

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: P931210

Luminaire Tested: DFN2DS-SQ4F0-160DS830-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931210
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-SQ4F0-160DS830-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

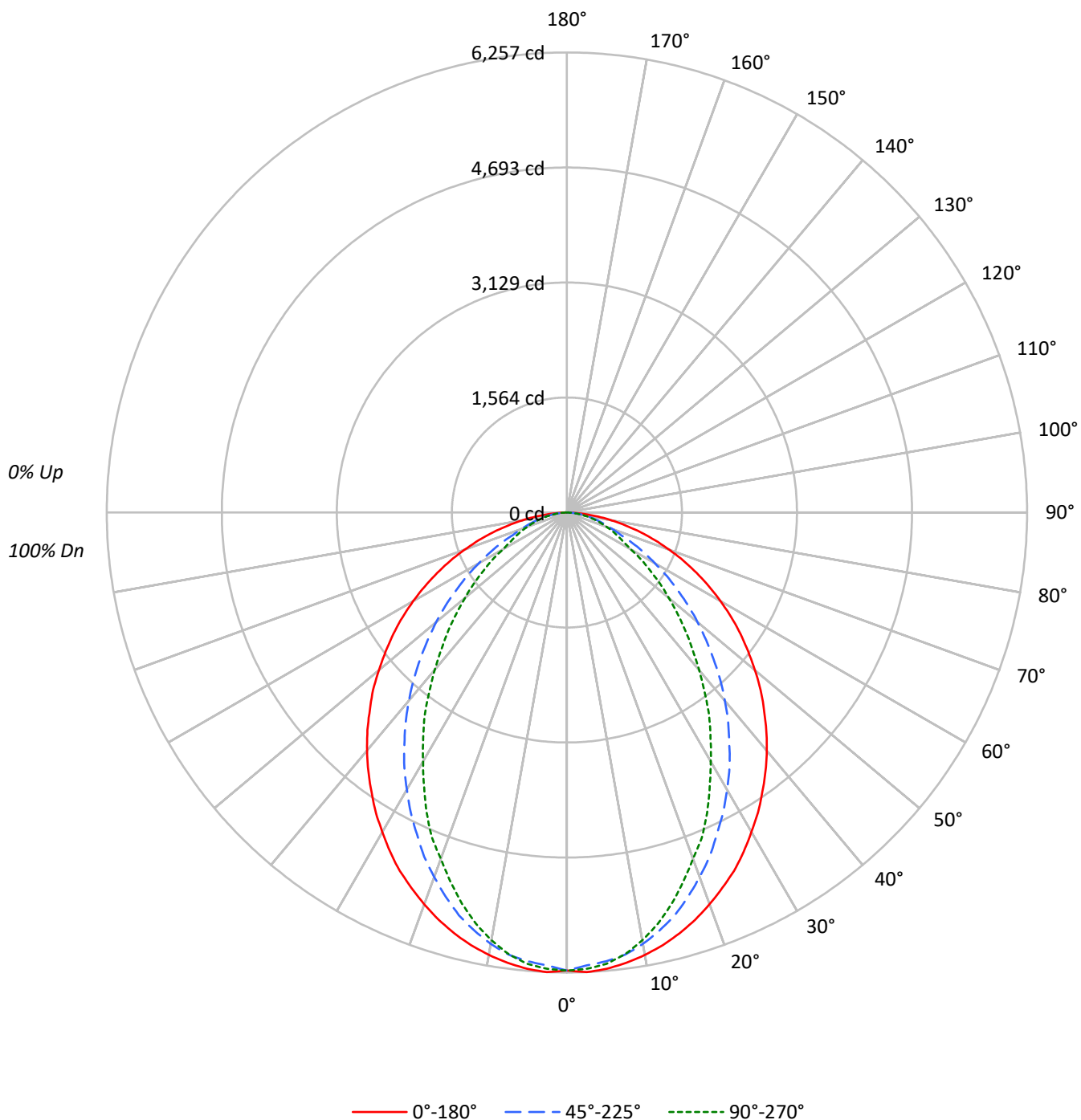
Lumens per Lamp: N/A
Luminaire Lumens: 12811.2 lumens
Efficiency: N/A
Efficacy: 73.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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: P931210

CATALOG NUMBER: DFN2DS-SQ4F0-160DS830-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°	4371	4371	4371
5°	4388	4316	4340
10°	4354	4246	4209
15°	4304	4120	4001
20°	4235	3940	3742
25°	4164	3736	3491
30°	4065	3526	3170
35°	3970	3298	2887
40°	3873	3062	2561
45°	3759	2797	2265
50°	3643	2529	1976
55°	3524	2241	1697
60°	3386	1938	1408
65°	3229	1629	1282
70°	3042	1341	1179
75°	2812	1222	1101
80°	2482	1093	1003
85°	1950	862	862

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3759 cd/sqm

TEST NUMBER: P931210

CATALOG NUMBER: DFN2DS-SQ4F0-160DS830-RLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	583.8	4.6
10°-20°	1602.7	12.5
20°-30°	2250.1	17.6
30°-40°	2452.8	19.1
40°-50°	2254.3	17.6
50°-60°	1770.4	13.8
60°-70°	1152.4	9.0
70°-80°	593.2	4.6
80°-90°	151.4	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°	4436.6	34.6
0°-40°	6889.4	53.8
0°-60°	10914.1	85.2
0°-90°	12811.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12811.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6229	6229	6229	6229	6229	
5°	6229	6201	6128	6178	6162	591
15°	5925	5863	5671	5564	5508	1670
25°	5378	5198	4826	4595	4510	2473
35°	4634	4346	3851	3495	3371	2900
45°	3788	3410	2819	2418	2283	2926
55°	2880	2441	1832	1494	1387	2574
65°	1945	1488	981	790	772	1928
75°	1037	642	451	412	406	1097
85°	242	124	107	107	107	290
90°	0	0	0	0	0	

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CATALOG NUMBER: DFN2DS-SQ4F0-160DS830-RLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	6229.3	6229.3	6229.3	6229.3	6229.3
2.5°	6257.3	6229.3	6167.0	6223.9	6212.5
5°	6229.3	6201.1	6127.5	6178.4	6161.6
7.5°	6178.4	6144.9	6065.9	6088.1	6060.0
10°	6110.8	6071.4	5958.9	5941.6	5908.0
12.5°	6026.4	5975.7	5823.2	5789.6	5727.5
15°	5924.8	5862.6	5671.2	5564.1	5507.9
17.5°	5806.4	5716.1	5479.2	5355.4	5265.1
20°	5671.2	5558.2	5276.4	5135.9	5011.5
22.5°	5524.6	5394.8	5067.7	4876.4	4792.0
25°	5378.2	5197.5	4825.5	4594.6	4509.7
27.5°	5203.5	5011.5	4600.0	4335.1	4205.3
30°	5017.5	4802.8	4351.8	4064.7	3912.2
32.5°	4836.9	4577.3	4115.5	3777.0	3635.8
35°	4634.1	4346.4	3850.6	3495.3	3370.9
37.5°	4436.7	4126.3	3602.4	3213.0	3072.4
40°	4228.0	3890.1	3342.8	2942.6	2796.1
42.5°	4013.9	3653.2	3083.8	2666.3	2525.8
45°	3788.3	3410.4	2818.8	2418.1	2282.9
47.5°	3574.2	3174.2	2565.3	2164.5	2040.7
50°	3337.4	2937.3	2317.0	1927.7	1809.9
52.5°	3106.0	2683.1	2080.2	1708.2	1601.1
55°	2880.4	2440.8	1832.0	1494.0	1387.0
57.5°	2649.6	2198.6	1612.5	1296.7	1206.3
60°	2412.7	1961.8	1381.0	1093.9	1003.6
62.5°	2181.9	1730.9	1183.6	913.3	868.4
65°	1945.0	1488.1	980.9	789.5	772.2
67.5°	1719.5	1262.6	789.5	693.2	676.5
70°	1482.7	1043.1	653.7	597.5	574.8
72.5°	1257.2	839.7	546.6	501.8	490.4
75°	1037.1	642.3	450.9	411.5	406.1
77.5°	817.6	456.3	355.2	332.5	321.2
80°	614.3	327.2	270.4	248.2	248.2
82.5°	428.2	220.1	186.0	174.6	174.6
85°	242.2	123.8	107.1	107.1	107.1
87.5°	90.3	44.8	44.8	39.5	39.5
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	16.36	17.88	16.72	18.19	18.51	12.32	13.84	12.68	14.16	14.47
	3H	18.12	19.49	18.50	19.82	20.18	13.59	14.95	13.96	15.28	15.64
	4H	18.79	20.07	19.19	20.42	20.80	14.09	15.37	14.49	15.72	16.09
	6H	19.28	20.46	19.69	20.83	21.22	14.47	15.65	14.88	16.02	16.41
	8H	19.45	20.57	19.87	20.96	21.36	14.59	15.72	15.02	16.11	16.51
	12H	19.55	20.63	19.98	21.01	21.44	14.67	15.75	15.10	16.13	16.56
4H	2H	16.46	17.74	16.86	18.09	18.47	13.02	14.30	13.42	14.64	15.02
	3H	18.40	19.46	18.81	19.86	20.26	14.46	15.52	14.87	15.92	16.32
	4H	19.15	20.10	19.58	20.52	20.96	15.06	16.01	15.49	16.43	16.87
	6H	19.74	20.57	20.19	21.01	21.47	15.55	16.38	16.00	16.82	17.28
	8H	19.95	20.73	20.42	21.17	21.64	15.71	16.49	16.17	16.93	17.40
	12H	20.11	20.80	20.59	21.28	21.75	15.83	16.52	16.31	17.00	17.47
8H	4H	19.17	19.95	19.63	20.39	20.86	15.41	16.19	15.87	16.63	17.10
	6H	19.81	20.45	20.30	20.94	21.42	16.00	16.64	16.49	17.13	17.61
	8H	20.06	20.63	20.57	21.14	21.63	16.22	16.80	16.73	17.31	17.79
	12H	20.26	20.77	20.77	21.26	21.83	16.40	16.91	16.91	17.40	17.96
12H	4H	19.15	19.85	19.64	20.33	20.80	15.45	16.15	15.94	16.63	17.10
	6H	19.79	20.37	20.30	20.88	21.36	16.06	16.64	16.58	17.15	17.64
	8H	20.07	20.58	20.58	21.07	21.64	16.33	16.84	16.84	17.34	17.90