

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: P930021

Luminaire Tested: DFN2DS-4P4F0-080DS830-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930021
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-4P4F0-080DS830-FLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

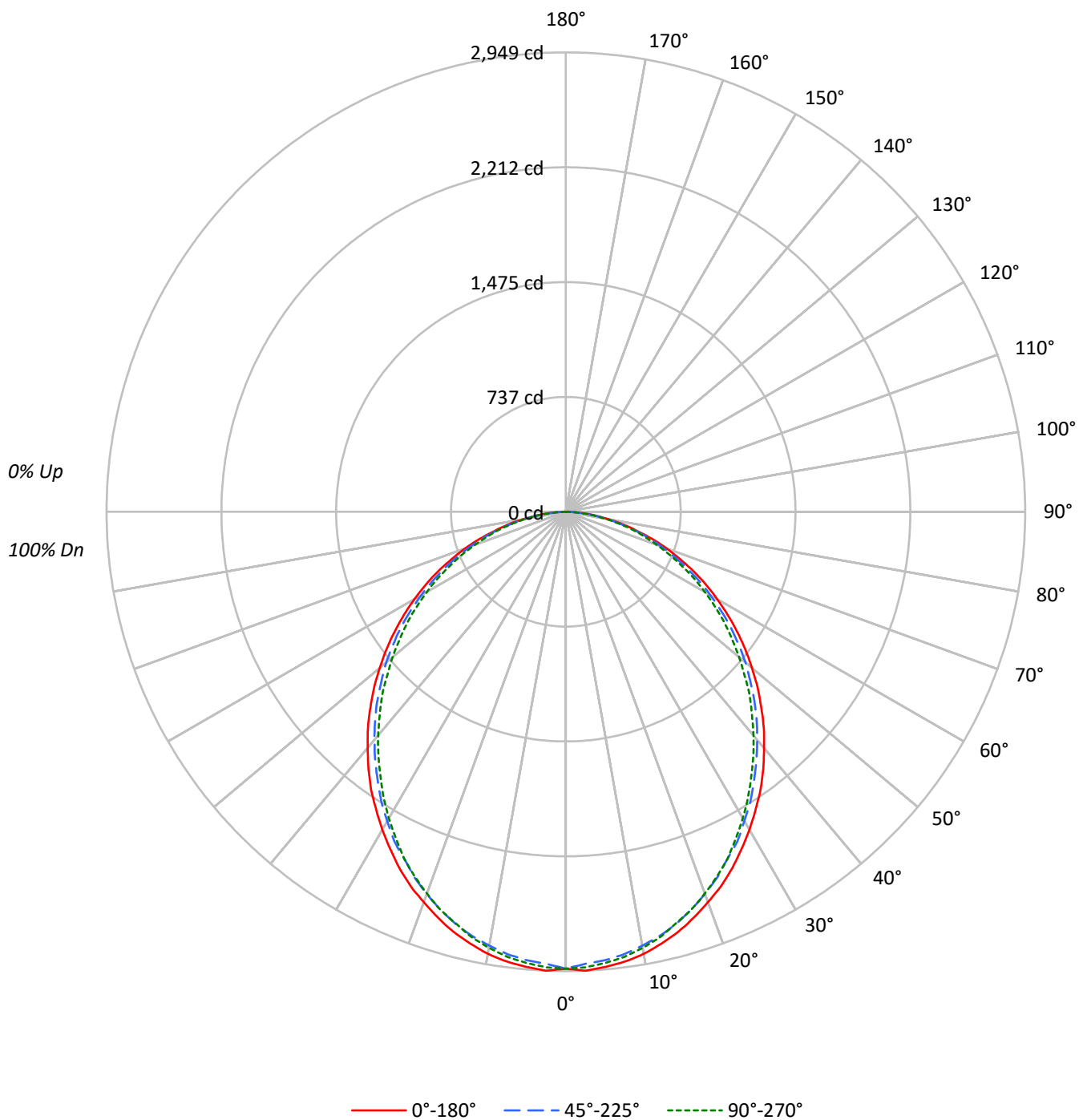
Lumens per Lamp: N/A
Luminaire Lumens: 7460.7 lumens
Efficiency: N/A
Efficacy: 86.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 4.07' x L: 4.07' x H: 0')
CIE Type: Direct

Input Watts (W): 86.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P930021

CATALOG NUMBER: DFN2DS-4P4F0-080DS830-FLL

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	109	104	100	96	106	102	98	95	98	95	92		94	91	89		90
2	99	91	85	79	97	89	83	78	86	81	76		83	78	74		80
3	91	80	72	66	88	79	71	65	76	69	64		73	68	63		71
4	83	71	63	56	81	70	62	56	68	61	55		65	59	54		63
5	77	64	55	49	75	63	55	48	61	53	48		59	52	47		57
6	71	58	49	43	69	57	48	42	55	48	42		53	47	42		52
7	66	52	44	38	64	52	43	38	50	43	37		49	42	37		47
8	61	48	40	34	60	47	39	34	46	39	33		45	38	33		44
9	57	44	36	30	56	43	36	30	42	35	30		41	35	30		40
10	54	41	33	28	53	40	33	28	39	32	27		38	32	27		37

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1902	1902	1902
5°	1910	1882	1893
10°	1898	1863	1872
15°	1875	1839	1837
20°	1841	1803	1801
25°	1808	1758	1758
30°	1766	1717	1702
35°	1726	1668	1643
40°	1676	1619	1588
45°	1627	1570	1532
50°	1574	1520	1466
55°	1518	1461	1406
60°	1456	1390	1339
65°	1390	1320	1260
70°	1305	1235	1177
75°	1187	1138	1110
80°	1054	1022	969
85°	860	820	735

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1627 cd/sqm

TEST NUMBER: P930021

CATALOG NUMBER: DFN2DS-4P4F0-080DS830-FLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.0	3.7
10°-20°	776.5	10.4
20°-30°	1141.2	15.3
30°-40°	1325.4	17.8
40°-50°	1323.8	17.7
50°-60°	1154.3	15.5
60°-70°	853.3	11.4
70°-80°	482.8	6.5
80°-90°	127.4	1.7
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°	2193.7	29.4
0°-40°	3519.1	47.2
0°-60°	5997.2	80.4
0°-90°	7460.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7460.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2932	2932	2932	2932	2932	
5°	2932	2921	2890	2913	2907	278
15°	2791	2775	2738	2749	2735	786
25°	2526	2504	2456	2461	2456	1163
35°	2180	2152	2106	2089	2075	1361
45°	1774	1754	1711	1681	1669	1369
55°	1342	1325	1292	1258	1244	1200
65°	905	888	860	835	821	895
75°	474	468	454	437	443	505
85°	116	113	110	102	99	136
90°	0	0	0	0	0	

TEST NUMBER: P930021

CATALOG NUMBER: DFN2DS-4P4F0-080DS830-FLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2932.3	2932.3	2932.3	2932.3	2932.3
2.5°	2949.3	2935.3	2904.2	2932.3	2926.9
5°	2932.3	2921.2	2890.2	2912.6	2907.2
7.5°	2912.6	2895.8	2864.7	2887.4	2881.8
10°	2881.8	2862.0	2828.2	2850.6	2842.3
12.5°	2839.3	2822.5	2788.7	2802.7	2797.1
15°	2791.4	2774.7	2737.8	2749.2	2735.2
17.5°	2732.2	2715.4	2678.6	2692.7	2678.6
20°	2667.3	2650.5	2611.0	2619.4	2608.3
22.5°	2602.7	2577.2	2540.4	2540.4	2534.7
25°	2526.3	2503.9	2456.1	2461.4	2456.1
27.5°	2441.7	2422.0	2385.4	2377.0	2363.0
30°	2357.4	2334.6	2292.5	2284.1	2272.7
32.5°	2267.0	2250.2	2205.0	2188.0	2176.7
35°	2179.6	2151.5	2106.3	2089.3	2075.2
37.5°	2080.9	2055.4	2010.3	1990.5	1976.5
40°	1979.5	1956.7	1911.6	1886.4	1875.1
42.5°	1880.8	1858.0	1813.2	1784.7	1768.0
45°	1773.7	1753.9	1711.4	1680.6	1669.3
47.5°	1669.3	1649.5	1604.3	1573.2	1556.5
50°	1559.2	1545.2	1505.6	1466.1	1452.1
52.5°	1452.1	1432.3	1395.9	1364.8	1345.0
55°	1342.3	1325.2	1291.5	1257.7	1243.5
57.5°	1232.2	1218.2	1181.4	1147.5	1136.1
60°	1122.1	1111.1	1071.5	1040.4	1032.1
62.5°	1015.0	995.3	967.2	939.1	927.7
65°	905.3	888.2	860.0	834.6	820.6
67.5°	792.4	778.1	752.9	733.3	721.9
70°	688.0	676.6	651.3	631.5	620.4
72.5°	580.9	569.6	555.5	535.8	527.4
75°	473.5	468.2	453.9	437.1	442.7
77.5°	377.8	366.4	360.8	352.4	344.0
80°	282.1	279.1	273.5	265.1	259.3
82.5°	191.8	191.8	189.1	177.7	177.7
85°	115.5	112.8	110.1	101.5	98.7
87.5°	50.9	45.2	39.5	31.1	28.2
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P930021

CATALOG NUMBER: DFN2DS-4P4F0-080DS830-FLL

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	13.52	15.13	13.88	15.44	15.76	13.07	14.68	13.44	15.00	15.31
	3H	15.27	16.72	15.64	17.05	17.41	14.78	16.23	15.15	16.56	16.92
	4H	15.91	17.28	16.31	17.63	18.01	15.42	16.79	15.82	17.14	17.51
	6H	16.38	17.65	16.79	18.02	18.41	15.88	17.15	16.29	17.51	17.90
	8H	16.53	17.74	16.95	18.13	18.52	16.02	17.23	16.45	17.62	18.02
	12H	16.62	17.78	17.05	18.16	18.59	16.10	17.26	16.53	17.64	18.07
4H	2H	14.08	15.45	14.48	15.79	16.17	13.72	15.09	14.12	15.44	15.82
	3H	16.05	17.20	16.46	17.60	18.00	15.65	16.79	16.06	17.19	17.59
	4H	16.83	17.86	17.26	18.28	18.71	16.40	17.44	16.84	17.85	18.29
	6H	17.43	18.33	17.88	18.77	19.23	16.99	17.90	17.45	18.34	18.79
	8H	17.61	18.46	18.08	18.90	19.37	17.18	18.02	17.64	18.47	18.93
	12H	17.75	18.51	18.23	18.98	19.45	17.29	18.05	17.77	18.53	19.00
8H	4H	17.10	17.95	17.56	18.39	18.86	16.73	17.57	17.19	18.02	18.48
	6H	17.82	18.52	18.31	19.01	19.48	17.43	18.14	17.93	18.63	19.10
	8H	18.08	18.71	18.59	19.21	19.70	17.68	18.31	18.19	18.82	19.31
	12H	18.28	18.83	18.78	19.32	19.89	17.86	18.42	18.37	18.91	19.47
12H	4H	17.13	17.89	17.61	18.36	18.83	16.76	17.52	17.24	18.00	18.47
	6H	17.86	18.49	18.37	19.00	19.49	17.49	18.13	18.00	18.63	19.12
	8H	18.18	18.73	18.68	19.22	19.79	17.80	18.36	18.30	18.85	19.41