

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: P931212

Luminaire Tested: DFN2DS-SQ4F0-160DS835-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931212
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-SQ4F0-160DS835-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

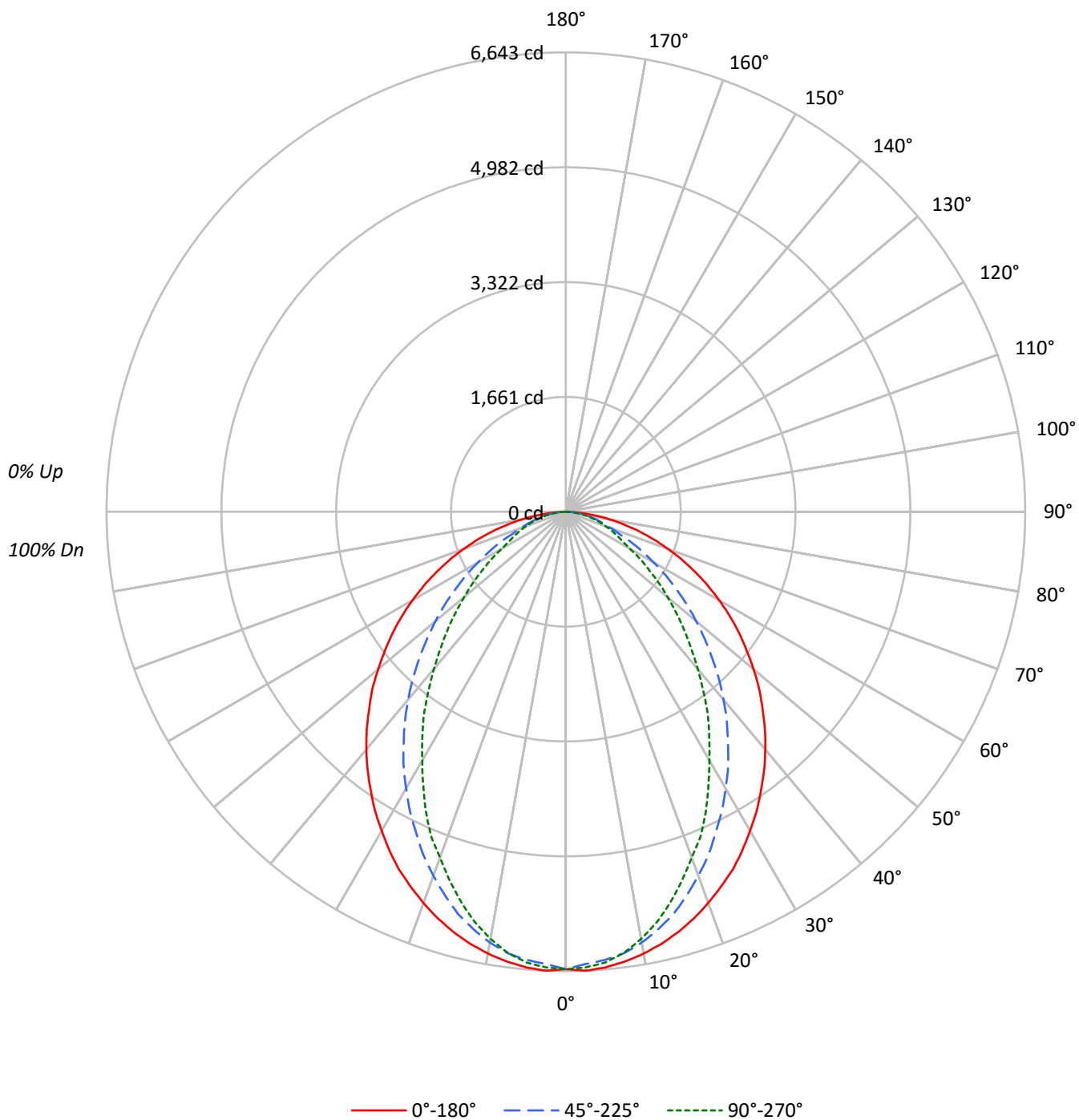
Lumens per Lamp: N/A
Luminaire Lumens: 13600.0 lumens
Efficiency: N/A
Efficacy: 77.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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

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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°	4640	4640	4640
5°	4658	4582	4607
10°	4622	4507	4469
15°	4569	4373	4247
20°	4495	4183	3973
25°	4420	3966	3706
30°	4316	3743	3365
35°	4214	3501	3065
40°	4111	3250	2719
45°	3991	2969	2405
50°	3867	2685	2097
55°	3741	2379	1801
60°	3594	2057	1495
65°	3428	1729	1361
70°	3229	1424	1252
75°	2985	1298	1169
80°	2635	1160	1065
85°	2070	915	915

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3991 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	619.8	4.6
10°-20°	1701.4	12.5
20°-30°	2388.6	17.6
30°-40°	2603.8	19.1
40°-50°	2393.2	17.6
50°-60°	1879.5	13.8
60°-70°	1223.3	9.0
70°-80°	629.7	4.6
80°-90°	160.8	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°	4709.8	34.6
0°-40°	7313.5	53.8
0°-60°	11586.2	85.2
0°-90°	13600.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13600.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6613	6613	6613	6613	6613	
5°	6613	6583	6505	6559	6541	627
15°	6290	6224	6020	5907	5847	1772
25°	5709	5518	5123	4878	4787	2626
35°	4919	4614	4088	3710	3578	3079
45°	4022	3620	2992	2567	2424	3106
55°	3058	2591	1945	1586	1472	2732
65°	2065	1580	1041	838	820	2047
75°	1101	682	479	437	431	1164
85°	257	131	114	114	114	308
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	6612.8	6612.8	6612.8	6612.8	6612.8
2.5°	6642.6	6612.8	6546.7	6607.1	6595.0
5°	6612.8	6582.9	6504.8	6558.8	6541.0
7.5°	6558.8	6523.2	6439.4	6462.9	6433.1
10°	6487.1	6445.2	6325.8	6307.4	6271.8
12.5°	6397.5	6343.6	6181.7	6146.1	6080.1
15°	6289.6	6223.6	6020.4	5906.7	5847.0
17.5°	6163.9	6068.0	5816.6	5685.1	5589.3
20°	6020.4	5900.4	5601.3	5452.1	5320.1
22.5°	5864.8	5727.0	5379.7	5176.6	5087.0
25°	5709.3	5517.5	5122.6	4877.5	4787.4
27.5°	5523.9	5320.1	4883.2	4602.0	4464.2
30°	5326.4	5098.5	4619.7	4315.0	4153.1
32.5°	5134.7	4859.1	4368.9	4009.6	3859.7
35°	4919.4	4614.0	4087.7	3710.5	3578.5
37.5°	4709.9	4380.4	3824.2	3410.8	3261.6
40°	4488.3	4129.6	3548.6	3123.8	2968.3
42.5°	4261.0	3878.1	3273.7	2830.5	2681.3
45°	4021.6	3620.4	2992.4	2567.0	2423.5
47.5°	3794.3	3369.6	2723.2	2297.8	2166.4
50°	3542.9	3118.1	2459.7	2046.4	1921.3
52.5°	3297.2	2848.3	2208.3	1813.4	1699.7
55°	3057.8	2591.1	1944.8	1586.0	1472.4
57.5°	2812.7	2334.0	1711.8	1376.5	1280.6
60°	2561.3	2082.6	1466.0	1161.3	1065.4
62.5°	2316.2	1837.5	1256.5	969.5	921.9
65°	2064.8	1579.7	1041.3	838.1	819.7
67.5°	1825.4	1340.3	838.1	735.9	718.1
70°	1574.0	1107.3	694.0	634.3	610.2
72.5°	1334.6	891.4	580.3	532.7	520.6
75°	1101.0	681.9	478.7	436.8	431.1
77.5°	867.9	484.4	377.1	353.0	341.0
80°	652.1	347.3	287.0	263.5	263.5
82.5°	454.6	233.7	197.5	185.4	185.4
85°	257.1	131.4	113.7	113.7	113.7
87.5°	95.9	47.6	47.6	41.9	41.9
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	16.57	18.09	16.93	18.40	18.72	12.53	14.05	12.89	14.36	14.68
	3H	18.33	19.70	18.71	20.03	20.39	13.79	15.16	14.17	15.49	15.85
	4H	19.00	20.28	19.40	20.63	21.01	14.29	15.57	14.69	15.92	16.30
	6H	19.49	20.67	19.90	21.04	21.43	14.68	15.86	15.09	16.22	16.62
	8H	19.65	20.78	20.08	21.17	21.57	14.80	15.93	15.23	16.32	16.72
	12H	19.76	20.83	20.19	21.22	21.65	14.88	15.96	15.31	16.34	16.77
4H	2H	16.67	17.95	17.07	18.30	18.68	13.22	14.50	13.62	14.85	15.23
	3H	18.60	19.67	19.01	20.07	20.47	14.67	15.73	15.08	16.13	16.53
	4H	19.35	20.31	19.79	20.73	21.16	15.27	16.22	15.70	16.64	17.08
	6H	19.95	20.78	20.40	21.22	21.68	15.75	16.59	16.21	17.03	17.49
	8H	20.16	20.94	20.62	21.38	21.85	15.92	16.69	16.38	17.14	17.60
	12H	20.31	21.01	20.80	21.49	21.96	16.03	16.73	16.52	17.21	17.68
8H	4H	19.38	20.16	19.84	20.60	21.07	15.62	16.40	16.08	16.84	17.31
	6H	20.02	20.66	20.51	21.15	21.63	16.21	16.85	16.70	17.34	17.82
	8H	20.27	20.84	20.78	21.35	21.84	16.43	17.00	16.94	17.51	18.00
	12H	20.47	20.98	20.98	21.47	22.04	16.61	17.12	17.12	17.61	18.17
12H	4H	19.36	20.06	19.84	20.54	21.01	15.66	16.36	16.14	16.84	17.31
	6H	20.00	20.57	20.51	21.08	21.57	16.27	16.85	16.78	17.36	17.84
	8H	20.28	20.79	20.79	21.28	21.85	16.54	17.05	17.05	17.54	18.11