

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: P931139

Luminaire Tested: DFN2DS-SQ4F0-100DS835-FLL

Issue Date: 11/20/2024

**Test Information**

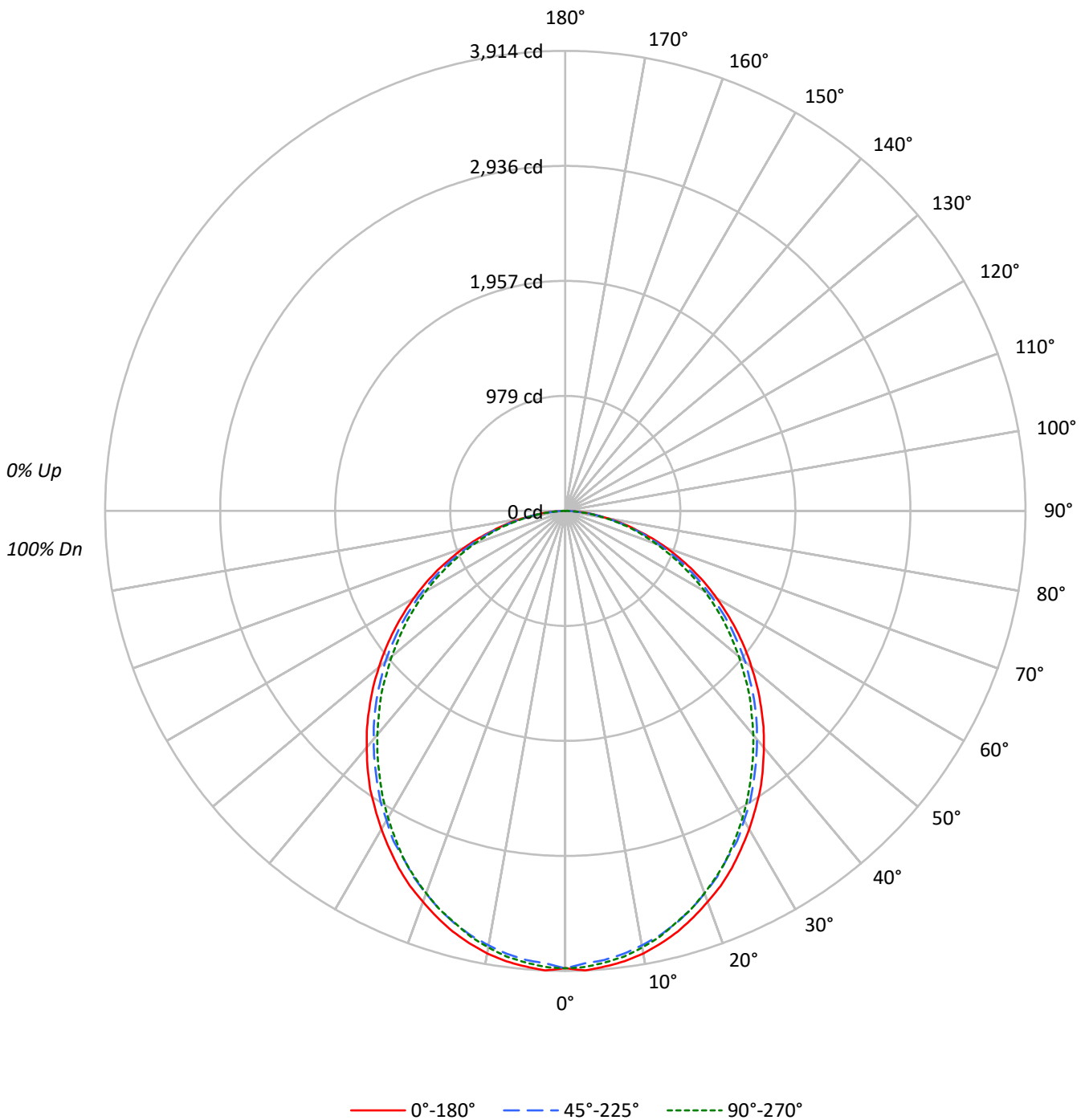
Test Method: LM-79-2019  
Report Number: P931139  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/20/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DS-SQ4F0-100DS835-FLL  
Description: 4 foot, Square Define Geo, with Direct Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9900.0 lumens  
Efficiency: N/A  
Efficacy: 98.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 100.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9968  
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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	86	86	86	84
2	99	91	85	79	97	89	83	78	86	81	76	83	78	74	80	76	73	73	73	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	71	66	62	62	62	62	60
4	83	71	63	56	81	70	62	56	68	61	55	65	59	54	63	58	54	54	54	54	51
5	77	64	55	49	75	63	55	48	61	53	48	59	52	47	57	51	47	47	47	47	45
6	71	58	49	43	69	57	48	42	55	48	42	53	47	42	52	46	41	41	41	41	39
7	66	52	44	38	64	52	43	38	50	43	37	49	42	37	47	41	37	37	37	37	35
8	61	48	40	34	60	47	39	34	46	39	33	45	38	33	44	38	33	33	33	33	31
9	57	44	36	30	56	43	36	30	42	35	30	41	35	30	40	34	30	30	30	30	28
10	54	41	33	28	53	40	33	28	39	32	27	38	32	27	37	32	27	27	27	27	26

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2730	2730	2730
5°	2741	2701	2717
10°	2725	2674	2687
15°	2691	2639	2637
20°	2643	2587	2584
25°	2595	2523	2523
30°	2534	2465	2443
35°	2478	2394	2359
40°	2406	2323	2279
45°	2336	2254	2198
50°	2259	2181	2103
55°	2179	2096	2019
60°	2090	1995	1922
65°	1994	1895	1808
70°	1873	1773	1689
75°	1704	1633	1593
80°	1512	1466	1391
85°	1233	1176	1055

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2336 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	366.2	3.7
10°-20°	1030.4	10.4
20°-30°	1514.3	15.3
30°-40°	1758.8	17.8
40°-50°	1756.6	17.7
50°-60°	1531.7	15.5
60°-70°	1132.3	11.4
70°-80°	640.6	6.5
80°-90°	169.1	1.7
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°	2911.0	29.4
0°-40°	4669.7	47.2
0°-60°	7958.0	80.4
0°-90°	9900.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9900.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3891	3891	3891	3891	3891	
5°	3891	3876	3835	3865	3858	369
15°	3704	3682	3633	3648	3630	1043
25°	3352	3323	3259	3266	3259	1543
35°	2892	2855	2795	2772	2754	1806
45°	2354	2327	2271	2230	2215	1816
55°	1781	1759	1714	1669	1650	1592
65°	1201	1179	1141	1108	1089	1188
75°	628	621	602	580	588	671
85°	153	150	146	135	131	180
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3891.1	3891.1	3891.1	3891.1	3891.1
2.5°	3913.7	3895.0	3853.7	3891.1	3883.9
5°	3891.1	3876.4	3835.1	3864.9	3857.7
7.5°	3864.9	3842.6	3801.3	3831.5	3824.0
10°	3824.0	3797.8	3752.9	3782.7	3771.6
12.5°	3767.6	3745.4	3700.5	3719.2	3711.6
15°	3704.1	3681.9	3633.0	3648.1	3629.5
17.5°	3625.5	3603.3	3554.4	3573.1	3554.4
20°	3539.3	3517.1	3464.7	3475.8	3461.1
22.5°	3453.6	3419.9	3371.0	3371.0	3363.5
25°	3352.4	3322.6	3259.1	3266.2	3259.1
27.5°	3240.0	3213.8	3165.4	3154.3	3135.6
30°	3128.1	3097.9	3041.9	3030.8	3015.7
32.5°	3008.2	2986.0	2926.0	2903.4	2888.3
35°	2892.3	2855.0	2795.0	2772.4	2753.7
37.5°	2761.3	2727.5	2667.6	2641.4	2622.7
40°	2626.7	2596.5	2536.6	2503.3	2488.2
42.5°	2495.7	2465.5	2406.0	2368.3	2346.1
45°	2353.6	2327.4	2271.0	2230.1	2215.1
47.5°	2215.1	2188.9	2128.9	2087.6	2065.4
50°	2069.0	2050.3	1997.9	1945.5	1926.9
52.5°	1926.9	1900.7	1852.2	1811.0	1784.8
55°	1781.2	1758.6	1713.7	1668.8	1650.2
57.5°	1635.1	1616.4	1567.6	1522.8	1507.7
60°	1489.0	1474.3	1421.9	1380.6	1369.5
62.5°	1346.9	1320.7	1283.4	1246.1	1231.0
65°	1201.2	1178.6	1141.3	1107.5	1088.9
67.5°	1051.6	1032.5	999.2	973.0	957.9
70°	913.0	897.9	864.2	838.0	823.3
72.5°	770.9	755.8	737.2	711.0	699.8
75°	628.4	621.3	602.2	580.0	587.5
77.5°	501.4	486.3	478.7	467.6	456.5
80°	374.3	370.4	362.8	351.7	344.2
82.5°	254.5	254.5	250.9	235.8	235.8
85°	153.2	149.7	146.1	134.6	131.0
87.5°	67.5	59.9	52.4	41.3	37.3
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	14.77	16.38	15.14	16.70	17.01	14.33	15.94	14.69	16.25	16.57
	3H	16.52	17.98	16.90	18.30	18.66	16.03	17.49	16.41	17.81	18.17
	4H	17.17	18.54	17.57	18.89	19.26	16.67	18.04	17.07	18.39	18.77
	6H	17.64	18.91	18.05	19.27	19.66	17.14	18.40	17.55	18.77	19.16
	8H	17.78	18.99	18.21	19.38	19.78	17.28	18.49	17.70	18.88	19.28
	12H	17.87	19.03	18.30	19.41	19.84	17.36	18.52	17.79	18.90	19.33
4H	2H	15.33	16.70	15.73	17.05	17.43	14.98	16.35	15.38	16.70	17.07
	3H	17.31	18.45	17.72	18.85	19.25	16.90	18.05	17.31	18.45	18.85
	4H	18.08	19.12	18.52	19.53	19.97	17.66	18.70	18.09	19.11	19.55
	6H	18.68	19.59	19.14	20.03	20.48	18.25	19.15	18.70	19.59	20.05
	8H	18.87	19.72	19.33	20.16	20.62	18.43	19.28	18.89	19.72	20.19
	12H	19.00	19.76	19.48	20.24	20.71	18.55	19.31	19.03	19.79	20.26
8H	4H	18.36	19.20	18.82	19.65	20.11	17.98	18.83	18.44	19.27	19.74
	6H	19.07	19.78	19.57	20.26	20.74	18.69	19.39	19.18	19.88	20.36
	8H	19.33	19.96	19.84	20.47	20.95	18.94	19.57	19.45	20.08	20.56
	12H	19.53	20.09	20.04	20.58	21.14	19.12	19.68	19.62	20.17	20.73
12H	4H	18.38	19.14	18.86	19.62	20.09	18.02	18.78	18.50	19.25	19.72
	6H	19.12	19.75	19.63	20.26	20.74	18.75	19.38	19.26	19.89	20.37
	8H	19.43	19.99	19.94	20.48	21.04	19.05	19.61	19.56	20.10	20.66