

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: P931198

Luminaire Tested: DFN2DS-SQ4F0-140DS850-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931198
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-SQ4F0-140DS850-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

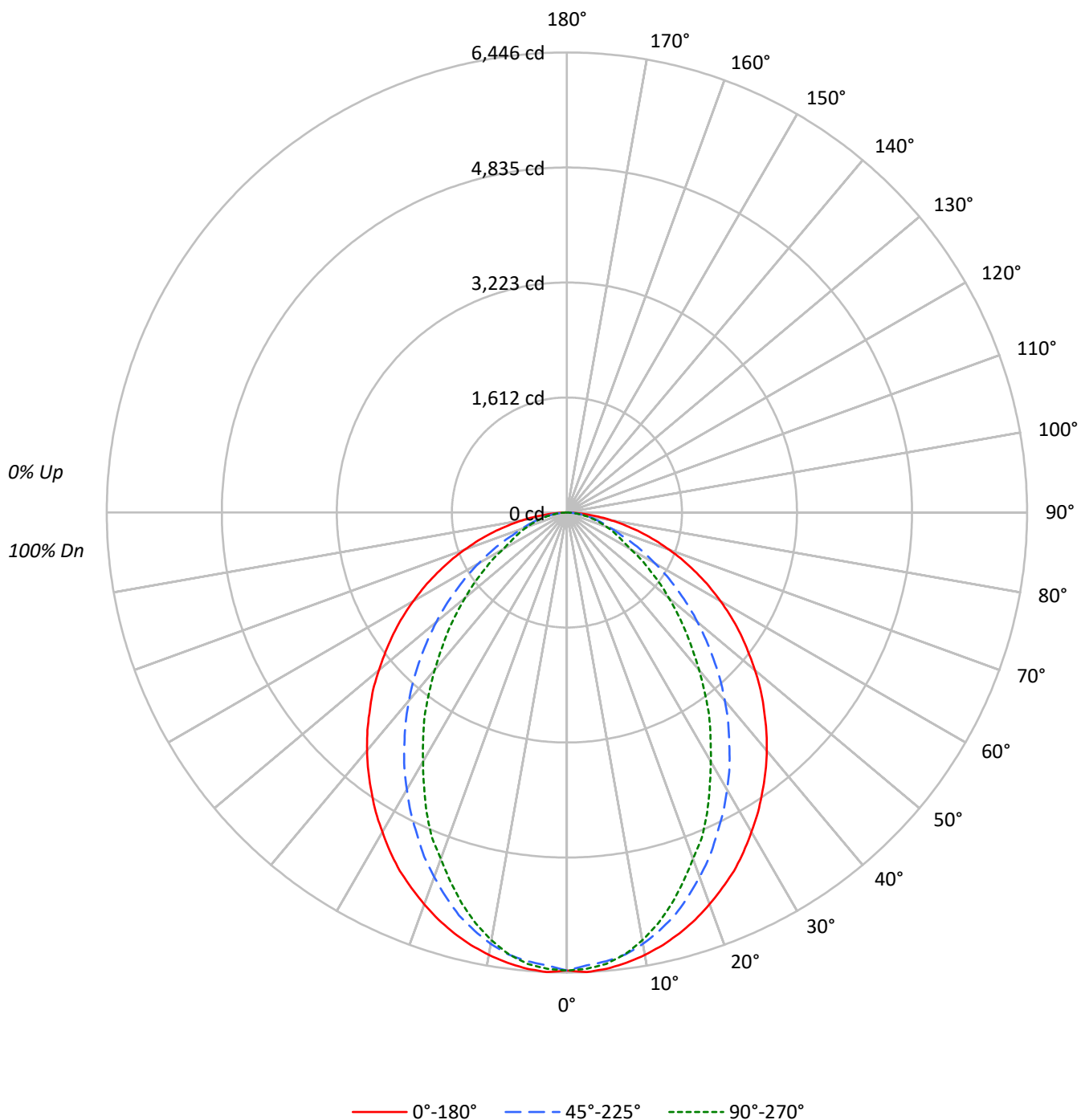
Lumens per Lamp: N/A
Luminaire Lumens: 13197.1 lumens
Efficiency: N/A
Efficacy: 87.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 151.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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°	4503	4503	4503
5°	4520	4446	4471
10°	4485	4374	4336
15°	4434	4244	4122
20°	4362	4059	3855
25°	4289	3849	3597
30°	4188	3632	3265
35°	4089	3398	2974
40°	3989	3154	2638
45°	3873	2882	2334
50°	3753	2605	2035
55°	3630	2309	1748
60°	3488	1996	1451
65°	3327	1678	1321
70°	3133	1382	1215
75°	2896	1260	1134
80°	2557	1125	1033
85°	2009	887	887

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3873 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	601.4	4.6
10°-20°	1651.0	12.5
20°-30°	2317.9	17.6
30°-40°	2526.6	19.1
40°-50°	2322.3	17.6
50°-60°	1823.8	13.8
60°-70°	1187.1	9.0
70°-80°	611.1	4.6
80°-90°	156.0	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°	4570.2	34.6
0°-40°	7096.9	53.8
0°-60°	11242.9	85.2
0°-90°	13197.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13197.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6417	6417	6417	6417	6417	
5°	6417	6388	6312	6365	6347	608
15°	6103	6039	5842	5732	5674	1720
25°	5540	5354	4971	4733	4646	2548
35°	4774	4477	3967	3601	3472	2988
45°	3902	3513	2904	2491	2352	3014
55°	2967	2514	1887	1539	1429	2651
65°	2004	1533	1010	813	795	1986
75°	1068	662	465	424	418	1130
85°	250	128	110	110	110	299
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	6416.9	6416.9	6416.9	6416.9	6416.9
2.5°	6445.8	6416.9	6352.8	6411.4	6399.6
5°	6416.9	6388.0	6312.1	6364.6	6347.3
7.5°	6364.6	6330.0	6248.7	6271.5	6242.6
10°	6294.9	6254.2	6138.4	6120.5	6086.0
12.5°	6208.0	6155.6	5998.5	5964.0	5900.0
15°	6103.3	6039.2	5842.0	5731.8	5673.9
17.5°	5981.3	5888.2	5644.3	5516.7	5423.7
20°	5842.0	5725.5	5435.4	5290.6	5162.5
22.5°	5691.1	5557.4	5220.4	5023.2	4936.4
25°	5540.1	5354.0	4970.9	4733.0	4645.5
27.5°	5360.2	5162.5	4738.5	4465.6	4332.0
30°	5168.6	4947.5	4482.9	4187.1	4030.0
32.5°	4982.5	4715.1	4239.5	3890.8	3745.4
35°	4773.7	4477.4	3966.6	3600.6	3472.4
37.5°	4570.4	4250.6	3710.8	3309.8	3165.0
40°	4355.4	4007.3	3443.4	3031.3	2880.4
42.5°	4134.8	3763.3	3176.7	2746.7	2601.8
45°	3902.5	3513.1	2903.8	2490.9	2351.7
47.5°	3681.9	3269.8	2642.5	2229.8	2102.2
50°	3437.9	3025.8	2386.8	1985.8	1864.3
52.5°	3199.5	2763.8	2142.8	1759.7	1649.3
55°	2967.2	2514.3	1887.2	1539.1	1428.7
57.5°	2729.4	2264.8	1661.1	1335.8	1242.7
60°	2485.4	2020.8	1422.6	1126.9	1033.8
62.5°	2247.6	1783.1	1219.3	940.8	894.6
65°	2003.6	1532.9	1010.4	813.2	795.4
67.5°	1771.3	1300.6	813.2	714.1	696.8
70°	1527.3	1074.5	673.4	615.5	592.1
72.5°	1295.1	865.0	563.2	516.9	505.3
75°	1068.3	661.7	464.6	423.9	418.3
77.5°	842.3	470.1	366.0	342.6	330.8
80°	632.8	337.0	278.5	255.7	255.7
82.5°	441.2	226.7	191.6	179.9	179.9
85°	249.5	127.5	110.2	110.2	110.2
87.5°	93.0	46.2	46.2	40.7	40.7
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	16.46	17.98	16.83	18.30	18.61	12.42	13.94	12.79	14.26	14.57
	3H	18.23	19.59	18.61	19.92	20.28	13.69	15.05	14.07	15.38	15.74
	4H	18.89	20.17	19.29	20.52	20.90	14.19	15.47	14.59	15.82	16.20
	6H	19.38	20.57	19.80	20.93	21.32	14.57	15.75	14.98	16.12	16.51
	8H	19.55	20.67	19.97	21.06	21.47	14.70	15.82	15.12	16.21	16.61
	12H	19.65	20.73	20.08	21.11	21.54	14.78	15.85	15.21	16.24	16.67
4H	2H	16.57	17.85	16.97	18.20	18.57	13.12	14.40	13.52	14.75	15.13
	3H	18.50	19.56	18.91	19.96	20.36	14.56	15.62	14.97	16.02	16.43
	4H	19.25	20.21	19.68	20.62	21.06	15.16	16.12	15.59	16.53	16.97
	6H	19.84	20.67	20.30	21.12	21.58	15.65	16.48	16.11	16.92	17.38
	8H	20.06	20.83	20.52	21.28	21.74	15.81	16.59	16.27	17.03	17.50
	12H	20.21	20.90	20.69	21.38	21.85	15.93	16.62	16.41	17.10	17.57
8H	4H	19.27	20.05	19.74	20.49	20.96	15.51	16.29	15.98	16.74	17.20
	6H	19.91	20.55	20.41	21.04	21.52	16.10	16.74	16.60	17.24	17.71
	8H	20.16	20.74	20.67	21.25	21.74	16.32	16.90	16.84	17.41	17.90
	12H	20.37	20.88	20.87	21.37	21.93	16.50	17.01	17.01	17.50	18.07
12H	4H	19.26	19.95	19.74	20.43	20.90	15.56	16.25	16.04	16.73	17.20
	6H	19.89	20.47	20.41	20.98	21.47	16.16	16.74	16.68	17.25	17.74
	8H	20.18	20.69	20.69	21.18	21.74	16.44	16.95	16.95	17.44	18.00