

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: P930776

Luminaire Tested: DFN2DS-PN4F0-110DS950-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930776
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-PN4F0-110DS950-RLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

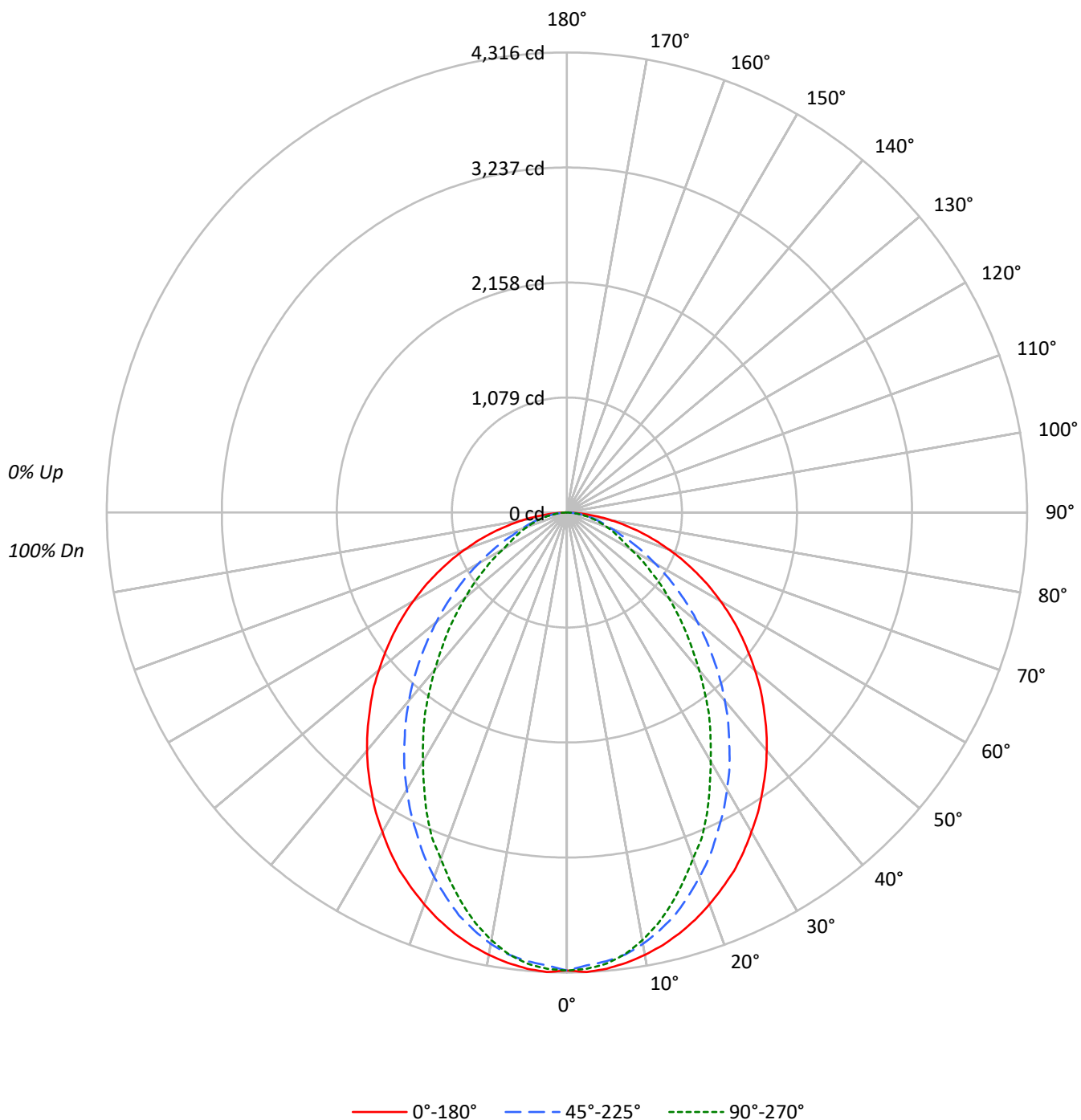
Lumens per Lamp: N/A
Luminaire Lumens: 8835.7 lumens
Efficiency: N/A
Efficacy: 74.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.94' x L: 3.74' x H: 0')
CIE Type: Direct

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°	3136	3136	3136
5°	3148	3097	3114
10°	3124	3046	3020
15°	3088	2956	2871
20°	3038	2827	2685
25°	2987	2681	2505
30°	2917	2530	2274
35°	2848	2367	2072
40°	2779	2197	1838
45°	2697	2007	1625
50°	2614	1815	1418
55°	2528	1608	1217
60°	2429	1391	1011
65°	2317	1168	920
70°	2182	962	846
75°	2017	877	790
80°	1781	784	720
85°	1400	618	618

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2697 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	402.6	4.6
10°-20°	1105.4	12.5
20°-30°	1551.9	17.6
30°-40°	1691.6	19.1
40°-50°	1554.8	17.6
50°-60°	1221.0	13.8
60°-70°	794.8	9.0
70°-80°	409.1	4.6
80°-90°	104.4	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°	3059.9	34.6
0°-40°	4751.5	53.8
0°-60°	7527.4	85.2
0°-90°	8835.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8835.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4296	4296	4296	4296	4296	
5°	4296	4277	4226	4261	4250	407
15°	4086	4043	3911	3838	3799	1151
25°	3709	3585	3328	3169	3110	1706
35°	3196	2998	2656	2411	2325	2000
45°	2613	2352	1944	1668	1575	2018
55°	1987	1683	1264	1030	957	1775
65°	1341	1026	676	544	532	1330
75°	715	443	311	284	280	757
85°	167	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°	4296.3	4296.3	4296.3	4296.3	4296.3
2.5°	4315.6	4296.3	4253.4	4292.6	4284.7
5°	4296.3	4276.9	4226.1	4261.2	4249.7
7.5°	4261.2	4238.0	4183.6	4198.9	4179.5
10°	4214.6	4187.3	4109.8	4097.8	4074.7
12.5°	4156.4	4121.3	4016.2	3993.0	3950.1
15°	4086.3	4043.4	3911.4	3837.6	3798.7
17.5°	4004.6	3942.4	3779.0	3693.5	3631.3
20°	3911.4	3833.4	3639.1	3542.1	3456.3
22.5°	3810.3	3720.7	3495.2	3363.2	3304.9
25°	3709.2	3584.7	3328.1	3168.9	3110.3
27.5°	3588.8	3456.3	3172.6	2989.8	2900.3
30°	3460.5	3312.4	3001.4	2803.3	2698.2
32.5°	3335.9	3156.9	2838.4	2605.0	2507.7
35°	3196.1	2997.6	2655.7	2410.7	2324.9
37.5°	3060.0	2845.9	2484.5	2215.9	2119.1
40°	2916.0	2682.9	2305.5	2029.5	1928.5
42.5°	2768.3	2519.6	2126.9	1839.0	1742.0
45°	2612.8	2352.1	1944.1	1667.7	1574.6
47.5°	2465.1	2189.2	1769.2	1492.8	1407.5
50°	2301.7	2025.8	1598.1	1329.5	1248.3
52.5°	2142.1	1850.5	1434.7	1178.1	1104.2
55°	1986.6	1683.4	1263.5	1030.4	956.6
57.5°	1827.4	1516.3	1112.1	894.3	832.0
60°	1664.1	1353.1	952.5	754.5	692.2
62.5°	1504.8	1193.8	816.4	629.9	598.9
65°	1341.4	1026.3	676.5	544.5	532.5
67.5°	1186.0	870.8	544.5	478.1	466.5
70°	1022.6	719.4	450.9	412.1	396.4
72.5°	867.0	579.2	377.1	346.1	338.2
75°	715.3	443.0	311.0	283.8	280.1
77.5°	563.9	314.8	245.0	229.4	221.5
80°	423.6	225.7	186.4	171.2	171.2
82.5°	295.3	151.8	128.3	120.5	120.5
85°	167.1	85.4	73.8	73.8	73.8
87.5°	62.3	30.9	30.9	27.2	27.2
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	15.21	16.73	15.57	17.04	17.36	11.17	12.69	11.53	13.00	13.32
	3H	16.97	18.34	17.35	18.66	19.03	12.43	13.80	12.81	14.12	14.49
	4H	17.64	18.92	18.04	19.27	19.65	12.93	14.21	13.33	14.56	14.94
	6H	18.13	19.31	18.54	19.68	20.07	13.31	14.50	13.73	14.86	15.26
	8H	18.29	19.42	18.72	19.81	20.21	13.44	14.57	13.87	14.95	15.36
	12H	18.39	19.47	18.83	19.86	20.28	13.52	14.60	13.95	14.98	15.41
4H	2H	15.31	16.59	15.71	16.94	17.32	11.86	13.14	12.26	13.49	13.87
	3H	17.24	18.31	17.65	18.71	19.11	13.30	14.37	13.72	14.77	15.17
	4H	17.99	18.95	18.43	19.36	19.80	13.90	14.86	14.34	15.28	15.72
	6H	18.58	19.42	19.04	19.86	20.32	14.39	15.22	14.85	15.67	16.13
	8H	18.80	19.58	19.26	20.02	20.49	14.55	15.33	15.02	15.78	16.24
	12H	18.95	19.65	19.43	20.13	20.60	14.67	15.37	15.15	15.84	16.32
8H	4H	18.02	18.79	18.48	19.24	19.71	14.26	15.04	14.72	15.48	15.95
	6H	18.65	19.30	19.15	19.79	20.27	14.84	15.49	15.34	15.98	16.46
	8H	18.90	19.48	19.42	19.99	20.48	15.07	15.64	15.58	16.15	16.64
	12H	19.11	19.62	19.62	20.11	20.68	15.25	15.76	15.75	16.25	16.81
12H	4H	18.00	18.70	18.48	19.17	19.64	14.30	15.00	14.78	15.47	15.95
	6H	18.63	19.21	19.15	19.72	20.21	14.91	15.49	15.42	16.00	16.48
	8H	18.92	19.43	19.43	19.92	20.49	15.18	15.69	15.69	16.18	16.75