

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: P931216

Luminaire Tested: DFN2DS-SQ4F0-160DS850-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931216
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-SQ4F0-160DS850-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

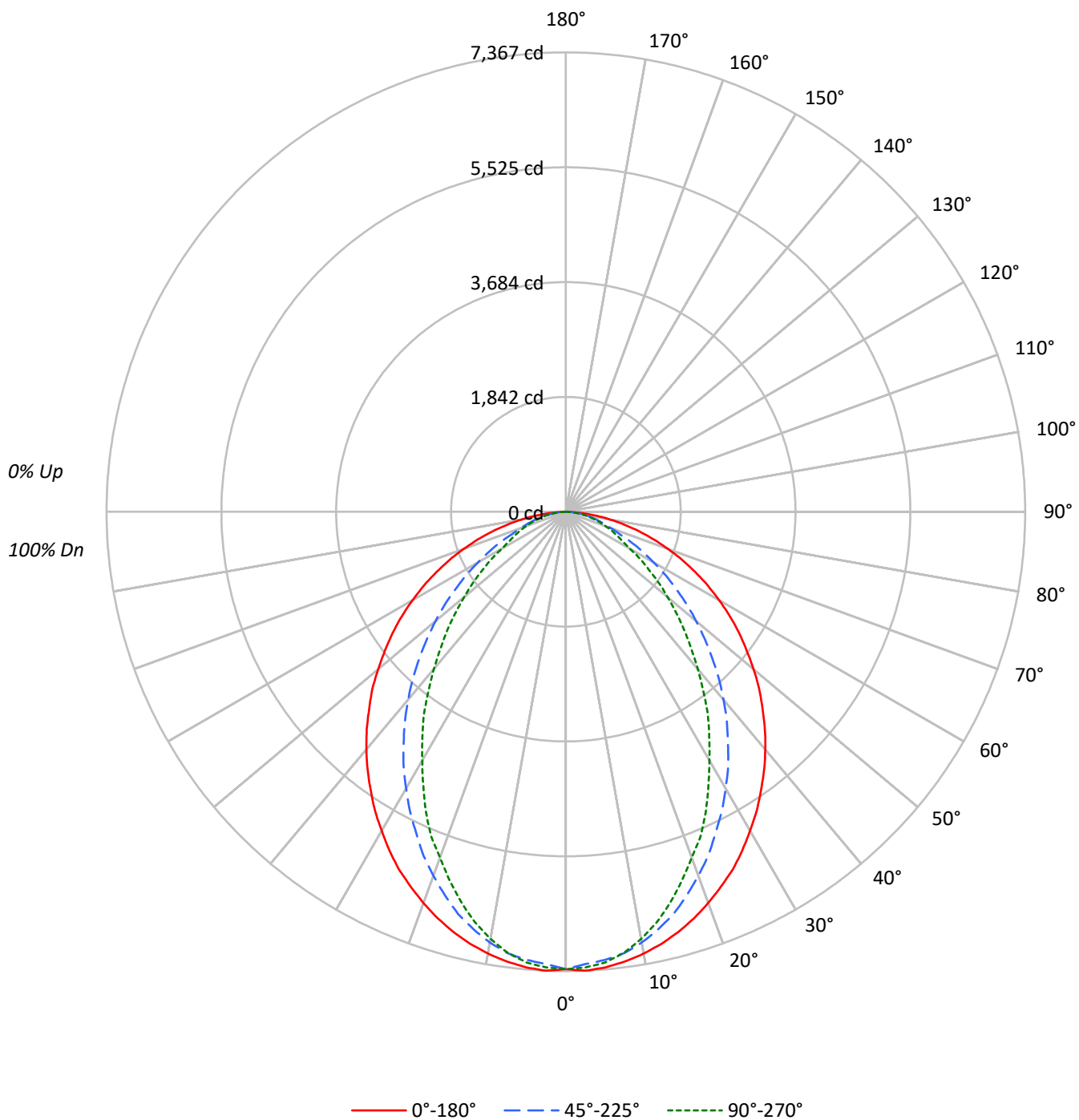
Lumens per Lamp: N/A
Luminaire Lumens: 15082.4 lumens
Efficiency: N/A
Efficacy: 86.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 174.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P931216

CATALOG NUMBER: DFN2DS-SQ4F0-160DS850-RLL

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°	5146	5146	5146
5°	5165	5081	5109
10°	5126	4998	4956
15°	5067	4850	4710
20°	4985	4638	4406
25°	4902	4398	4110
30°	4786	4151	3732
35°	4673	3883	3399
40°	4559	3605	3015
45°	4426	3293	2667
50°	4289	2978	2326
55°	4148	2638	1998
60°	3986	2282	1658
65°	3802	1917	1509
70°	3581	1579	1388
75°	3310	1439	1296
80°	2922	1286	1181
85°	2295	1015	1015

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 4426 cd/sqm

TEST NUMBER: P931216

CATALOG NUMBER: DFN2DS-SQ4F0-160DS850-RLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	687.3	4.6
10°-20°	1886.8	12.5
20°-30°	2649.0	17.6
30°-40°	2887.6	19.1
40°-50°	2654.0	17.6
50°-60°	2084.3	13.8
60°-70°	1356.7	9.0
70°-80°	698.4	4.6
80°-90°	178.3	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°	5223.1	34.6
0°-40°	8110.7	53.8
0°-60°	12849.0	85.2
0°-90°	15082.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15082.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7334	7334	7334	7334	7334	
5°	7334	7300	7214	7274	7254	695
15°	6975	6902	6677	6550	6484	1966
25°	6332	6119	5681	5409	5309	2912
35°	5456	5117	4533	4115	3969	3415
45°	4460	4015	3319	2847	2688	3444
55°	3391	2874	2157	1759	1633	3030
65°	2290	1752	1155	930	909	2270
75°	1221	756	531	484	478	1291
85°	285	146	126	126	126	342
90°	0	0	0	0	0	

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CATALOG NUMBER: DFN2DS-SQ4F0-160DS850-RLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	7333.6	7333.6	7333.6	7333.6	7333.6
2.5°	7366.6	7333.6	7260.3	7327.3	7313.9
5°	7333.6	7300.4	7213.8	7273.7	7254.0
7.5°	7273.7	7234.2	7141.3	7167.4	7134.3
10°	7194.2	7147.7	7015.3	6994.9	6955.4
12.5°	7094.8	7035.1	6855.5	6816.0	6742.8
15°	6975.2	6902.0	6676.6	6550.5	6484.3
17.5°	6835.8	6729.4	6450.6	6304.8	6198.5
20°	6676.6	6543.5	6211.8	6046.4	5900.0
22.5°	6504.1	6351.2	5966.1	5740.8	5641.5
25°	6331.6	6118.9	5681.0	5409.1	5309.2
27.5°	6126.0	5900.0	5415.5	5103.6	4950.8
30°	5907.0	5654.2	5123.2	4785.3	4605.8
32.5°	5694.4	5388.7	4845.1	4446.6	4280.4
35°	5455.6	5116.9	4533.3	4114.9	3968.6
37.5°	5223.3	4857.9	4241.0	3782.6	3617.1
40°	4977.5	4579.7	3935.4	3464.3	3291.8
42.5°	4725.4	4300.8	3630.5	3139.0	2973.6
45°	4460.0	4015.0	3318.6	2846.8	2687.7
47.5°	4207.9	3736.9	3020.0	2548.3	2402.5
50°	3929.1	3458.0	2727.8	2269.5	2130.7
52.5°	3656.6	3158.8	2449.0	2011.1	1885.0
55°	3391.1	2873.5	2156.8	1758.9	1632.9
57.5°	3119.3	2588.4	1898.4	1526.5	1420.2
60°	2840.5	2309.6	1625.8	1287.9	1181.5
62.5°	2568.7	2037.8	1393.5	1075.2	1022.4
65°	2289.9	1751.9	1154.8	929.5	909.0
67.5°	2024.4	1486.4	929.5	816.1	796.4
70°	1745.6	1228.0	769.6	703.4	676.7
72.5°	1480.1	988.6	643.6	590.8	577.3
75°	1221.0	756.2	530.9	484.4	478.1
77.5°	962.5	537.2	418.2	391.5	378.2
80°	723.2	385.2	318.3	292.2	292.2
82.5°	504.2	259.2	219.0	205.6	205.6
85°	285.1	145.7	126.1	126.1	126.1
87.5°	106.4	52.8	52.8	46.5	46.5
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P931216

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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	16.93	18.45	17.29	18.76	19.08	12.89	14.41	13.25	14.72	15.04
	3H	18.69	20.06	19.07	20.38	20.75	14.15	15.52	14.53	15.84	16.21
	4H	19.36	20.64	19.76	20.99	21.37	14.65	15.93	15.05	16.28	16.66
	6H	19.85	21.03	20.26	21.40	21.79	15.03	16.22	15.45	16.58	16.98
	8H	20.01	21.14	20.44	21.53	21.93	15.16	16.29	15.59	16.68	17.08
	12H	20.12	21.19	20.55	21.58	22.00	15.24	16.32	15.67	16.70	17.13
4H	2H	17.03	18.31	17.43	18.66	19.04	13.58	14.86	13.98	15.21	15.59
	3H	18.96	20.03	19.37	20.43	20.83	15.03	16.09	15.44	16.49	16.89
	4H	19.71	20.67	20.15	21.09	21.52	15.62	16.58	16.06	17.00	17.44
	6H	20.30	21.14	20.76	21.58	22.04	16.11	16.94	16.57	17.39	17.85
	8H	20.52	21.30	20.98	21.74	22.21	16.27	17.05	16.74	17.50	17.96
	12H	20.67	21.37	21.15	21.85	22.32	16.39	17.09	16.87	17.57	18.04
8H	4H	19.74	20.51	20.20	20.96	21.43	15.98	16.76	16.44	17.20	17.67
	6H	20.37	21.02	20.87	21.51	21.99	16.57	17.21	17.06	17.70	18.18
	8H	20.63	21.20	21.14	21.71	22.20	16.79	17.36	17.30	17.87	18.36
	12H	20.83	21.34	21.34	21.83	22.40	16.97	17.48	17.48	17.97	18.53
12H	4H	19.72	20.42	20.20	20.89	21.37	16.02	16.72	16.50	17.19	17.67
	6H	20.36	20.93	20.87	21.44	21.93	16.63	17.21	17.14	17.72	18.20
	8H	20.64	21.15	21.15	21.64	22.21	16.90	17.41	17.41	17.90	18.47