

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: P930381

Luminaire Tested: DFN2DS-HX4F0-110DS830-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930381
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-HX4F0-110DS830-FLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

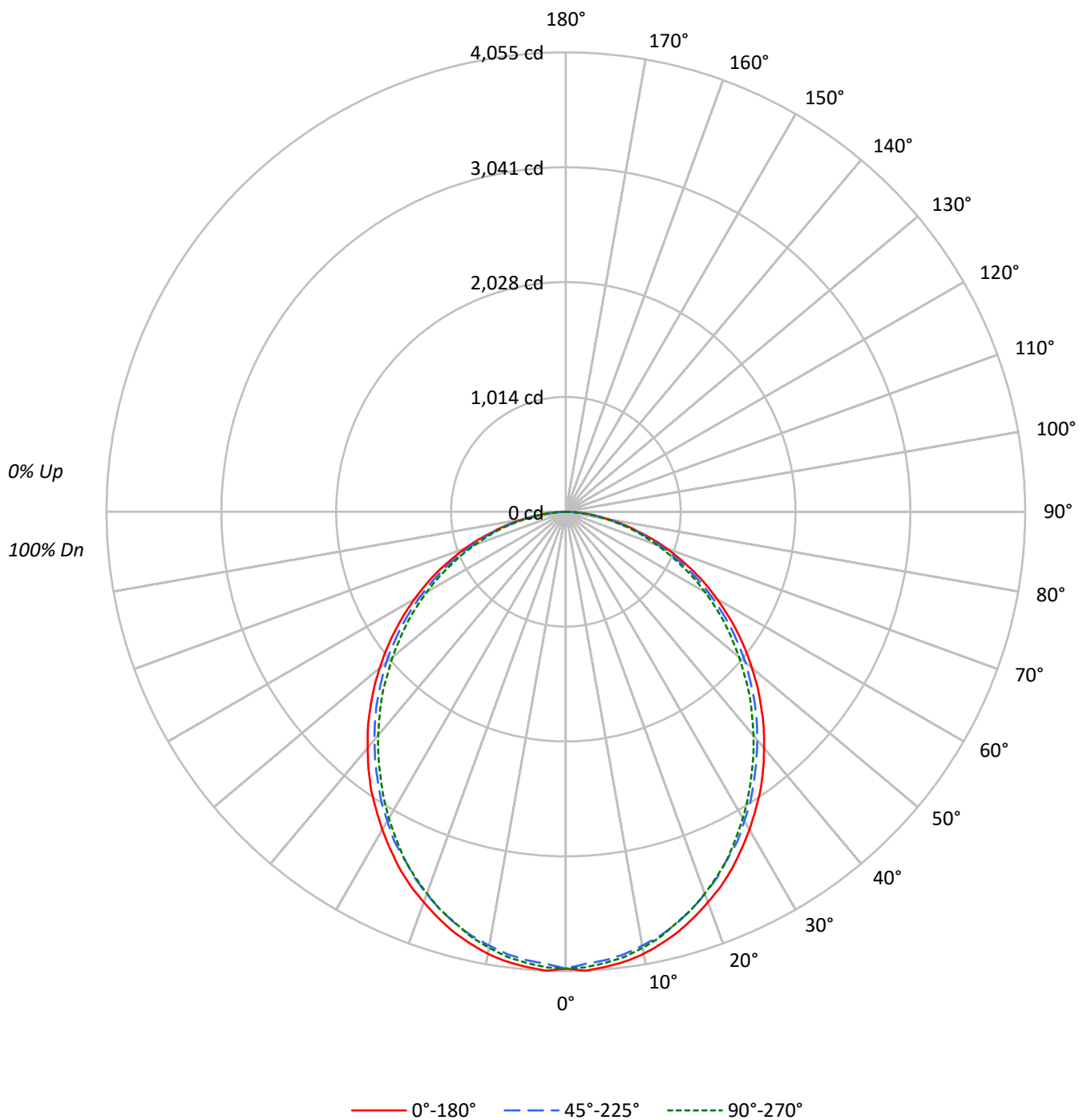
Lumens per Lamp: N/A
Luminaire Lumens: 10258.4 lumens
Efficiency: N/A
Efficacy: 87.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 117.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P930381

CATALOG NUMBER: DFN2DS-HX4F0-110DS830-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	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	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	86	86	84
2	99	91	85	79	97	89	83	78	86	81	76	83	78	74	80	76	73	73	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	71	66	62	62	62	60
4	83	71	63	56	81	70	62	56	68	61	55	65	59	54	63	58	54	54	54	51
5	77	64	55	49	75	63	55	48	61	53	48	59	52	47	57	51	47	47	47	45
6	71	58	49	43	69	57	48	42	55	48	42	53	47	42	52	46	41	41	41	39
7	66	52	44	38	64	52	43	38	50	43	37	49	42	37	47	41	37	37	37	35
8	61	48	40	34	60	47	39	34	46	39	33	45	38	33	44	38	33	33	33	31
9	57	44	36	30	56	43	36	30	42	35	30	41	35	30	40	34	30	30	30	28
10	54	41	33	28	53	40	33	28	39	32	27	38	32	27	37	32	27	27	27	26

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2998	2998	2998
5°	3009	2966	2984
10°	2992	2936	2951
15°	2955	2898	2895
20°	2902	2841	2838
25°	2850	2771	2771
30°	2783	2706	2683
35°	2720	2629	2590
40°	2642	2551	2503
45°	2565	2475	2414
50°	2480	2395	2310
55°	2393	2302	2217
60°	2294	2191	2110
65°	2190	2081	1985
70°	2057	1947	1855
75°	1871	1793	1749
80°	1661	1610	1527
85°	1355	1292	1158

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2565 cd/sqm

TEST NUMBER: P930381

CATALOG NUMBER: DFN2DS-HX4F0-110DS830-FLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	379.5	3.7
10°-20°	1067.7	10.4
20°-30°	1569.1	15.3
30°-40°	1822.4	17.8
40°-50°	1820.2	17.7
50°-60°	1587.1	15.5
60°-70°	1173.3	11.4
70°-80°	663.8	6.5
80°-90°	175.2	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°	3016.3	29.4
0°-40°	4838.8	47.2
0°-60°	8246.1	80.4
0°-90°	10258.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10258.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4032	4032	4032	4032	4032	
5°	4032	4017	3974	4005	3997	383
15°	3838	3815	3764	3780	3761	1081
25°	3474	3443	3377	3384	3377	1598
35°	2997	2958	2896	2873	2853	1872
45°	2439	2412	2353	2311	2295	1882
55°	1846	1822	1776	1729	1710	1650
65°	1245	1221	1183	1148	1128	1231
75°	651	644	624	601	609	695
85°	159	155	151	139	136	187
90°	0	0	0	0	0	

TEST NUMBER: P930381

CATALOG NUMBER: DFN2DS-HX4F0-110DS830-FLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4031.9	4031.9	4031.9	4031.9	4031.9
2.5°	4055.3	4036.0	3993.2	4031.9	4024.5
5°	4031.9	4016.7	3973.9	4004.7	3997.4
7.5°	4004.7	3981.7	3939.0	3970.2	3962.4
10°	3962.4	3935.2	3888.8	3919.6	3908.1
12.5°	3904.0	3880.9	3834.5	3853.8	3846.0
15°	3838.2	3815.1	3764.5	3780.2	3760.8
17.5°	3756.7	3733.7	3683.1	3702.4	3683.1
20°	3667.5	3644.4	3590.2	3601.6	3586.5
22.5°	3578.7	3543.6	3493.0	3493.0	3485.2
25°	3473.7	3442.9	3377.1	3384.5	3377.1
27.5°	3357.3	3330.2	3279.9	3268.5	3249.1
30°	3241.3	3210.1	3152.0	3140.5	3124.9
32.5°	3117.1	3094.1	3031.9	3008.5	2992.8
35°	2997.0	2958.4	2896.2	2872.7	2853.4
37.5°	2861.2	2826.3	2764.2	2737.0	2717.7
40°	2721.8	2690.5	2628.5	2593.9	2578.3
42.5°	2586.1	2554.8	2493.1	2454.0	2431.0
45°	2438.8	2411.6	2353.2	2310.9	2295.3
47.5°	2295.3	2268.1	2206.0	2163.2	2140.1
50°	2143.9	2124.6	2070.2	2016.0	1996.7
52.5°	1996.7	1969.4	1919.3	1876.5	1849.3
55°	1845.7	1822.2	1775.8	1729.2	1709.9
57.5°	1694.3	1675.0	1624.4	1577.8	1562.2
60°	1542.9	1527.7	1473.4	1430.6	1419.1
62.5°	1395.7	1368.5	1329.8	1291.2	1275.6
65°	1244.7	1221.2	1182.6	1147.6	1128.3
67.5°	1089.6	1069.9	1035.4	1008.2	992.6
70°	946.1	930.4	895.5	868.3	853.1
72.5°	798.8	783.2	763.9	736.7	725.2
75°	651.1	643.8	624.0	601.0	608.8
77.5°	519.5	503.9	496.1	484.6	473.1
80°	387.9	383.8	376.0	364.5	356.6
82.5°	263.7	263.7	260.0	244.4	244.4
85°	158.8	155.1	151.4	139.4	135.7
87.5°	69.9	62.1	54.3	42.8	38.6
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P930381

CATALOG NUMBER: DFN2DS-HX4F0-110DS830-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	15.10	16.71	15.46	17.02	17.34	14.65	16.26	15.02	16.58	16.89
	3H	16.85	18.30	17.22	18.63	18.99	16.36	17.81	16.73	18.14	18.50
	4H	17.49	18.86	17.89	19.21	19.59	17.00	18.37	17.40	18.72	19.09
	6H	17.96	19.23	18.37	19.60	19.99	17.46	18.73	17.87	19.09	19.49
	8H	18.11	19.32	18.53	19.71	20.10	17.60	18.81	18.03	19.20	19.60
	12H	18.20	19.36	18.63	19.74	20.17	17.68	18.84	18.11	19.23	19.65
4H	2H	15.66	17.03	16.06	17.37	17.75	15.30	16.67	15.70	17.02	17.40
	3H	17.63	18.78	18.04	19.18	19.58	17.23	18.37	17.64	18.77	19.17
	4H	18.41	19.45	18.84	19.86	20.30	17.99	19.02	18.42	19.43	19.87
	6H	19.01	19.91	19.46	20.35	20.81	18.57	19.48	19.03	19.92	20.38
	8H	19.20	20.04	19.66	20.48	20.95	18.76	19.60	19.22	20.05	20.51
	12H	19.33	20.09	19.81	20.56	21.03	18.88	19.64	19.36	20.11	20.58
8H	4H	18.68	19.53	19.14	19.97	20.44	18.31	19.15	18.77	19.60	20.06
	6H	19.40	20.10	19.89	20.59	21.06	19.02	19.72	19.51	20.21	20.68
	8H	19.66	20.29	20.17	20.79	21.28	19.26	19.90	19.77	20.40	20.89
	12H	19.86	20.41	20.36	20.90	21.47	19.44	20.00	19.95	20.49	21.05
12H	4H	18.71	19.47	19.19	19.94	20.41	18.34	19.10	18.82	19.58	20.05
	6H	19.44	20.07	19.95	20.58	21.07	19.07	19.71	19.58	20.21	20.70
	8H	19.76	20.31	20.26	20.80	21.37	19.38	19.94	19.89	20.43	20.99