

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: P930770

Luminaire Tested: DFN2DS-PN4F0-110DS930-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930770
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-PN4F0-110DS930-RLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

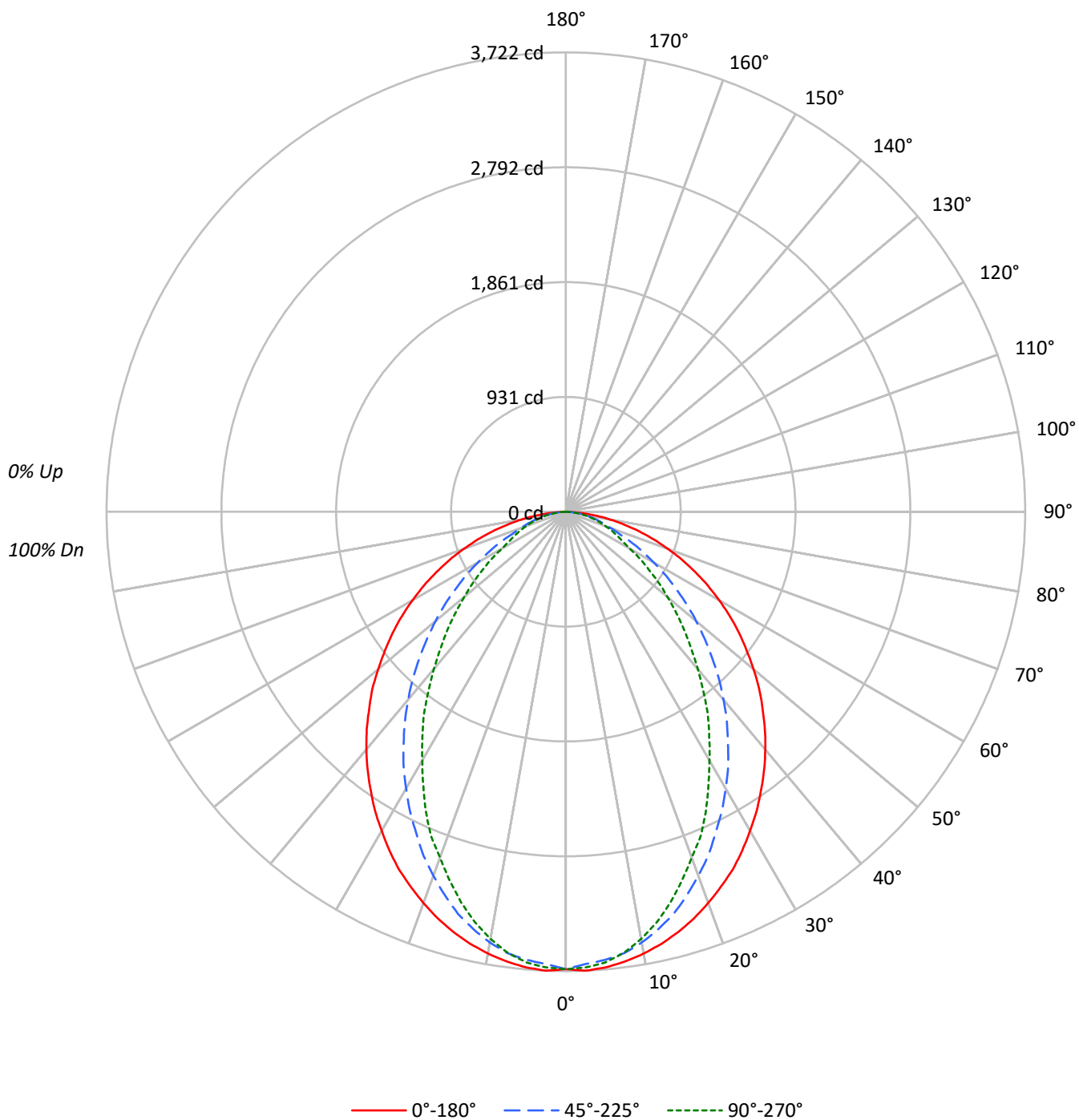
Lumens per Lamp: N/A
Luminaire Lumens: 7620.3 lumens
Efficiency: N/A
Efficacy: 64.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.94' x L: 3.74' x H: 0')
CIE Type: Direct

Input Watts (W): 119
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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°	2705	2705	2705
5°	2715	2671	2686
10°	2694	2627	2605
15°	2663	2549	2476
20°	2620	2438	2316
25°	2577	2312	2160
30°	2515	2182	1961
35°	2456	2041	1787
40°	2396	1895	1585
45°	2326	1731	1402
50°	2254	1565	1222
55°	2180	1387	1050
60°	2095	1199	872
65°	1998	1008	793
70°	1882	830	730
75°	1740	756	681
80°	1536	676	621
85°	1207	534	534

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2326 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	347.3	4.6
10°-20°	953.3	12.5
20°-30°	1338.4	17.6
30°-40°	1458.9	19.1
40°-50°	1340.9	17.6
50°-60°	1053.1	13.8
60°-70°	685.5	9.0
70°-80°	352.9	4.6
80°-90°	90.1	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°	2638.9	34.6
0°-40°	4097.9	53.8
0°-60°	6491.9	85.2
0°-90°	7620.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7620.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3705	3705	3705	3705	3705	
5°	3705	3688	3645	3675	3665	351
15°	3524	3487	3373	3310	3276	993
25°	3199	3092	2870	2733	2682	1471
35°	2756	2585	2290	2079	2005	1725
45°	2253	2028	1677	1438	1358	1740
55°	1713	1452	1090	889	825	1531
65°	1157	885	584	470	459	1147
75°	617	382	268	245	242	652
85°	144	74	64	64	64	173
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3705.2	3705.2	3705.2	3705.2	3705.2
2.5°	3721.9	3705.2	3668.2	3702.1	3695.3
5°	3705.2	3688.5	3644.8	3675.0	3665.1
7.5°	3675.0	3655.0	3608.1	3621.3	3604.5
10°	3634.8	3611.3	3544.4	3534.1	3514.2
12.5°	3584.6	3554.4	3463.7	3443.7	3406.7
15°	3524.1	3487.1	3373.3	3309.6	3276.1
17.5°	3453.7	3400.0	3259.1	3185.4	3131.7
20°	3373.3	3306.0	3138.5	3054.9	2980.9
22.5°	3286.2	3208.9	3014.4	2900.5	2850.3
25°	3199.0	3091.5	2870.3	2732.9	2682.4
27.5°	3095.1	2980.9	2736.1	2578.5	2501.3
30°	2984.4	2856.7	2588.5	2417.7	2327.0
32.5°	2877.0	2722.6	2447.9	2246.6	2162.7
35°	2756.4	2585.3	2290.4	2079.1	2005.1
37.5°	2639.1	2454.4	2142.7	1911.1	1827.6
40°	2514.8	2313.9	1988.4	1750.3	1663.2
42.5°	2387.5	2173.0	1834.3	1586.0	1502.4
45°	2253.4	2028.5	1676.7	1438.3	1358.0
47.5°	2126.0	1888.0	1525.8	1287.5	1213.9
50°	1985.1	1747.1	1378.2	1146.6	1076.5
52.5°	1847.4	1595.9	1237.3	1016.1	952.3
55°	1713.3	1451.8	1089.7	888.7	825.0
57.5°	1576.0	1307.7	959.1	771.3	717.5
60°	1435.1	1166.9	821.4	650.7	597.0
62.5°	1297.8	1029.6	704.1	543.3	516.5
65°	1156.9	885.1	583.5	469.6	459.3
67.5°	1022.8	751.0	469.6	412.3	402.4
70°	881.9	620.5	388.8	355.4	341.9
72.5°	747.8	499.5	325.2	298.5	291.7
75°	616.9	382.1	268.2	244.7	241.6
77.5°	486.3	271.5	211.3	197.8	191.0
80°	365.4	194.6	160.8	147.7	147.7
82.5°	254.7	130.9	110.7	103.9	103.9
85°	144.1	73.7	63.7	63.7	63.7
87.5°	53.7	26.7	26.7	23.5	23.5
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	14.69	16.21	15.06	16.53	16.84	10.65	12.17	11.02	12.49	12.80
	3H	16.46	17.82	16.83	18.15	18.51	11.92	13.28	12.30	13.61	13.97
	4H	17.12	18.40	17.52	18.75	19.13	12.42	13.70	12.82	14.05	14.43
	6H	17.61	18.80	18.02	19.16	19.55	12.80	13.98	13.21	14.35	14.74
	8H	17.78	18.90	18.20	19.29	19.69	12.92	14.05	13.35	14.44	14.84
	12H	17.88	18.96	18.31	19.34	19.77	13.01	14.08	13.44	14.47	14.90
4H	2H	14.80	16.08	15.20	16.42	16.80	11.35	12.63	11.75	12.98	13.36
	3H	16.73	17.79	17.14	18.19	18.59	12.79	13.85	13.20	14.25	14.65
	4H	17.48	18.43	17.91	18.85	19.29	13.39	14.35	13.82	14.76	15.20
	6H	18.07	18.90	18.53	19.34	19.80	13.88	14.71	14.34	15.15	15.61
	8H	18.28	19.06	18.75	19.51	19.97	14.04	14.82	14.50	15.26	15.73
	12H	18.44	19.13	18.92	19.61	20.08	14.16	14.85	14.64	15.33	15.80
8H	4H	17.50	18.28	17.97	18.72	19.19	13.74	14.52	14.21	14.97	15.43
	6H	18.14	18.78	18.64	19.27	19.75	14.33	14.97	14.83	15.46	15.94
	8H	18.39	18.97	18.90	19.48	19.96	14.55	15.13	15.07	15.64	16.13
	12H	18.59	19.10	19.10	19.60	20.16	14.73	15.24	15.24	15.73	16.30
12H	4H	17.49	18.18	17.97	18.66	19.13	13.79	14.48	14.27	14.96	15.43
	6H	18.12	18.70	18.63	19.21	19.70	14.39	14.97	14.91	15.48	15.97
	8H	18.41	18.92	18.91	19.41	19.97	14.67	15.18	15.18	15.67	16.23