

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: P929918

Luminaire Tested: DFN2DS-4P3F0-060DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P929918
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-4P3F0-060DS840-RLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

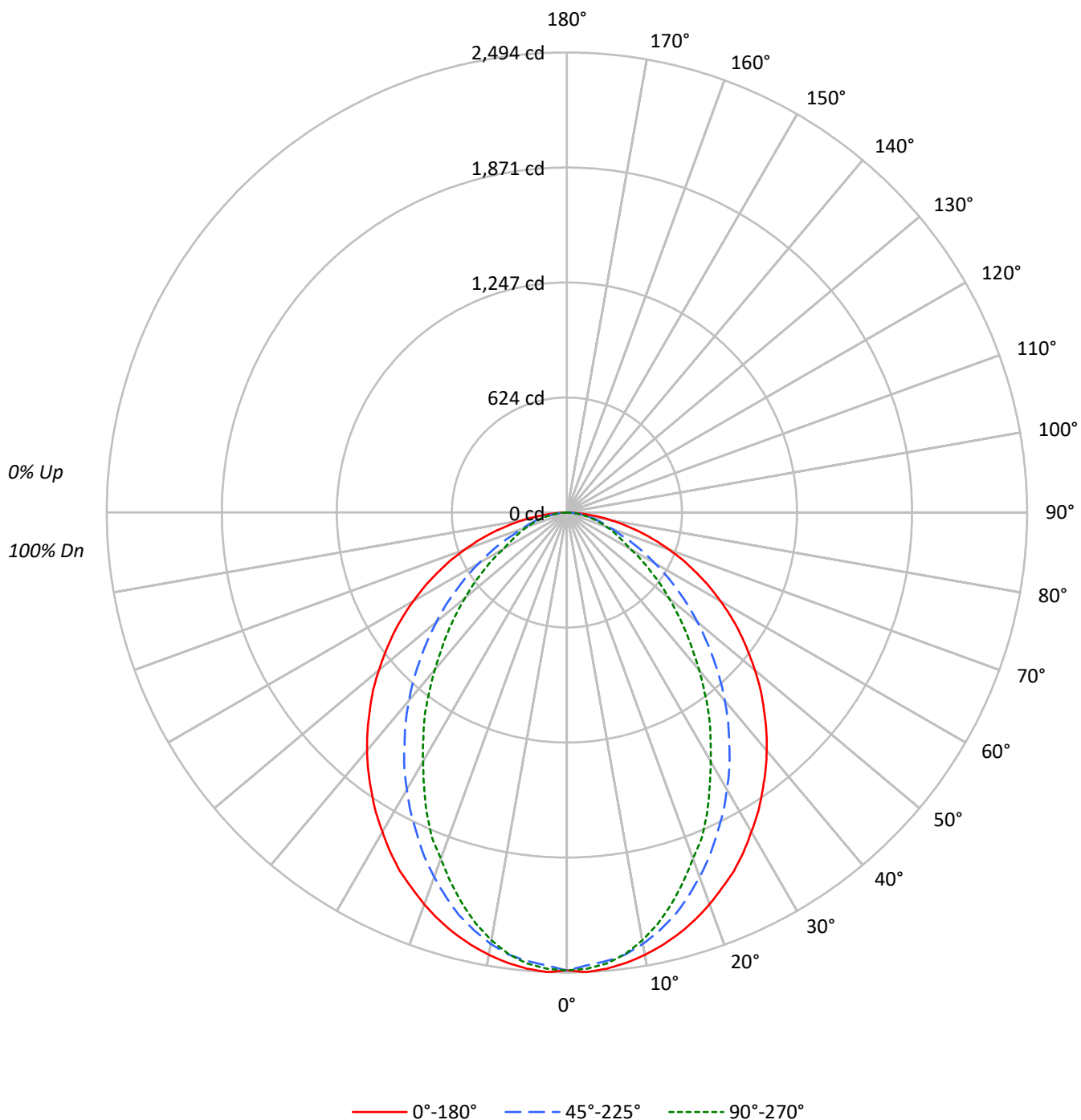
Lumens per Lamp: N/A
Luminaire Lumens: 5105.1 lumens
Efficiency: N/A
Efficacy: 78.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.07' x L: 3.07' x H: 0')
CIE Type: Direct

Input Watts (W): 65
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P929918

CATALOG NUMBER: DFN2DS-4P3F0-060DS840-RLL

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°	2829	2829	2829
5°	2840	2793	2809
10°	2818	2748	2724
15°	2785	2666	2589
20°	2741	2550	2422
25°	2695	2418	2260
30°	2631	2282	2051
35°	2569	2135	1869
40°	2506	1982	1658
45°	2433	1810	1466
50°	2358	1637	1279
55°	2280	1450	1098
60°	2191	1254	911
65°	2090	1054	830
70°	1969	868	763
75°	1820	791	713
80°	1606	707	649
85°	1262	557	557

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2433 cd/sqm

TEST NUMBER: P929918

CATALOG NUMBER: DFN2DS-4P3F0-060DS840-RLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.6	4.6
10°-20°	638.6	12.5
20°-30°	896.6	17.6
30°-40°	977.4	19.1
40°-50°	898.3	17.6
50°-60°	705.5	13.8
60°-70°	459.2	9.0
70°-80°	236.4	4.6
80°-90°	60.3	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°	1767.9	34.6
0°-40°	2745.3	53.8
0°-60°	4349.1	85.2
0°-90°	5105.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5105.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2482	2482	2482	2482	2482	
5°	2482	2471	2442	2462	2455	235
15°	2361	2336	2260	2217	2195	665
25°	2143	2071	1923	1831	1797	986
35°	1847	1732	1534	1393	1343	1156
45°	1510	1359	1123	964	910	1166
55°	1148	973	730	595	553	1026
65°	775	593	391	315	308	768
75°	413	256	180	164	162	437
85°	96	49	43	43	43	116
90°	0	0	0	0	0	

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CATALOG NUMBER: DFN2DS-4P3F0-060DS840-RLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2482.3	2482.3	2482.3	2482.3	2482.3
2.5°	2493.5	2482.3	2457.5	2480.1	2475.6
5°	2482.3	2471.1	2441.7	2462.1	2455.4
7.5°	2462.1	2448.6	2417.2	2426.0	2414.8
10°	2435.0	2419.3	2374.6	2367.7	2354.3
12.5°	2401.5	2381.2	2320.4	2307.1	2282.3
15°	2361.0	2336.1	2259.9	2217.2	2194.8
17.5°	2313.8	2277.8	2183.4	2134.0	2098.1
20°	2259.9	2214.8	2102.6	2046.5	1997.0
22.5°	2201.5	2149.7	2019.4	1943.1	1909.5
25°	2143.1	2071.2	1922.9	1830.9	1797.1
27.5°	2073.6	1997.0	1833.0	1727.4	1675.8
30°	1999.4	1913.8	1734.1	1619.7	1559.0
32.5°	1927.4	1824.0	1640.0	1505.1	1448.8
35°	1846.6	1732.0	1534.4	1392.8	1343.2
37.5°	1768.0	1644.2	1435.5	1280.4	1224.3
40°	1684.8	1550.1	1332.0	1172.6	1114.2
42.5°	1599.5	1455.8	1228.8	1062.5	1006.5
45°	1509.6	1359.0	1123.3	963.6	909.7
47.5°	1424.3	1264.9	1022.2	862.6	813.2
50°	1329.9	1170.5	923.3	768.2	721.2
52.5°	1237.6	1069.2	828.9	680.7	638.0
55°	1147.8	972.7	730.0	595.4	552.7
57.5°	1055.9	876.1	642.5	516.7	480.7
60°	961.5	781.8	550.3	435.9	399.9
62.5°	869.5	689.8	471.7	364.0	346.0
65°	775.1	593.0	390.9	314.6	307.7
67.5°	685.2	503.1	314.6	276.3	269.6
70°	590.8	415.6	260.5	238.1	229.0
72.5°	501.0	334.6	217.8	200.0	195.4
75°	413.3	256.0	179.7	164.0	161.9
77.5°	325.8	181.9	141.5	132.5	128.0
80°	244.7	130.3	107.7	98.9	98.9
82.5°	170.7	87.7	74.1	69.6	69.6
85°	96.5	49.3	42.6	42.6	42.6
87.5°	36.0	17.9	17.9	15.7	15.7
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	14.85	16.37	15.21	16.68	17.00	10.81	12.33	11.17	12.64	12.96
	3H	16.61	17.98	16.99	18.31	18.67	12.07	13.44	12.45	13.77	14.13
	4H	17.28	18.56	17.68	18.91	19.29	12.58	13.86	12.97	14.20	14.58
	6H	17.77	18.95	18.18	19.32	19.71	12.96	14.14	13.37	14.51	14.90
	8H	17.93	19.06	18.36	19.45	19.85	13.08	14.21	13.51	14.60	15.00
	12H	18.04	19.11	18.47	19.50	19.93	13.16	14.24	13.59	14.62	15.05
4H	2H	14.95	16.23	15.35	16.58	16.96	11.50	12.78	11.90	13.13	13.51
	3H	16.88	17.95	17.30	18.35	18.75	12.95	14.01	13.36	14.41	14.81
	4H	17.63	18.59	18.07	19.01	19.44	13.55	14.50	13.98	14.92	15.36
	6H	18.23	19.06	18.68	19.50	19.96	14.03	14.87	14.49	15.31	15.77
	8H	18.44	19.22	18.90	19.66	20.13	14.20	14.97	14.66	15.42	15.89
	12H	18.59	19.29	19.08	19.77	20.24	14.31	15.01	14.80	15.49	15.96
8H	4H	17.66	18.44	18.12	18.88	19.35	13.90	14.68	14.36	15.12	15.59
	6H	18.30	18.94	18.79	19.43	19.91	14.49	15.13	14.98	15.62	16.10
	8H	18.55	19.12	19.06	19.63	20.12	14.71	15.28	15.22	15.79	16.28
	12H	18.75	19.26	19.26	19.75	20.32	14.89	15.40	15.40	15.89	16.45
12H	4H	17.64	18.34	18.12	18.82	19.29	13.94	14.64	14.43	15.12	15.59
	6H	18.28	18.85	18.79	19.36	19.85	14.55	15.13	15.06	15.64	16.13
	8H	18.56	19.07	19.07	19.56	20.13	14.82	15.33	15.33	15.83	16.39