

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: P930760

Luminaire Tested: DFN2DS-PN4F0-110DS830-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930760
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-PN4F0-110DS830-RLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

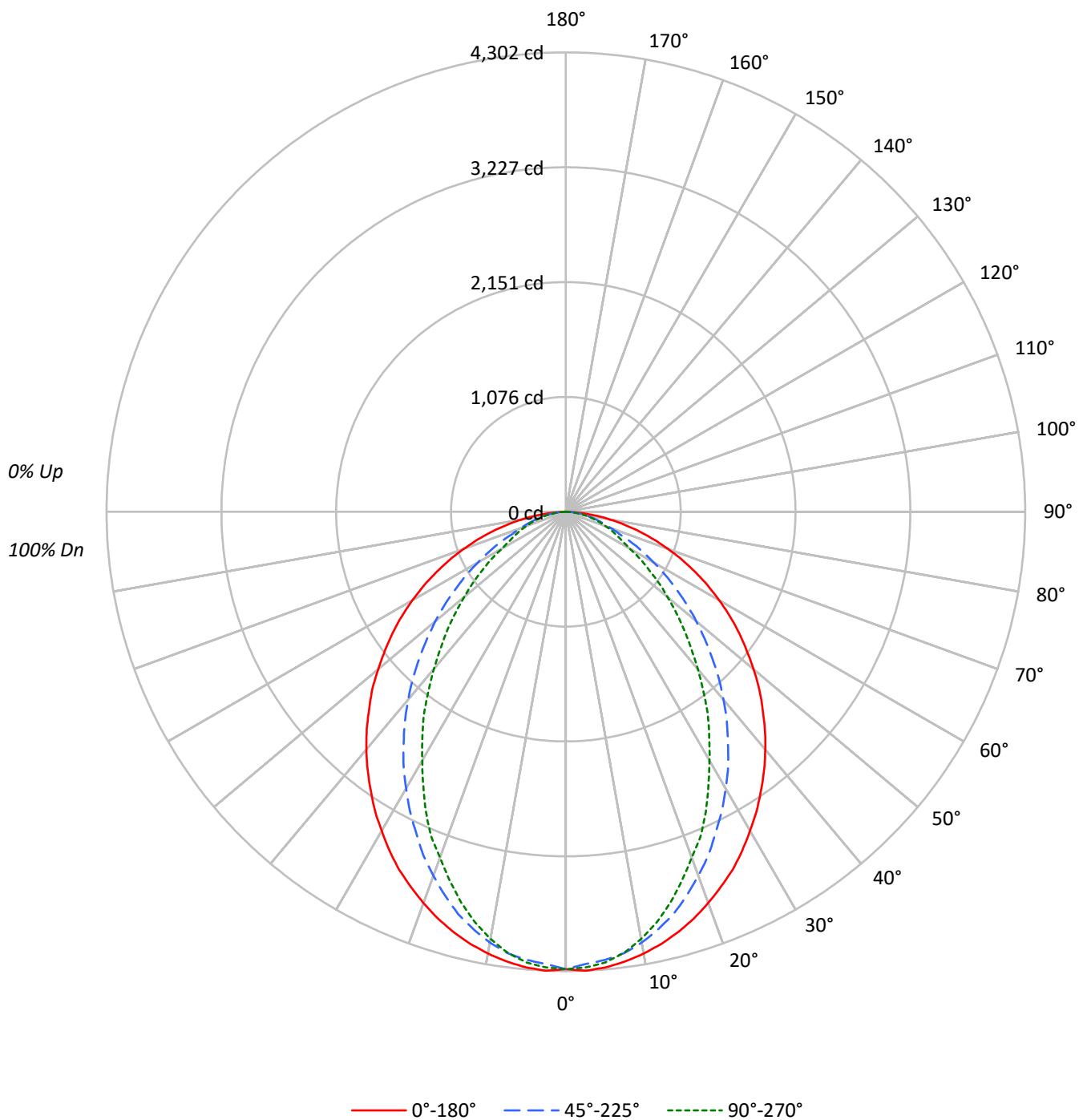
Lumens per Lamp: N/A
Luminaire Lumens: 8807.7 lumens
Efficiency: N/A
Efficacy: 74.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.94' x L: 3.74' x H: 0')
CIE Type: Direct

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°	3126	3126	3126
5°	3138	3087	3104
10°	3114	3037	3011
15°	3078	2946	2862
20°	3029	2818	2676
25°	2978	2672	2497
30°	2908	2522	2267
35°	2839	2359	2065
40°	2770	2190	1832
45°	2689	2001	1620
50°	2606	1809	1413
55°	2520	1603	1214
60°	2422	1386	1007
65°	2310	1165	917
70°	2175	959	843
75°	2011	874	787
80°	1775	781	718
85°	1394	616	616

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2689 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	401.4	4.6
10°-20°	1101.8	12.5
20°-30°	1546.9	17.6
30°-40°	1686.3	19.1
40°-50°	1549.9	17.6
50°-60°	1217.2	13.8
60°-70°	792.3	9.0
70°-80°	407.8	4.6
80°-90°	104.1	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°	3050.2	34.6
0°-40°	4736.4	53.8
0°-60°	7503.5	85.2
0°-90°	8807.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8807.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4283	4283	4283	4283	4283	
5°	4283	4263	4213	4248	4236	406
15°	4073	4030	3899	3825	3787	1148
25°	3697	3573	3318	3159	3100	1700
35°	3186	2988	2647	2403	2318	1994
45°	2604	2345	1938	1662	1570	2011
55°	1980	1678	1260	1027	954	1770
65°	1337	1023	674	543	531	1326
75°	713	442	310	283	279	754
85°	166	85	74	74	74	200
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4282.6	4282.6	4282.6	4282.6	4282.6
2.5°	4301.9	4282.6	4239.8	4278.9	4271.1
5°	4282.6	4263.3	4212.7	4247.7	4236.2
7.5°	4247.7	4224.6	4170.3	4185.6	4166.2
10°	4201.2	4174.0	4096.8	4084.8	4061.8
12.5°	4143.2	4108.3	4003.4	3980.3	3937.6
15°	4073.3	4030.5	3898.9	3825.4	3786.7
17.5°	3991.9	3929.8	3767.0	3681.8	3619.7
20°	3898.9	3821.2	3627.5	3530.9	3445.4
22.5°	3798.2	3708.9	3484.1	3352.5	3294.5
25°	3697.4	3573.3	3317.5	3158.8	3100.4
27.5°	3577.4	3445.4	3162.5	2980.3	2891.1
30°	3449.5	3301.9	2991.9	2794.4	2689.6
32.5°	3325.4	3146.8	2829.4	2596.7	2499.7
35°	3185.9	2988.1	2647.3	2403.0	2317.5
37.5°	3050.3	2836.8	2476.6	2208.9	2112.3
40°	2906.7	2674.4	2298.2	2023.0	1922.3
42.5°	2759.5	2511.6	2120.2	1833.1	1736.5
45°	2604.5	2344.6	1938.0	1662.4	1569.6
47.5°	2457.3	2182.2	1763.6	1488.1	1403.0
50°	2294.4	2019.4	1593.0	1325.3	1244.3
52.5°	2135.3	1844.6	1430.1	1174.4	1100.7
55°	1980.3	1678.1	1259.5	1027.2	953.6
57.5°	1821.6	1511.5	1108.5	891.5	829.3
60°	1658.8	1348.8	949.4	752.1	690.0
62.5°	1500.0	1190.0	813.8	627.9	597.0
65°	1337.2	1023.0	674.4	542.8	530.8
67.5°	1182.2	868.1	542.8	476.6	465.1
70°	1019.3	717.1	449.4	410.8	395.2
72.5°	864.3	577.4	375.9	345.0	337.1
75°	713.0	441.6	310.0	282.9	279.2
77.5°	562.1	313.8	244.3	228.6	220.8
80°	422.3	224.9	185.9	170.7	170.7
82.5°	294.4	151.3	127.9	120.1	120.1
85°	166.5	85.2	73.6	73.6	73.6
87.5°	62.1	30.8	30.8	27.1	27.1
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	15.19	16.72	15.56	17.03	17.34	11.16	12.68	11.52	12.99	13.31
	3H	16.96	18.33	17.34	18.65	19.01	12.42	13.79	12.80	14.11	14.48
	4H	17.63	18.91	18.03	19.26	19.63	12.92	14.20	13.32	14.55	14.93
	6H	18.12	19.30	18.53	19.66	20.06	13.30	14.49	13.72	14.85	15.24
	8H	18.28	19.41	18.71	19.80	20.20	13.43	14.55	13.85	14.94	15.35
	12H	18.38	19.46	18.81	19.84	20.27	13.51	14.59	13.94	14.97	15.40
4H	2H	15.30	16.58	15.70	16.93	17.31	11.85	13.13	12.25	13.48	13.86
	3H	17.23	18.29	17.64	18.69	19.10	13.29	14.36	13.70	14.76	15.16
	4H	17.98	18.94	18.41	19.35	19.79	13.89	14.85	14.33	15.27	15.70
	6H	18.57	19.41	19.03	19.85	20.31	14.38	15.21	14.84	15.66	16.12
	8H	18.79	19.57	19.25	20.01	20.48	14.54	15.32	15.01	15.77	16.23
	12H	18.94	19.64	19.42	20.11	20.59	14.66	15.36	15.14	15.83	16.30
8H	4H	18.01	18.78	18.47	19.23	19.69	14.25	15.02	14.71	15.47	15.94
	6H	18.64	19.29	19.14	19.78	20.25	14.83	15.48	15.33	15.97	16.45
	8H	18.89	19.47	19.41	19.98	20.47	15.06	15.63	15.57	16.14	16.63
	12H	19.10	19.61	19.61	20.10	20.66	15.23	15.74	15.74	16.24	16.80
12H	4H	17.99	18.68	18.47	19.16	19.63	14.29	14.99	14.77	15.46	15.93
	6H	18.62	19.20	19.14	19.71	20.20	14.90	15.48	15.41	15.98	16.47
	8H	18.91	19.42	19.42	19.91	20.47	15.17	15.68	15.68	16.17	16.74