

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: P931144

Luminaire Tested: DFN2DS-SQ4F0-100DS850-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931144
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-SQ4F0-100DS850-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

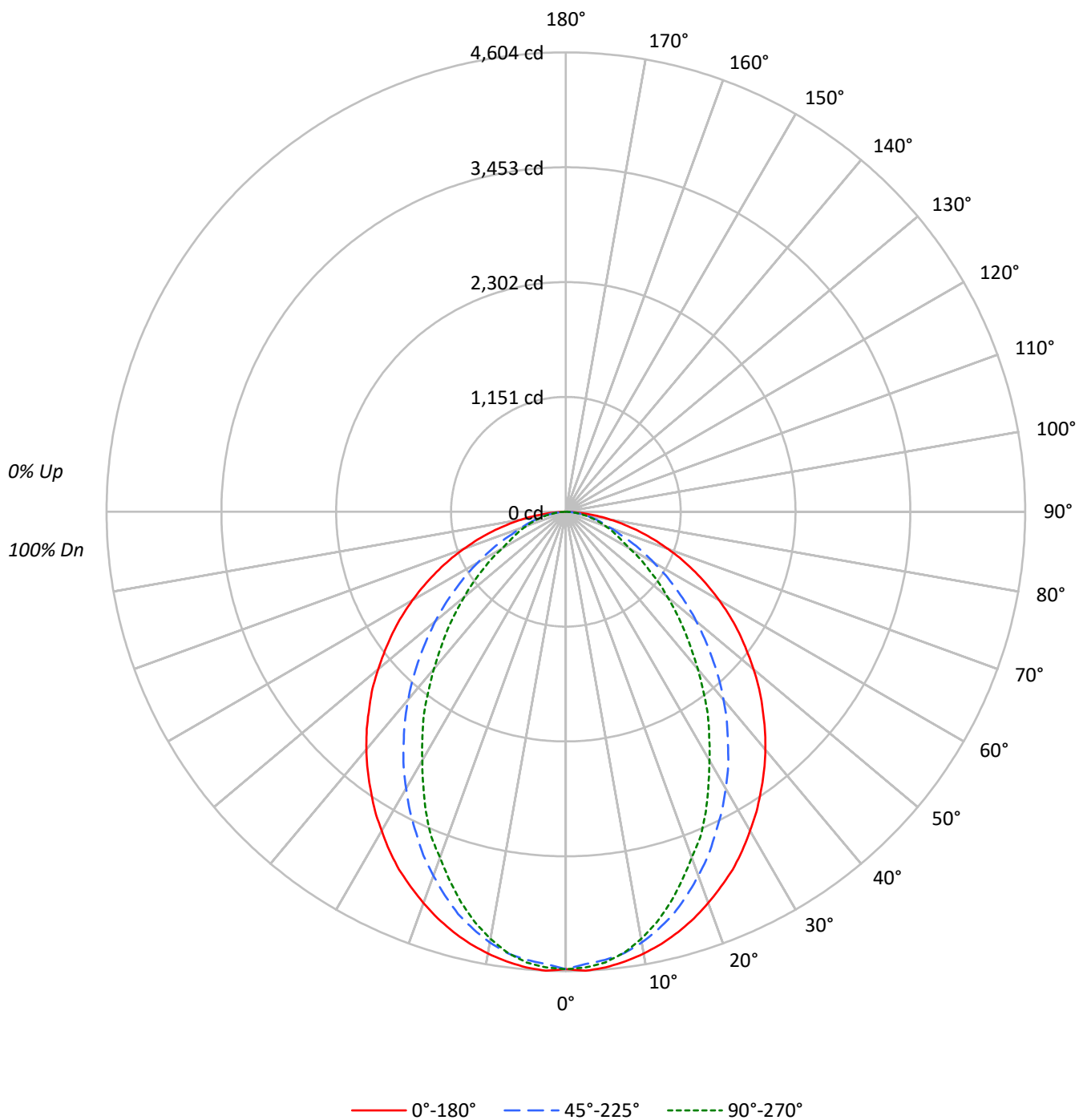
Lumens per Lamp: N/A
Luminaire Lumens: 9426.5 lumens
Efficiency: N/A
Efficacy: 93.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 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

TEST NUMBER: P931144

CATALOG NUMBER: DFN2DS-SQ4F0-100DS850-RLL

Luminous Intensity Polar Plot



TEST NUMBER: P931144

CATALOG NUMBER: DFN2DS-SQ4F0-100DS850-RLL

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	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92	90	88	86
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74	69	66	64
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66	62	57	55
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60	55	51	49
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55	50	45	43
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51	45	41	39
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47	41	37	35
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44	38	34	32
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3216	3216	3216
5°	3228	3176	3193
10°	3204	3124	3097
15°	3167	3031	2944
20°	3116	2899	2753
25°	3064	2749	2569
30°	2991	2594	2332
35°	2921	2427	2125
40°	2850	2253	1885
45°	2766	2058	1667
50°	2681	1861	1454
55°	2593	1649	1248
60°	2491	1426	1036
65°	2376	1198	943
70°	2238	987	868
75°	2069	900	810
80°	1826	804	738
85°	1435	634	634

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2766 cd/sqm

TEST NUMBER: P931144

CATALOG NUMBER: DFN2DS-SQ4F0-100DS850-RLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	429.6	4.6
10°-20°	1179.3	12.5
20°-30°	1655.6	17.6
30°-40°	1804.7	19.1
40°-50°	1658.8	17.6
50°-60°	1302.7	13.8
60°-70°	847.9	9.0
70°-80°	436.5	4.6
80°-90°	111.4	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°	3264.5	34.6
0°-40°	5069.2	53.8
0°-60°	8030.6	85.2
0°-90°	9426.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9426.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4584	4584	4584	4584	4584	
5°	4584	4563	4509	4546	4534	435
15°	4360	4314	4173	4094	4053	1228
25°	3957	3824	3551	3381	3318	1820
35°	3410	3198	2833	2572	2480	2134
45°	2788	2509	2074	1779	1680	2153
55°	2119	1796	1348	1099	1020	1894
65°	1431	1095	722	581	568	1419
75°	763	473	332	303	299	807
85°	178	91	79	79	79	214
90°	0	0	0	0	0	

TEST NUMBER: P931144

CATALOG NUMBER: DFN2DS-SQ4F0-100DS850-RLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4583.5	4583.5	4583.5	4583.5	4583.5
2.5°	4604.1	4583.5	4537.7	4579.5	4571.2
5°	4583.5	4562.8	4508.6	4546.1	4533.7
7.5°	4546.1	4521.4	4463.3	4479.6	4459.0
10°	4496.3	4467.3	4384.5	4371.8	4347.2
12.5°	4434.3	4396.9	4284.6	4260.0	4214.2
15°	4359.5	4313.7	4172.8	4094.1	4052.7
17.5°	4272.3	4205.9	4031.7	3940.5	3874.1
20°	4172.8	4089.7	3882.4	3779.0	3687.4
22.5°	4065.0	3969.6	3728.8	3588.1	3526.0
25°	3957.2	3824.4	3550.6	3380.7	3318.2
27.5°	3828.7	3687.4	3384.7	3189.7	3094.2
30°	3691.9	3533.8	3202.0	2990.9	2878.6
32.5°	3559.0	3367.9	3028.2	2779.2	2675.2
35°	3409.7	3198.1	2833.3	2571.9	2480.3
37.5°	3264.6	3036.1	2650.6	2364.2	2260.7
40°	3111.0	2862.3	2459.7	2165.2	2057.4
42.5°	2953.4	2688.0	2269.1	1961.9	1858.5
45°	2787.5	2509.3	2074.2	1779.3	1679.8
47.5°	2630.0	2335.6	1887.5	1592.6	1501.6
50°	2455.7	2161.2	1704.9	1418.4	1331.7
52.5°	2285.3	1974.2	1530.6	1256.8	1178.1
55°	2119.4	1796.0	1348.0	1099.4	1020.5
57.5°	1949.6	1617.7	1186.5	954.1	887.6
60°	1775.3	1443.5	1016.2	804.9	738.5
62.5°	1605.4	1273.6	870.9	672.1	639.0
65°	1431.2	1094.9	721.7	580.9	568.1
67.5°	1265.3	929.0	580.9	510.0	497.7
70°	1090.9	767.5	481.0	439.6	423.0
72.5°	925.0	617.8	402.2	369.2	360.9
75°	763.1	472.7	331.8	302.8	298.8
77.5°	601.6	335.8	261.4	244.6	236.3
80°	451.9	240.8	199.0	182.7	182.7
82.5°	315.1	161.9	136.9	128.5	128.5
85°	178.2	91.0	78.7	78.7	78.7
87.5°	66.4	33.0	33.0	29.1	29.1
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P931144

CATALOG NUMBER: DFN2DS-SQ4F0-100DS850-RLL

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	15.29	16.81	15.66	17.13	17.44	11.25	12.78	11.62	13.09	13.40
	3H	17.06	18.42	17.44	18.75	19.11	12.52	13.88	12.90	14.21	14.57
	4H	17.72	19.01	18.12	19.35	19.73	13.02	14.30	13.42	14.65	15.03
	6H	18.21	19.40	18.63	19.76	20.16	13.40	14.58	13.81	14.95	15.34
	8H	18.38	19.51	18.81	19.90	20.30	13.53	14.65	13.95	15.04	15.44
	12H	18.48	19.56	18.91	19.94	20.37	13.61	14.69	14.04	15.07	15.50
4H	2H	15.40	16.68	15.80	17.03	17.40	11.95	13.23	12.35	13.58	13.96
	3H	17.33	18.39	17.74	18.79	19.19	13.39	14.46	13.80	14.85	15.26
	4H	18.08	19.04	18.51	19.45	19.89	13.99	14.95	14.42	15.36	15.80
	6H	18.67	19.50	19.13	19.95	20.41	14.48	15.31	14.94	15.75	16.21
	8H	18.89	19.66	19.35	20.11	20.57	14.64	15.42	15.11	15.86	16.33
	12H	19.04	19.73	19.52	20.21	20.68	14.76	15.45	15.24	15.93	16.40
8H	4H	18.10	18.88	18.57	19.33	19.79	14.35	15.12	14.81	15.57	16.03
	6H	18.74	19.38	19.24	19.88	20.35	14.93	15.57	15.43	16.07	16.54
	8H	18.99	19.57	19.51	20.08	20.57	15.15	15.73	15.67	16.24	16.73
	12H	19.20	19.71	19.71	20.20	20.76	15.33	15.84	15.84	16.33	16.90
12H	4H	18.09	18.78	18.57	19.26	19.73	14.39	15.08	14.87	15.56	16.03
	6H	18.72	19.30	19.24	19.81	20.30	15.00	15.57	15.51	16.08	16.57
	8H	19.01	19.52	19.52	20.01	20.57	15.27	15.78	15.78	16.27	16.84