	1783	1338	1092	1013	1880
65°	1421	1087	717	577	564	1409
75°	758	469	329	301	297	801
85°	177	90	78	78	78	212
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4550.8	4550.8	4550.8	4550.8	4550.8
2.5°	4571.4	4550.8	4505.4	4546.9	4538.6
5°	4550.8	4530.3	4476.6	4513.7	4501.5
7.5°	4513.7	4489.2	4431.5	4447.7	4427.1
10°	4464.4	4435.4	4353.3	4340.6	4316.2
12.5°	4402.7	4365.6	4254.1	4229.6	4184.2
15°	4328.4	4283.0	4143.1	4065.0	4023.8
17.5°	4241.9	4176.0	4002.9	3912.4	3846.4
20°	4143.1	4060.6	3854.8	3752.0	3661.2
22.5°	4036.1	3941.2	3702.3	3562.5	3500.8
25°	3929.0	3797.1	3525.3	3356.7	3294.6
27.5°	3801.5	3661.2	3360.6	3167.0	3072.2
30°	3665.6	3508.7	3179.3	2969.5	2858.1
32.5°	3533.6	3343.9	3006.6	2759.4	2656.3
35°	3385.5	3175.3	2813.1	2553.6	2462.7
37.5°	3241.3	3014.5	2631.7	2347.2	2244.6
40°	3088.8	2841.9	2442.1	2149.7	2042.7
42.5°	2932.3	2668.9	2253.0	1947.9	1845.2
45°	2767.7	2491.5	2059.4	1766.6	1667.9
47.5°	2611.2	2318.9	1874.1	1581.3	1490.9
50°	2438.1	2145.8	1692.8	1408.3	1322.2
52.5°	2269.1	1960.2	1519.7	1247.9	1169.7
55°	2104.3	1783.2	1338.3	1091.5	1013.3
57.5°	1935.7	1606.2	1178.0	947.3	881.3
60°	1762.7	1433.2	1008.9	799.2	733.2
62.5°	1594.0	1264.6	864.8	667.3	634.4
65°	1420.9	1087.1	716.6	576.8	564.1
67.5°	1256.3	922.4	576.8	506.4	494.2
70°	1083.2	762.1	477.6	436.5	419.9
72.5°	918.4	613.5	399.4	366.6	358.3
75°	757.7	469.3	329.4	300.6	296.7
77.5°	597.3	333.4	259.6	242.9	234.6
80°	448.7	239.0	197.5	181.4	181.4
82.5°	312.8	160.8	135.9	127.6	127.6
85°	177.0	90.5	78.2	78.2	78.2
87.5°	66.0	32.7	32.7	28.8	28.8
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	15.70	17.22	16.06	17.54	17.85	11.66	13.18	12.03	13.50	13.81
	3H	17.47	18.83	17.84	19.16	19.52	12.93	14.29	13.30	14.62	14.98
	4H	18.13	19.41	18.53	19.76	20.14	13.43	14.71	13.83	15.06	15.44
	6H	18.62	19.80	19.03	20.17	20.56	13.81	14.99	14.22	15.36	15.75
	8H	18.79	19.91	19.21	20.30	20.70	13.93	15.06	14.36	15.45	15.85
	12H	18.89	19.97	19.32	20.35	20.78	14.01	15.09	14.44	15.47	15.90
4H	2H	15.80	17.08	16.20	17.43	17.81	12.36	13.64	12.76	13.99	14.36
	3H	17.74	18.80	18.15	19.20	19.60	13.80	14.86	14.21	15.26	15.66
	4H	18.49	19.44	18.92	19.86	20.30	14.40	15.35	14.83	15.77	16.21
	6H	19.08	19.91	19.54	20.35	20.81	14.89	15.72	15.34	16.16	16.62
	8H	19.29	20.07	19.76	20.51	20.98	15.05	15.83	15.51	16.27	16.74
	12H	19.45	20.14	19.93	20.62	21.09	15.17	15.86	15.65	16.34	16.81
8H	4H	18.51	19.29	18.97	19.73	20.20	14.75	15.53	15.22	15.97	16.44
	6H	19.15	19.79	19.65	20.28	20.76	15.34	15.98	15.84	16.47	16.95
	8H	19.40	19.98	19.91	20.48	20.97	15.56	16.14	16.07	16.65	17.13
	12H	19.60	20.11	20.11	20.60	21.17	15.74	16.25	16.25	16.74	17.31
12H	4H	18.50	19.19	18.98	19.67	20.14	14.80	15.49	15.28	15.97	16.44
	6H	19.13	19.71	19.64	20.22	20.70	15.40	15.98	15.92	16.49	16.98
	8H	19.41	19.92	19.92	20.42	20.98	15.68	16.19	16.19	16.68	17.24