

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: P931534

Luminaire Tested: DFN2DS-TR4F0-090DS830-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931534
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-TR4F0-090DS830-RLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

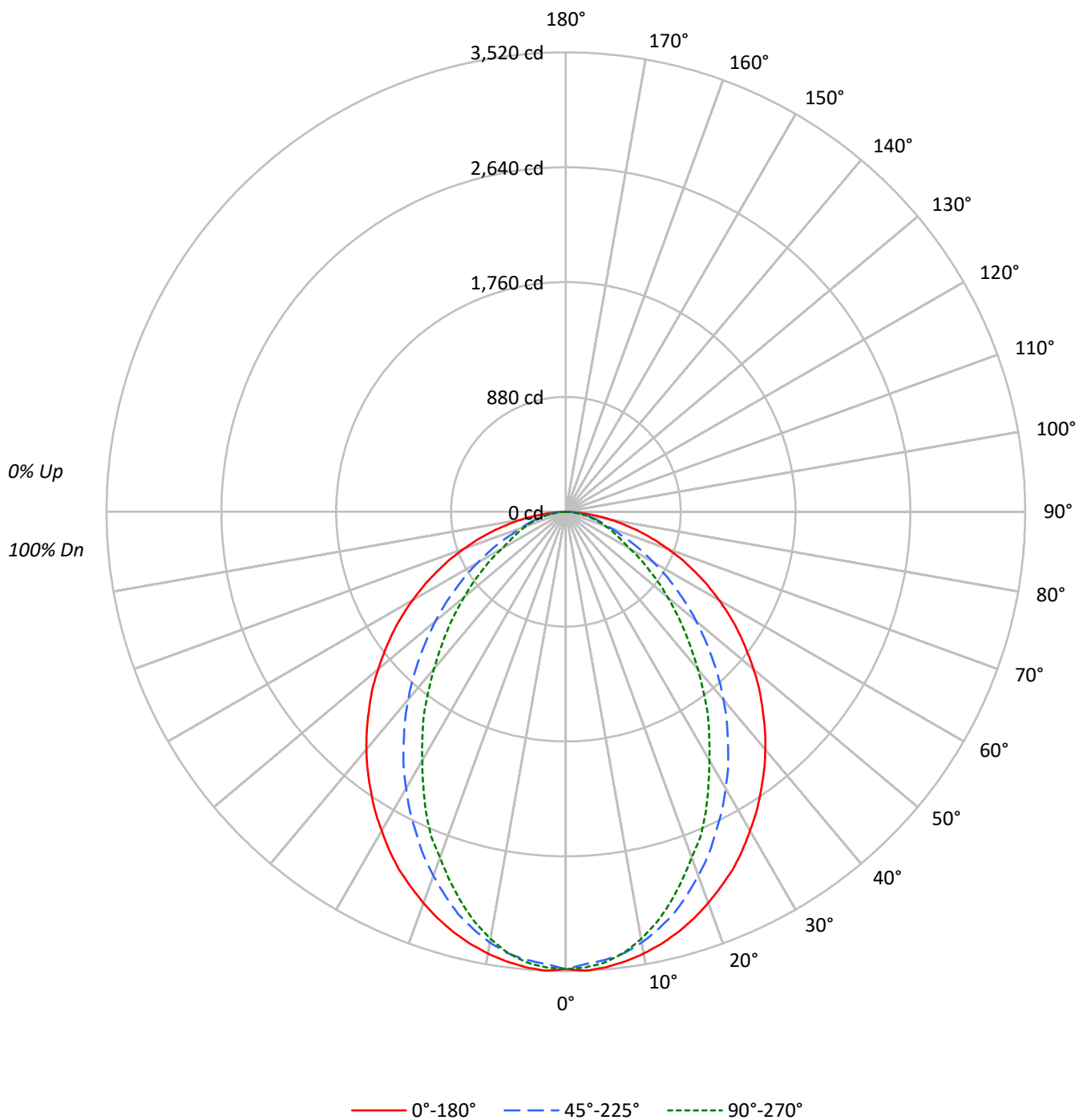
Lumens per Lamp: N/A
Luminaire Lumens: 7206.4 lumens
Efficiency: N/A
Efficacy: 76.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.96' x L: 3.43' x H: 0')
CIE Type: Direct

Input Watts (W): 93.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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°	2784	2784	2784
5°	2794	2749	2764
10°	2773	2704	2681
15°	2741	2624	2548
20°	2697	2509	2383
25°	2652	2379	2224
30°	2589	2246	2019
35°	2528	2101	1839
40°	2466	1950	1631
45°	2394	1781	1443
50°	2320	1611	1258
55°	2244	1427	1081
60°	2156	1234	897
65°	2056	1037	817
70°	1937	854	751
75°	1791	779	701
80°	1581	695	639
85°	1241	549	549

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2394 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	328.4	4.6
10°-20°	901.5	12.5
20°-30°	1265.7	17.6
30°-40°	1379.7	19.1
40°-50°	1268.1	17.6
50°-60°	995.9	13.8
60°-70°	648.2	9.0
70°-80°	333.7	4.6
80°-90°	85.2	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°	2495.6	34.6
0°-40°	3875.3	53.8
0°-60°	6139.3	85.2
0°-90°	7206.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7206.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3504	3504	3504	3504	3504	
5°	3504	3488	3447	3475	3466	332
15°	3333	3298	3190	3130	3098	939
25°	3025	2924	2714	2584	2537	1391
35°	2607	2445	2166	1966	1896	1632
45°	2131	1918	1586	1360	1284	1646
55°	1620	1373	1030	840	780	1448
65°	1094	837	552	444	434	1085
75°	583	361	254	231	228	617
85°	136	70	60	60	60	163
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3504.0	3504.0	3504.0	3504.0	3504.0
2.5°	3519.8	3504.0	3468.9	3500.9	3494.5
5°	3504.0	3488.1	3446.8	3475.3	3465.9
7.5°	3475.3	3456.5	3412.1	3424.5	3408.7
10°	3437.4	3415.1	3351.9	3342.1	3323.3
12.5°	3389.9	3361.3	3275.5	3256.7	3221.6
15°	3332.7	3297.8	3190.1	3129.8	3098.2
17.5°	3266.1	3215.3	3082.0	3012.4	2961.6
20°	3190.1	3126.5	2968.0	2888.9	2818.9
22.5°	3107.7	3034.7	2850.6	2742.9	2695.5
25°	3025.2	2923.6	2714.4	2584.5	2536.7
27.5°	2927.0	2818.9	2587.5	2438.5	2365.5
30°	2822.3	2701.6	2447.9	2286.4	2200.6
32.5°	2720.7	2574.7	2315.0	2124.6	2045.2
35°	2606.7	2444.9	2165.9	1966.1	1896.2
37.5°	2495.6	2321.1	2026.3	1807.3	1728.3
40°	2378.3	2188.2	1880.3	1655.3	1572.9
42.5°	2257.8	2055.0	1734.6	1499.9	1420.7
45°	2131.0	1918.4	1585.6	1360.2	1284.1
47.5°	2010.5	1785.5	1443.0	1217.5	1147.9
50°	1877.3	1652.2	1303.4	1084.3	1018.0
52.5°	1747.1	1509.3	1170.2	960.8	900.6
55°	1620.2	1373.0	1030.5	840.5	780.2
57.5°	1490.4	1236.8	907.1	729.4	678.6
60°	1357.1	1103.5	776.9	615.3	564.5
62.5°	1227.3	973.7	665.8	513.8	488.5
65°	1094.0	837.1	551.7	444.1	434.4
67.5°	967.2	710.2	444.1	389.9	380.5
70°	834.0	586.8	367.8	336.1	323.3
72.5°	707.2	472.3	307.5	282.2	275.9
75°	583.4	361.4	253.7	231.4	228.4
77.5°	459.9	256.7	199.8	187.1	180.7
80°	345.5	184.1	152.0	139.6	139.6
82.5°	240.9	123.8	104.7	98.3	98.3
85°	136.2	69.6	60.2	60.2	60.2
87.5°	50.8	25.2	25.2	22.2	22.2
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	14.79	16.31	15.16	16.63	16.94	10.75	12.27	11.12	12.59	12.90
	3H	16.56	17.92	16.93	18.25	18.61	12.02	13.38	12.40	13.71	14.07
	4H	17.22	18.50	17.62	18.85	19.23	12.52	13.80	12.92	14.15	14.53
	6H	17.71	18.90	18.12	19.26	19.65	12.90	14.08	13.31	14.45	14.84
	8H	17.88	19.00	18.30	19.39	19.79	13.02	14.15	13.45	14.54	14.94
	12H	17.98	19.06	18.41	19.44	19.87	13.11	14.18	13.54	14.57	15.00
4H	2H	14.90	16.18	15.30	16.53	16.90	11.45	12.73	11.85	13.08	13.46
	3H	16.83	17.89	17.24	18.29	18.69	12.89	13.95	13.30	14.35	14.75
	4H	17.58	18.54	18.01	18.95	19.39	13.49	14.45	13.92	14.86	15.30
	6H	18.17	19.00	18.63	19.44	19.90	13.98	14.81	14.44	15.25	15.71
	8H	18.38	19.16	18.85	19.61	20.07	14.14	14.92	14.60	15.36	15.83
	12H	18.54	19.23	19.02	19.71	20.18	14.26	14.95	14.74	15.43	15.90
8H	4H	17.60	18.38	18.07	18.82	19.29	13.84	14.62	14.31	15.07	15.53
	6H	18.24	18.88	18.74	19.37	19.85	14.43	15.07	14.93	15.56	16.04
	8H	18.49	19.07	19.00	19.58	20.07	14.65	15.23	15.17	15.74	16.23
	12H	18.69	19.20	19.20	19.70	20.26	14.83	15.34	15.34	15.83	16.40
12H	4H	17.59	18.28	18.07	18.76	19.23	13.89	14.58	14.37	15.06	15.53
	6H	18.22	18.80	18.73	19.31	19.80	14.49	15.07	15.01	15.58	16.07
	8H	18.51	19.02	19.02	19.51	20.07	14.77	15.28	15.28	15.77	16.33