

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: P931142

Luminaire Tested: DFN2DS-SQ4F0-100DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931142
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-SQ4F0-100DS840-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

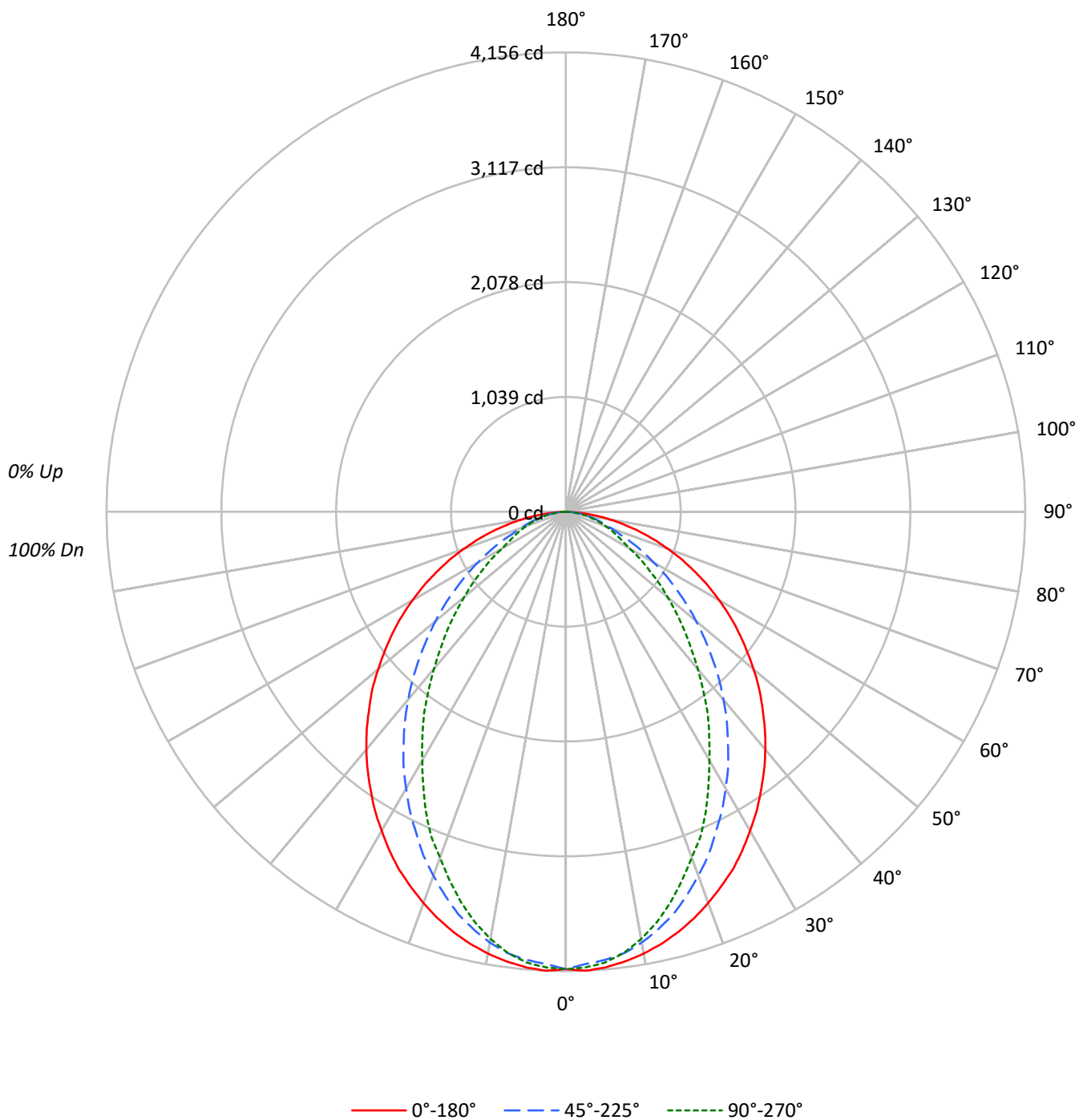
Lumens per Lamp: N/A
Luminaire Lumens: 8508.5 lumens
Efficiency: N/A
Efficacy: 84.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 100.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	88	88	86
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	76	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	66	66	64
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	57	57	55
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	51	51	49
6	74	61	53	47	72	60	52	46	58	51	46	57	50	46	55	50	45	45	45	43
7	68	56	47	42	67	55	47	42	53	46	41	52	46	41	51	45	41	41	41	39
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	37	37	35
9	60	47	39	34	59	47	39	34	46	39	34	44	38	34	44	38	34	34	34	32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	31	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2903	2903	2903
5°	2914	2866	2882
10°	2892	2820	2796
15°	2858	2736	2657
20°	2812	2617	2485
25°	2765	2481	2319
30°	2700	2342	2105
35°	2636	2191	1918
40°	2572	2034	1701
45°	2497	1858	1505
50°	2420	1680	1312
55°	2340	1488	1127
60°	2249	1287	935
65°	2145	1082	851
70°	2020	891	783
75°	1867	812	731
80°	1648	726	666
85°	1295	572	572

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2497 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	387.7	4.6
10°-20°	1064.4	12.5
20°-30°	1494.4	17.6
30°-40°	1629.0	19.1
40°-50°	1497.2	17.6
50°-60°	1175.8	13.8
60°-70°	765.3	9.0
70°-80°	394.0	4.6
80°-90°	100.6	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°	2946.5	34.6
0°-40°	4575.5	53.8
0°-60°	7248.6	85.2
0°-90°	8508.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8508.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4137	4137	4137	4137	4137	
5°	4137	4118	4070	4103	4092	392
15°	3935	3894	3766	3695	3658	1109
25°	3572	3452	3205	3051	2995	1643
35°	3078	2887	2557	2321	2239	1926
45°	2516	2265	1872	1606	1516	1943
55°	1913	1621	1217	992	921	1709
65°	1292	988	652	524	513	1281
75°	689	427	300	273	270	729
85°	161	82	71	71	71	193
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4137.1	4137.1	4137.1	4137.1	4137.1
2.5°	4155.8	4137.1	4095.8	4133.5	4126.0
5°	4137.1	4118.4	4069.6	4103.4	4092.2
7.5°	4103.4	4081.1	4028.6	4043.3	4024.7
10°	4058.5	4032.2	3957.6	3946.0	3923.8
12.5°	4002.5	3968.7	3867.4	3845.1	3803.8
15°	3934.9	3893.6	3766.5	3695.4	3658.1
17.5°	3856.3	3796.3	3639.0	3556.8	3496.8
20°	3766.5	3691.4	3504.3	3411.0	3328.3
22.5°	3669.2	3583.0	3365.7	3238.6	3182.6
25°	3571.9	3451.9	3204.8	3051.4	2995.1
27.5°	3455.9	3328.3	3055.1	2879.1	2792.9
30°	3332.3	3189.7	2890.2	2699.6	2598.3
32.5°	3212.4	3039.9	2733.3	2508.5	2414.7
35°	3077.7	2886.7	2557.4	2321.4	2238.7
37.5°	2946.6	2740.4	2392.5	2133.9	2040.5
40°	2808.0	2583.6	2220.1	1954.4	1857.1
42.5°	2665.8	2426.2	2048.1	1770.9	1677.5
45°	2516.0	2265.0	1872.2	1606.0	1516.2
47.5°	2373.9	2108.1	1703.7	1437.5	1355.4
50°	2216.5	1950.7	1538.8	1280.3	1202.0
52.5°	2062.8	1782.0	1381.6	1134.4	1063.4
55°	1913.0	1621.1	1216.7	992.3	921.1
57.5°	1759.8	1460.2	1071.0	861.2	801.2
60°	1602.4	1302.9	917.2	726.5	666.6
62.5°	1449.0	1149.5	786.1	606.6	576.8
65°	1291.8	988.3	651.5	524.3	512.8
67.5°	1142.0	838.5	524.3	460.4	449.2
70°	984.7	692.8	434.1	396.8	381.8
72.5°	834.9	557.7	363.1	333.2	325.7
75°	688.8	426.6	299.5	273.3	269.7
77.5°	543.0	303.1	235.9	220.8	213.3
80°	407.9	217.3	179.6	164.9	164.9
82.5°	284.4	146.1	123.5	116.0	116.0
85°	160.9	82.2	71.1	71.1	71.1
87.5°	60.0	29.8	29.8	26.2	26.2
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	14.94	16.46	15.30	16.77	17.09	10.90	12.42	11.26	12.73	13.05
	3H	16.70	18.07	17.08	18.40	18.76	12.16	13.53	12.54	13.86	14.22
	4H	17.37	18.65	17.77	19.00	19.38	12.66	13.95	13.06	14.29	14.67
	6H	17.86	19.04	18.27	19.41	19.80	13.05	14.23	13.46	14.60	14.99
	8H	18.02	19.15	18.45	19.54	19.94	13.17	14.30	13.60	14.69	15.09
	12H	18.13	19.20	18.56	19.59	20.02	13.25	14.33	13.68	14.71	15.14
4H	2H	15.04	16.32	15.44	16.67	17.05	11.59	12.87	11.99	13.22	13.60
	3H	16.97	18.04	17.39	18.44	18.84	13.04	14.10	13.45	14.50	14.90
	4H	17.72	18.68	18.16	19.10	19.53	13.64	14.59	14.07	15.01	15.45
	6H	18.32	19.15	18.77	19.59	20.05	14.12	14.96	14.58	15.40	15.86
	8H	18.53	19.31	18.99	19.75	20.22	14.29	15.06	14.75	15.51	15.97
	12H	18.68	19.38	19.17	19.86	20.33	14.40	15.10	14.89	15.58	16.05
8H	4H	17.75	18.53	18.21	18.97	19.44	13.99	14.77	14.45	15.21	15.68
	6H	18.39	19.03	18.88	19.52	20.00	14.58	15.22	15.07	15.71	16.19
	8H	18.64	19.21	19.15	19.72	20.21	14.80	15.37	15.31	15.88	16.37
	12H	18.84	19.35	19.35	19.84	20.41	14.98	15.49	15.49	15.98	16.54
12H	4H	17.73	18.43	18.21	18.91	19.38	14.03	14.73	14.52	15.21	15.68
	6H	18.37	18.94	18.88	19.45	19.94	14.64	15.22	15.15	15.73	16.22
	8H	18.65	19.16	19.16	19.65	20.22	14.91	15.42	15.42	15.92	16.48