

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: P931206

Luminaire Tested: DFN2DS-SQ4F0-140DS940-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931206
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-SQ4F0-140DS940-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

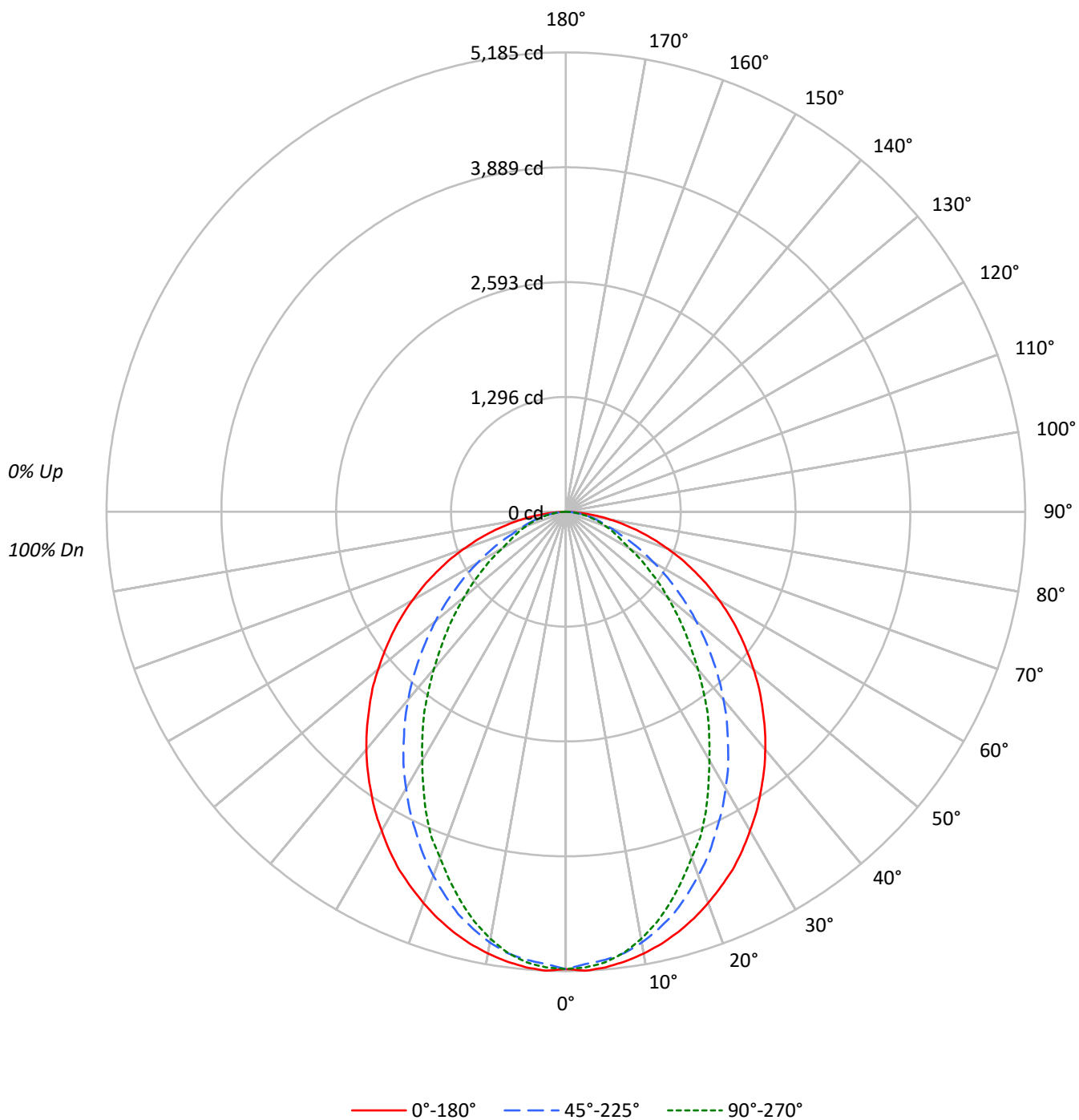
Lumens per Lamp: N/A
Luminaire Lumens: 10614.8 lumens
Efficiency: N/A
Efficacy: 70.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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°	3622	3622	3622
5°	3635	3576	3596
10°	3608	3518	3488
15°	3566	3413	3315
20°	3509	3265	3101
25°	3450	3095	2893
30°	3368	2921	2626
35°	3289	2733	2392
40°	3209	2537	2122
45°	3115	2318	1877
50°	3019	2096	1637
55°	2920	1857	1406
60°	2805	1606	1167
65°	2676	1349	1062
70°	2520	1111	977
75°	2330	1013	912
80°	2057	905	831
85°	1616	714	714

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3115 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	483.7	4.6
10°-20°	1327.9	12.5
20°-30°	1864.3	17.6
30°-40°	2032.3	19.1
40°-50°	1867.9	17.6
50°-60°	1466.9	13.8
60°-70°	954.8	9.0
70°-80°	491.5	4.6
80°-90°	125.5	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°	3676.0	34.6
0°-40°	5708.2	53.8
0°-60°	9043.0	85.2
0°-90°	10614.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10614.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5161	5161	5161	5161	5161	
5°	5161	5138	5077	5119	5105	489
15°	4909	4858	4699	4610	4564	1383
25°	4456	4306	3998	3807	3736	2049
35°	3840	3601	3190	2896	2793	2403
45°	3139	2826	2336	2004	1892	2424
55°	2387	2022	1518	1238	1149	2133
65°	1612	1233	813	654	640	1598
75°	859	532	374	341	336	909
85°	201	103	89	89	89	241
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5161.3	5161.3	5161.3	5161.3	5161.3
2.5°	5184.6	5161.3	5109.7	5156.8	5147.4
5°	5161.3	5138.0	5077.0	5119.2	5105.3
7.5°	5119.2	5091.4	5026.0	5044.3	5021.1
10°	5063.2	5030.4	4937.3	4922.9	4895.1
12.5°	4993.2	4951.1	4824.7	4797.0	4745.5
15°	4909.0	4857.5	4698.9	4610.2	4563.7
17.5°	4810.9	4736.1	4539.8	4437.3	4362.4
20°	4698.9	4605.2	4371.9	4255.4	4152.3
22.5°	4577.5	4470.0	4198.9	4040.3	3970.5
25°	4456.1	4306.4	3998.2	3806.9	3736.5
27.5°	4311.4	4152.3	3811.3	3591.8	3484.3
30°	4157.3	3979.4	3605.7	3367.8	3241.4
32.5°	4007.6	3792.5	3409.9	3129.5	3012.6
35°	3839.6	3601.3	3190.4	2896.1	2792.9
37.5°	3676.1	3418.9	2984.7	2662.2	2545.7
40°	3503.2	3223.2	2769.7	2438.2	2316.8
42.5°	3325.7	3026.9	2555.1	2209.2	2092.7
45°	3138.9	2825.7	2335.6	2003.5	1891.6
47.5°	2961.4	2630.0	2125.5	1793.5	1690.9
50°	2765.2	2433.7	1919.8	1597.2	1499.5
52.5°	2573.4	2223.0	1723.5	1415.3	1326.6
55°	2386.6	2022.3	1517.9	1237.9	1149.2
57.5°	2195.3	1821.6	1336.0	1074.4	999.6
60°	1999.1	1625.4	1144.3	906.4	831.5
62.5°	1807.8	1434.2	980.8	756.7	719.6
65°	1611.6	1232.9	812.7	654.1	639.7
67.5°	1424.7	1046.1	654.1	574.4	560.4
70°	1228.5	864.3	541.6	495.1	476.2
72.5°	1041.7	695.8	453.0	415.8	406.4
75°	859.3	532.3	373.7	340.9	336.5
77.5°	677.5	378.1	294.4	275.5	266.1
80°	509.0	271.1	224.0	205.7	205.7
82.5°	354.8	182.3	154.1	144.7	144.7
85°	200.7	102.6	88.7	88.7	88.7
87.5°	74.8	37.2	37.2	32.7	32.7
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	15.71	17.23	16.07	17.54	17.86	11.67	13.19	12.03	13.50	13.82
	3H	17.47	18.84	17.85	19.16	19.53	12.93	14.30	13.31	14.62	14.99
	4H	18.14	19.42	18.54	19.77	20.15	13.43	14.71	13.83	15.06	15.44
	6H	18.63	19.81	19.04	20.18	20.57	13.81	15.00	14.23	15.36	15.76
	8H	18.79	19.92	19.22	20.31	20.71	13.94	15.07	14.37	15.46	15.86
	12H	18.89	19.97	19.33	20.36	20.78	14.02	15.10	14.45	15.48	15.91
4H	2H	15.81	17.09	16.21	17.44	17.82	12.36	13.64	12.76	13.99	14.37
	3H	17.74	18.81	18.15	19.21	19.61	13.81	14.87	14.22	15.27	15.67
	4H	18.49	19.45	18.93	19.86	20.30	14.40	15.36	14.84	15.78	16.22
	6H	19.08	19.92	19.54	20.36	20.82	14.89	15.72	15.35	16.17	16.63
	8H	19.30	20.08	19.76	20.52	20.99	15.05	15.83	15.52	16.28	16.74
	12H	19.45	20.15	19.93	20.63	21.10	15.17	15.87	15.65	16.34	16.82
8H	4H	18.52	19.29	18.98	19.74	20.21	14.76	15.54	15.22	15.98	16.45
	6H	19.15	19.80	19.65	20.29	20.77	15.35	15.99	15.84	16.48	16.96
	8H	19.40	19.98	19.92	20.49	20.98	15.57	16.14	16.08	16.65	17.14
	12H	19.61	20.12	20.12	20.61	21.18	15.75	16.26	16.25	16.75	17.31
12H	4H	18.50	19.20	18.98	19.67	20.15	14.80	15.50	15.28	15.97	16.45
	6H	19.14	19.71	19.65	20.22	20.71	15.41	15.99	15.92	16.50	16.98
	8H	19.42	19.93	19.93	20.42	20.99	15.68	16.19	16.19	16.68	17.25