

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: P931164

Luminaire Tested: DFN2DS-SQ4F0-110DS927-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931164
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-SQ4F0-110DS927-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

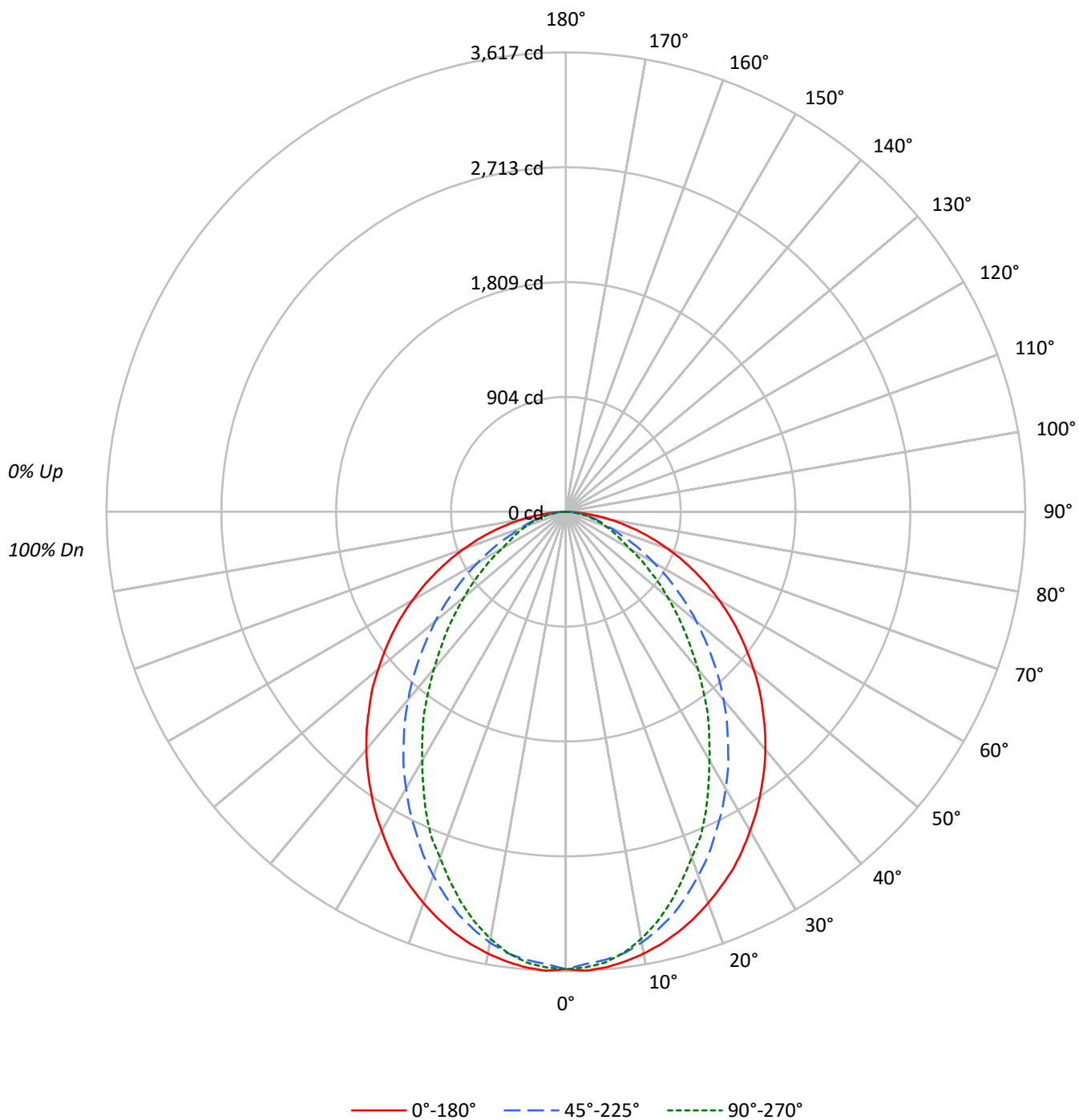
Lumens per Lamp: N/A
Luminaire Lumens: 7405.2 lumens
Efficiency: N/A
Efficacy: 65.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 113
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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°	2527	2527	2527
5°	2536	2495	2509
10°	2517	2454	2433
15°	2488	2381	2313
20°	2448	2277	2163
25°	2407	2160	2018
30°	2350	2038	1832
35°	2294	1907	1669
40°	2239	1770	1480
45°	2173	1617	1309
50°	2106	1462	1142
55°	2037	1295	981
60°	1957	1120	814
65°	1867	941	741
70°	1758	775	682
75°	1625	707	636
80°	1435	632	580
85°	1127	498	498

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2173 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	337.5	4.6
10°-20°	926.4	12.5
20°-30°	1300.6	17.6
30°-40°	1417.8	19.1
40°-50°	1303.1	17.6
50°-60°	1023.4	13.8
60°-70°	666.1	9.0
70°-80°	342.9	4.6
80°-90°	87.6	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°	2564.5	34.6
0°-40°	3982.2	53.8
0°-60°	6308.7	85.2
0°-90°	7405.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7405.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3601	3601	3601	3601	3601	
5°	3601	3584	3542	3571	3562	341
15°	3425	3389	3278	3216	3184	965
25°	3109	3004	2789	2656	2607	1430
35°	2679	2512	2226	2020	1948	1677
45°	2190	1971	1629	1398	1320	1691
55°	1665	1411	1059	864	802	1488
65°	1124	860	567	456	446	1115
75°	600	371	261	238	235	634
85°	140	72	62	62	62	168
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3600.7	3600.7	3600.7	3600.7	3600.7
2.5°	3616.9	3600.7	3564.7	3597.6	3591.0
5°	3600.7	3584.4	3541.9	3571.3	3561.6
7.5°	3571.3	3551.9	3506.3	3519.1	3502.8
10°	3532.2	3509.4	3444.4	3434.3	3415.0
12.5°	3483.5	3454.1	3365.9	3346.5	3310.6
15°	3424.7	3388.7	3278.1	3216.2	3183.7
17.5°	3356.3	3304.1	3167.1	3095.5	3043.3
20°	3278.1	3212.7	3049.9	2968.7	2896.7
22.5°	3193.4	3118.3	2929.3	2818.6	2769.9
25°	3108.7	3004.3	2789.3	2655.8	2606.7
27.5°	3007.8	2896.7	2658.9	2505.7	2430.7
30°	2900.2	2776.1	2515.5	2349.5	2261.3
32.5°	2795.8	2645.8	2378.9	2183.2	2101.7
35°	2678.6	2512.3	2225.8	2020.4	1948.5
37.5°	2564.6	2385.1	2082.2	1857.2	1776.0
40°	2443.9	2248.6	1932.2	1700.9	1616.2
42.5°	2320.1	2111.6	1782.6	1541.2	1460.0
45°	2189.8	1971.3	1629.4	1397.7	1319.6
47.5°	2066.0	1834.7	1482.8	1251.1	1179.6
50°	1929.1	1697.8	1339.4	1114.3	1046.2
52.5°	1795.3	1550.9	1202.4	987.4	925.5
55°	1664.9	1410.9	1058.9	863.6	801.7
57.5°	1531.6	1270.8	932.0	749.5	697.3
60°	1394.6	1134.0	798.3	632.3	580.1
62.5°	1261.2	1000.5	684.2	527.9	502.0
65°	1124.2	860.1	567.0	456.4	446.3
67.5°	994.0	729.8	456.4	400.7	391.0
70°	857.0	602.9	377.9	345.4	332.2
72.5°	726.7	485.4	316.0	290.0	283.5
75°	599.5	371.3	260.6	237.8	234.7
77.5°	472.6	263.8	205.4	192.2	185.6
80°	355.1	189.1	156.3	143.5	143.5
82.5°	247.5	127.2	107.6	101.0	101.0
85°	140.0	71.6	61.9	61.9	61.9
87.5°	52.2	25.9	25.9	22.8	22.8
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	14.45	15.98	14.82	16.29	16.60	10.42	11.94	10.78	12.25	12.57
	3H	16.22	17.59	16.60	17.91	18.27	11.68	13.05	12.06	13.37	13.74
	4H	16.89	18.17	17.29	18.52	18.89	12.18	13.46	12.58	13.81	14.19
	6H	17.38	18.56	17.79	18.92	19.32	12.56	13.75	12.98	14.11	14.50
	8H	17.54	18.67	17.97	19.06	19.46	12.69	13.81	13.11	14.20	14.60
	12H	17.64	18.72	18.07	19.10	19.53	12.77	13.85	13.20	14.23	14.66
4H	2H	14.56	15.84	14.96	16.19	16.57	11.11	12.39	11.51	12.74	13.12
	3H	16.49	17.55	16.90	17.95	18.36	12.55	13.62	12.96	14.02	14.42
	4H	17.24	18.20	17.67	18.61	19.05	13.15	14.11	13.59	14.53	14.96
	6H	17.83	18.67	18.29	19.11	19.57	13.64	14.47	14.10	14.92	15.38
	8H	18.05	18.83	18.51	19.27	19.74	13.80	14.58	14.27	15.02	15.49
	12H	18.20	18.90	18.68	19.37	19.85	13.92	14.62	14.40	15.09	15.56
8H	4H	17.27	18.04	17.73	18.49	18.95	13.51	14.28	13.97	14.73	15.20
	6H	17.90	18.55	18.40	19.04	19.51	14.09	14.74	14.59	15.23	15.70
	8H	18.15	18.73	18.67	19.24	19.73	14.32	14.89	14.83	15.40	15.89
	12H	18.36	18.87	18.87	19.36	19.92	14.49	15.00	15.00	15.50	16.06
12H	4H	17.25	17.94	17.73	18.42	18.89	13.55	14.24	14.03	14.72	15.19
	6H	17.88	18.46	18.40	18.97	19.46	14.16	14.73	14.67	15.24	15.73
	8H	18.17	18.68	18.68	19.17	19.74	14.43	14.94	14.94	15.43	16.00