

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: P931196

Luminaire Tested: DFN2DS-SQ4F0-140DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931196
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-SQ4F0-140DS840-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

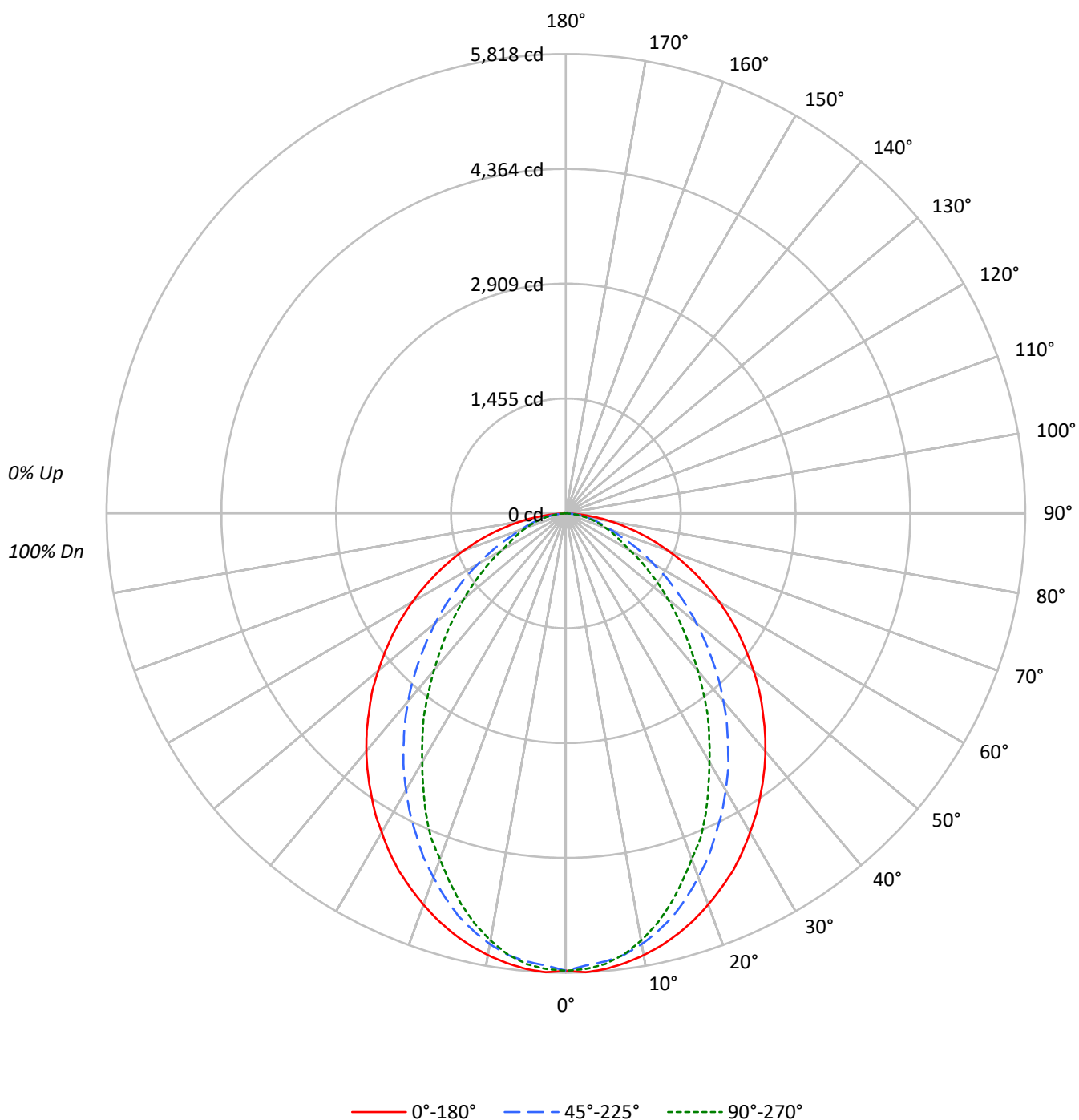
Lumens per Lamp: N/A
Luminaire Lumens: 11911.9 lumens
Efficiency: N/A
Efficacy: 78.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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°	4064	4064	4064
5°	4080	4013	4035
10°	4048	3948	3914
15°	4002	3831	3720
20°	3937	3663	3480
25°	3872	3474	3246
30°	3780	3278	2947
35°	3691	3067	2685
40°	3601	2847	2381
45°	3495	2601	2106
50°	3387	2352	1837
55°	3276	2084	1578
60°	3148	1802	1309
65°	3003	1514	1192
70°	2828	1247	1096
75°	2614	1137	1024
80°	2308	1016	933
85°	1813	801	801

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3495 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	542.8	4.6
10°-20°	1490.2	12.5
20°-30°	2092.2	17.6
30°-40°	2280.6	19.1
40°-50°	2096.1	17.6
50°-60°	1646.2	13.8
60°-70°	1071.5	9.0
70°-80°	551.6	4.6
80°-90°	140.8	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°	4125.2	34.6
0°-40°	6405.8	53.8
0°-60°	10148.0	85.2
0°-90°	11911.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11911.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5792	5792	5792	5792	5792	
5°	5792	5766	5697	5745	5729	549
15°	5509	5451	5273	5174	5121	1552
25°	5001	4833	4487	4272	4193	2300
35°	4309	4041	3580	3250	3134	2697
45°	3522	3171	2621	2248	2123	2720
55°	2678	2270	1703	1389	1290	2393
65°	1808	1384	912	734	718	1793
75°	964	597	419	383	378	1020
85°	225	115	100	100	100	270
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5792.0	5792.0	5792.0	5792.0	5792.0
2.5°	5818.1	5792.0	5734.1	5787.0	5776.4
5°	5792.0	5765.9	5697.4	5744.7	5729.1
7.5°	5744.7	5713.5	5640.1	5660.8	5634.6
10°	5681.9	5645.1	5540.6	5524.4	5493.3
12.5°	5603.4	5556.2	5414.3	5383.2	5325.4
15°	5508.9	5451.0	5273.1	5173.6	5121.3
17.5°	5398.8	5314.8	5094.6	4979.5	4895.5
20°	5273.1	5168.0	4906.1	4775.4	4659.8
22.5°	5136.8	5016.2	4712.0	4534.0	4455.7
25°	5000.6	4832.6	4486.8	4272.1	4193.1
27.5°	4838.2	4659.8	4277.1	4030.7	3910.1
30°	4665.3	4465.7	4046.3	3779.4	3637.5
32.5°	4497.3	4256.0	3826.6	3511.9	3380.7
35°	4308.8	4041.3	3580.3	3249.9	3134.2
37.5°	4125.3	3836.6	3349.4	2987.5	2856.8
40°	3931.2	3617.0	3108.1	2736.1	2599.9
42.5°	3732.1	3396.8	2867.4	2479.2	2348.4
45°	3522.4	3171.0	2621.0	2248.3	2122.7
47.5°	3323.3	2951.3	2385.2	2012.6	1897.5
50°	3103.1	2731.1	2154.4	1792.4	1682.8
52.5°	2887.9	2494.7	1934.1	1588.3	1488.7
55°	2678.3	2269.5	1703.4	1389.2	1289.6
57.5°	2463.6	2044.2	1499.3	1205.7	1121.7
60°	2243.3	1824.0	1284.1	1017.1	933.1
62.5°	2028.7	1609.4	1100.6	849.1	807.5
65°	1808.5	1383.6	912.0	734.0	717.9
67.5°	1598.8	1174.0	734.0	644.5	628.9
70°	1378.6	969.9	607.8	555.6	534.4
72.5°	1169.0	780.8	508.3	466.6	456.1
75°	964.3	597.3	419.3	382.6	377.6
77.5°	760.3	424.3	330.3	309.2	298.6
80°	571.2	304.2	251.4	230.8	230.8
82.5°	398.2	204.6	173.0	162.4	162.4
85°	225.2	115.1	99.5	99.5	99.5
87.5°	84.0	41.7	41.7	36.7	36.7
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	16.11	17.63	16.47	17.94	18.26	12.07	13.59	12.43	13.90	14.22
	3H	17.87	19.24	18.25	19.56	19.93	13.33	14.70	13.71	15.03	15.39
	4H	18.54	19.82	18.94	20.17	20.55	13.83	15.11	14.23	15.46	15.84
	6H	19.03	20.21	19.44	20.58	20.97	14.21	15.40	14.63	15.76	16.16
	8H	19.19	20.32	19.62	20.71	21.11	14.34	15.47	14.77	15.86	16.26
	12H	19.30	20.37	19.73	20.76	21.19	14.42	15.50	14.85	15.88	16.31
4H	2H	16.21	17.49	16.61	17.84	18.22	12.76	14.04	13.16	14.39	14.77
	3H	18.14	19.21	18.55	19.61	20.01	14.21	15.27	14.62	15.67	16.07
	4H	18.89	19.85	19.33	20.27	20.70	14.81	15.76	15.24	16.18	16.62
	6H	19.49	20.32	19.94	20.76	21.22	15.29	16.13	15.75	16.57	17.03
	8H	19.70	20.48	20.16	20.92	21.39	15.46	16.23	15.92	16.68	17.14
	12H	19.85	20.55	20.34	21.03	21.50	15.57	16.27	16.05	16.75	17.22
8H	4H	18.92	19.69	19.38	20.14	20.61	15.16	15.94	15.62	16.38	16.85
	6H	19.55	20.20	20.05	20.69	21.17	15.75	16.39	16.24	16.88	17.36
	8H	19.81	20.38	20.32	20.89	21.38	15.97	16.54	16.48	17.05	17.54
	12H	20.01	20.52	20.52	21.01	21.58	16.15	16.66	16.66	17.15	17.71
12H	4H	18.90	19.60	19.38	20.07	20.55	15.20	15.90	15.68	16.38	16.85
	6H	19.54	20.11	20.05	20.62	21.11	15.81	16.39	16.32	16.90	17.38
	8H	19.82	20.33	20.33	20.82	21.39	16.08	16.59	16.59	17.08	17.65