

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: P930296

Luminaire Tested: DFN2DS-HX4F0-060DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930296
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-HX4F0-060DS840-RLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

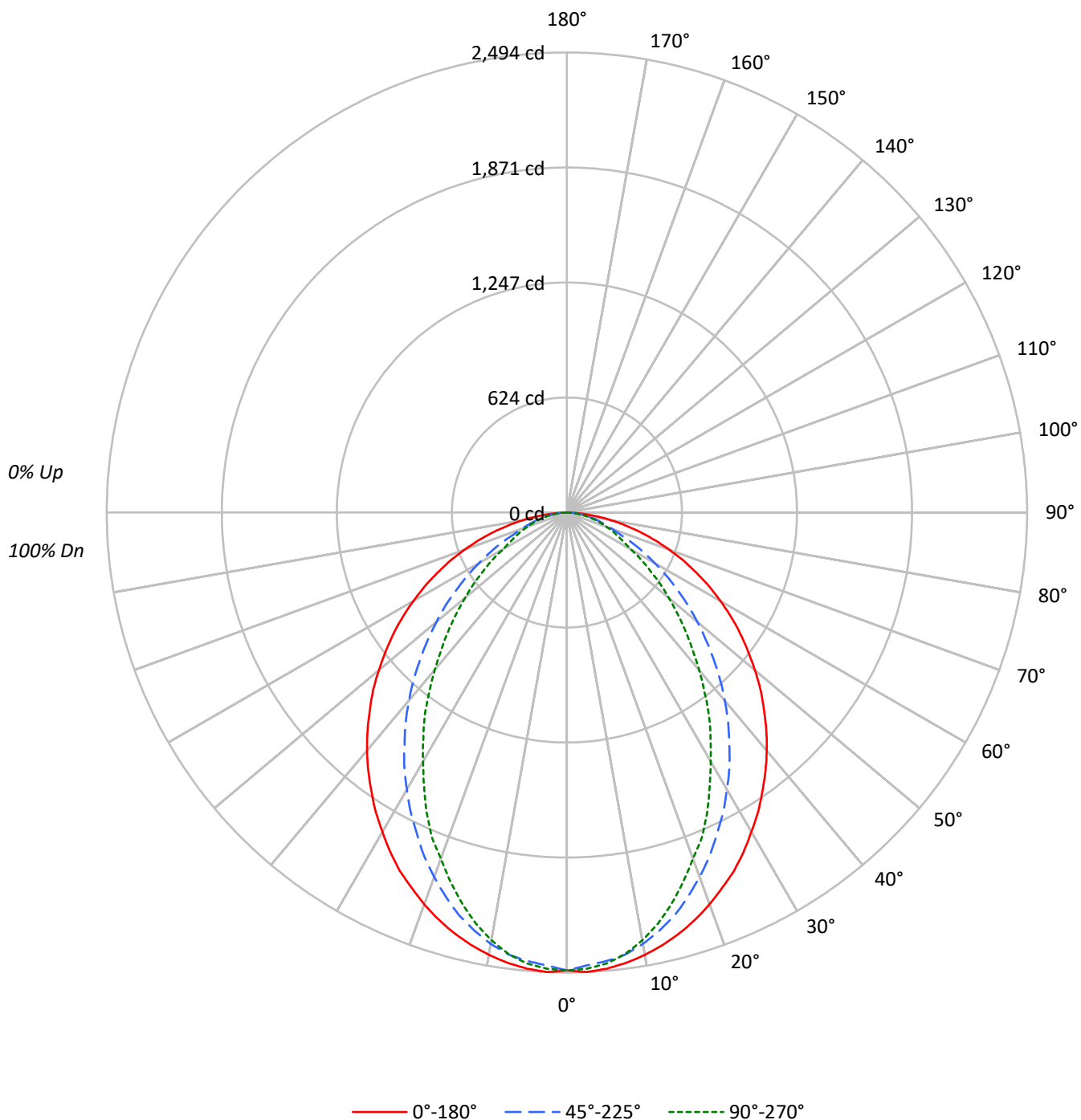
Lumens per Lamp: N/A
Luminaire Lumens: 5105.1 lumens
Efficiency: N/A
Efficacy: 86.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 59
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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			0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50	30	10	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92	90	88	86
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74	69	66	64
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66	62	57	55
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60	55	51	49
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55	50	45	43
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51	45	41	39
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47	41	37	35
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44	38	34	32
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1846	1846	1846
5°	1853	1822	1833
10°	1839	1793	1778
15°	1817	1740	1690
20°	1788	1664	1580
25°	1758	1578	1474
30°	1717	1489	1339
35°	1676	1393	1219
40°	1635	1293	1082
45°	1587	1181	957
50°	1538	1068	834
55°	1488	946	717
60°	1430	818	595
65°	1364	688	541
70°	1284	566	498
75°	1187	516	465
80°	1048	461	423
85°	823	363	363

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1587 cd/sqm

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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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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	13.36	14.89	13.73	15.20	15.51	9.32	10.85	9.69	11.16	11.47
	3H	15.13	16.49	15.51	16.82	17.18	10.59	11.96	10.97	12.28	12.64
	4H	15.80	17.08	16.20	17.42	17.80	11.09	12.37	11.49	12.72	13.10
	6H	16.28	17.47	16.70	17.83	18.23	11.47	12.66	11.88	13.02	13.41
	8H	16.45	17.58	16.88	17.97	18.37	11.60	12.72	12.02	13.11	13.51
	12H	16.55	17.63	16.98	18.01	18.44	11.68	12.76	12.11	13.14	13.57
4H	2H	13.47	14.75	13.87	15.10	15.48	10.02	11.30	10.42	11.65	12.03
	3H	15.40	16.46	15.81	16.86	17.26	11.46	12.53	11.87	12.93	13.33
	4H	16.15	17.11	16.58	17.52	17.96	12.06	13.02	12.50	13.44	13.87
	6H	16.74	17.57	17.20	18.02	18.48	12.55	13.38	13.01	13.83	14.29
	8H	16.96	17.73	17.42	18.18	18.65	12.71	13.49	13.18	13.93	14.40
	12H	17.11	17.80	17.59	18.28	18.75	12.83	13.52	13.31	14.00	14.47
8H	4H	16.17	16.95	16.64	17.40	17.86	12.42	13.19	12.88	13.64	14.11
	6H	16.81	17.45	17.31	17.95	18.42	13.00	13.65	13.50	14.14	14.61
	8H	17.06	17.64	17.58	18.15	18.64	13.22	13.80	13.74	14.31	14.80
	12H	17.27	17.78	17.78	18.27	18.83	13.40	13.91	13.91	14.41	14.97
12H	4H	16.16	16.85	16.64	17.33	17.80	12.46	13.15	12.94	13.63	14.10
	6H	16.79	17.37	17.31	17.88	18.37	13.07	13.64	13.58	14.15	14.64
	8H	17.08	17.59	17.59	18.08	18.64	13.34	13.85	13.85	14.34	14.91

END OF REPORT