

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: P930357

Luminaire Tested: DFN2DS-HX4F0-090DS935-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930357
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-HX4F0-090DS935-FLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

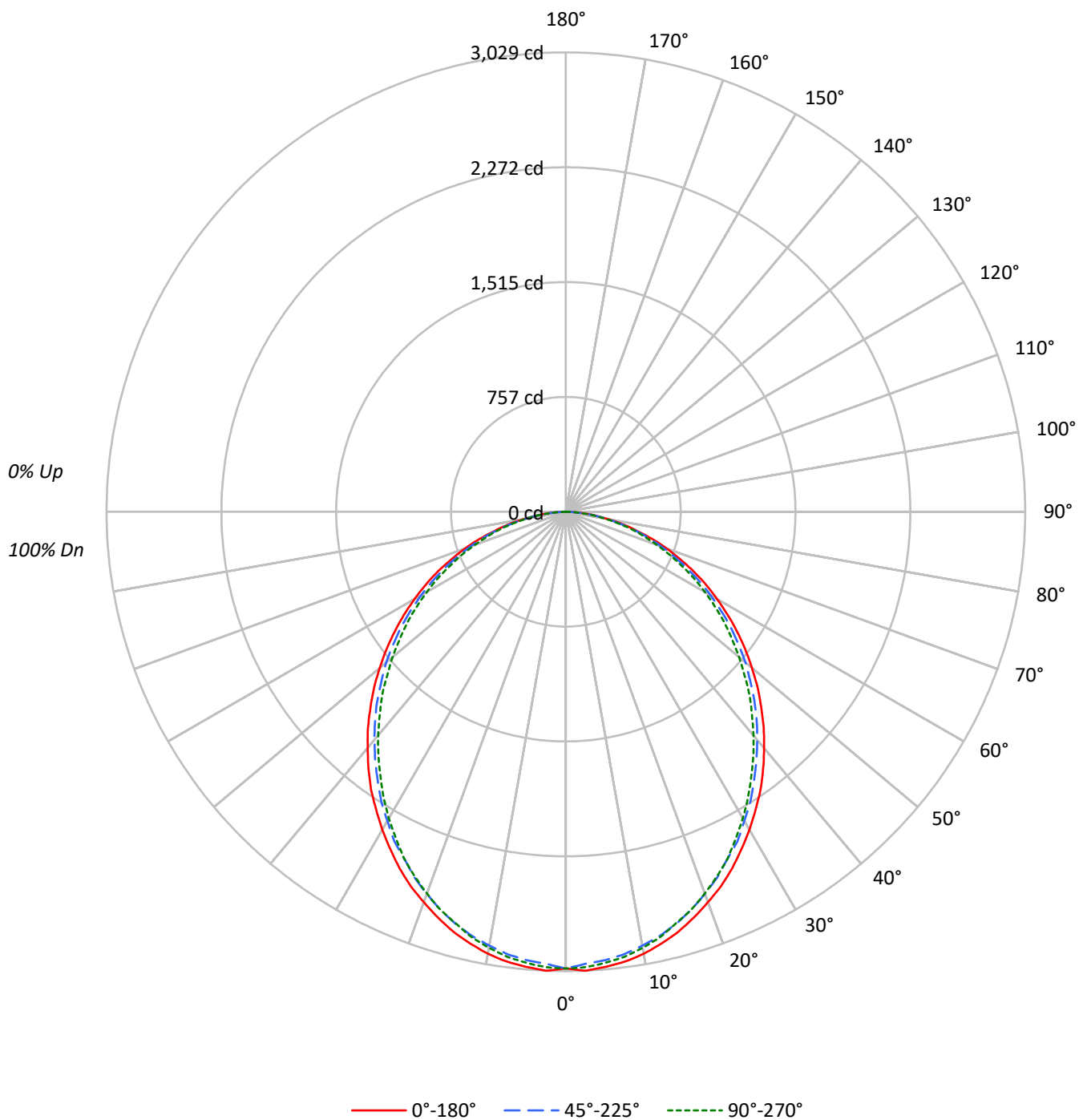
Lumens per Lamp: N/A
Luminaire Lumens: 7662.6 lumens
Efficiency: N/A
Efficacy: 82.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 93.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
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	109	104	100	96	106	102	98	95	98	95	92		94	91	89		90	88	86	84
2	99	91	85	79	97	89	83	78	86	81	76		83	78	74		80	76	73	71
3	91	80	72	66	88	79	71	65	76	69	64		73	68	63		71	66	62	60
4	83	71	63	56	81	70	62	56	68	61	55		65	59	54		63	58	54	51
5	77	64	55	49	75	63	55	48	61	53	48		59	52	47		57	51	47	45
6	71	58	49	43	69	57	48	42	55	48	42		53	47	42		52	46	41	39
7	66	52	44	38	64	52	43	38	50	43	37		49	42	37		47	41	37	35
8	61	48	40	34	60	47	39	34	46	39	33		45	38	33		44	38	33	31
9	57	44	36	30	56	43	36	30	42	35	30		41	35	30		40	34	30	28
10	54	41	33	28	53	40	33	28	39	32	27		38	32	27		37	32	27	26

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2239	2239	2239
5°	2248	2216	2229
10°	2235	2193	2204
15°	2207	2165	2163
20°	2168	2122	2120
25°	2129	2070	2070
30°	2079	2021	2004
35°	2032	1964	1935
40°	1973	1906	1869
45°	1916	1848	1803
50°	1852	1789	1725
55°	1787	1719	1656
60°	1714	1637	1576
65°	1636	1554	1483
70°	1536	1454	1386
75°	1397	1339	1307
80°	1240	1202	1141
85°	1012	965	865

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1916 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	283.5	3.7
10°-20°	797.5	10.4
20°-30°	1172.1	15.3
30°-40°	1361.3	17.8
40°-50°	1359.6	17.7
50°-60°	1185.5	15.5
60°-70°	876.4	11.4
70°-80°	495.8	6.5
80°-90°	130.9	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°	2253.1	29.4
0°-40°	3614.4	47.2
0°-60°	6159.5	80.4
0°-90°	7662.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7662.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3012	3012	3012	3012	3012	
5°	3012	3000	2968	2991	2986	286
15°	2867	2850	2812	2824	2809	807
25°	2595	2572	2523	2528	2523	1194
35°	2239	2210	2163	2146	2131	1398
45°	1822	1801	1758	1726	1714	1406
55°	1379	1361	1326	1292	1277	1233
65°	930	912	883	857	843	919
75°	486	481	466	449	455	519
85°	119	116	113	104	101	139
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3011.6	3011.6	3011.6	3011.6	3011.6
2.5°	3029.2	3014.7	2982.8	3011.6	3006.1
5°	3011.6	3000.3	2968.4	2991.4	2985.8
7.5°	2991.4	2974.2	2942.2	2965.6	2959.8
10°	2959.8	2939.5	2904.7	2927.8	2919.2
12.5°	2916.1	2898.9	2864.2	2878.6	2872.8
15°	2867.0	2849.8	2811.9	2823.6	2809.2
17.5°	2806.1	2788.9	2751.1	2765.6	2751.1
20°	2739.4	2722.2	2681.7	2690.3	2678.9
22.5°	2673.1	2647.0	2609.2	2609.2	2603.3
25°	2594.7	2571.7	2522.6	2528.1	2522.6
27.5°	2507.8	2487.5	2450.1	2441.5	2427.0
30°	2421.2	2397.8	2354.4	2345.8	2334.2
32.5°	2328.4	2311.2	2264.7	2247.3	2235.6
35°	2238.7	2209.8	2163.3	2145.9	2131.4
37.5°	2137.3	2111.1	2064.7	2044.5	2030.0
40°	2033.0	2009.7	1963.3	1937.5	1925.9
42.5°	1931.6	1908.3	1862.2	1833.1	1815.9
45°	1821.7	1801.4	1757.8	1726.1	1714.5
47.5°	1714.5	1694.2	1647.8	1615.9	1598.7
50°	1601.4	1587.0	1546.4	1505.9	1491.4
52.5°	1491.4	1471.1	1433.6	1401.7	1381.4
55°	1378.7	1361.1	1326.4	1291.7	1277.3
57.5°	1265.6	1251.1	1213.4	1178.6	1166.9
60°	1152.5	1141.1	1100.5	1068.6	1060.0
62.5°	1042.5	1022.2	993.3	964.5	952.8
65°	929.7	912.2	883.3	857.2	842.8
67.5°	813.9	799.2	773.3	753.1	741.4
70°	706.7	695.0	668.9	648.6	637.3
72.5°	596.7	585.0	570.5	550.3	541.7
75°	486.4	480.8	466.1	448.9	454.8
77.5°	388.0	376.4	370.6	362.0	353.4
80°	289.7	286.6	280.8	272.2	266.4
82.5°	196.9	196.9	194.2	182.5	182.5
85°	118.6	115.8	113.1	104.1	101.4
87.5°	52.2	46.4	40.6	32.0	28.9
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	14.08	15.69	14.45	16.01	16.32	13.64	15.25	14.00	15.56	15.88
	3H	15.83	17.29	16.21	17.61	17.98	15.34	16.80	15.72	17.12	17.48
	4H	16.48	17.85	16.88	18.20	18.57	15.99	17.35	16.38	17.70	18.08
	6H	16.95	18.22	17.36	18.58	18.97	16.45	17.72	16.86	18.08	18.47
	8H	17.09	18.30	17.52	18.69	19.09	16.59	17.80	17.01	18.19	18.59
	12H	17.18	18.34	17.61	18.72	19.15	16.67	17.83	17.10	18.21	18.64
4H	2H	14.64	16.01	15.04	16.36	16.74	14.29	15.66	14.69	16.01	16.38
	3H	16.62	17.77	17.03	18.16	18.56	16.21	17.36	16.62	17.76	18.16
	4H	17.40	18.43	17.83	18.85	19.28	16.97	18.01	17.40	18.42	18.86
	6H	17.99	18.90	18.45	19.34	19.79	17.56	18.46	18.01	18.91	19.36
	8H	18.18	19.03	18.64	19.47	19.94	17.74	18.59	18.20	19.03	19.50
	12H	18.31	19.07	18.79	19.55	20.02	17.86	18.62	18.34	19.10	19.57
8H	4H	17.67	18.52	18.13	18.96	19.42	17.29	18.14	17.76	18.58	19.05
	6H	18.38	19.09	18.88	19.57	20.05	18.00	18.70	18.50	19.19	19.67
	8H	18.64	19.27	19.15	19.78	20.27	18.25	18.88	18.76	19.39	19.87
	12H	18.84	19.40	19.35	19.89	20.45	18.43	18.99	18.94	19.48	20.04
12H	4H	17.69	18.45	18.18	18.93	19.40	17.33	18.09	17.81	18.57	19.04
	6H	18.43	19.06	18.94	19.57	20.05	18.06	18.69	18.57	19.20	19.68
	8H	18.74	19.30	19.25	19.79	20.35	18.36	18.92	18.87	19.41	19.97