

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: P930349

Luminaire Tested: DFN2DS-HX4F0-090DS840-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930349
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-HX4F0-090DS840-FLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

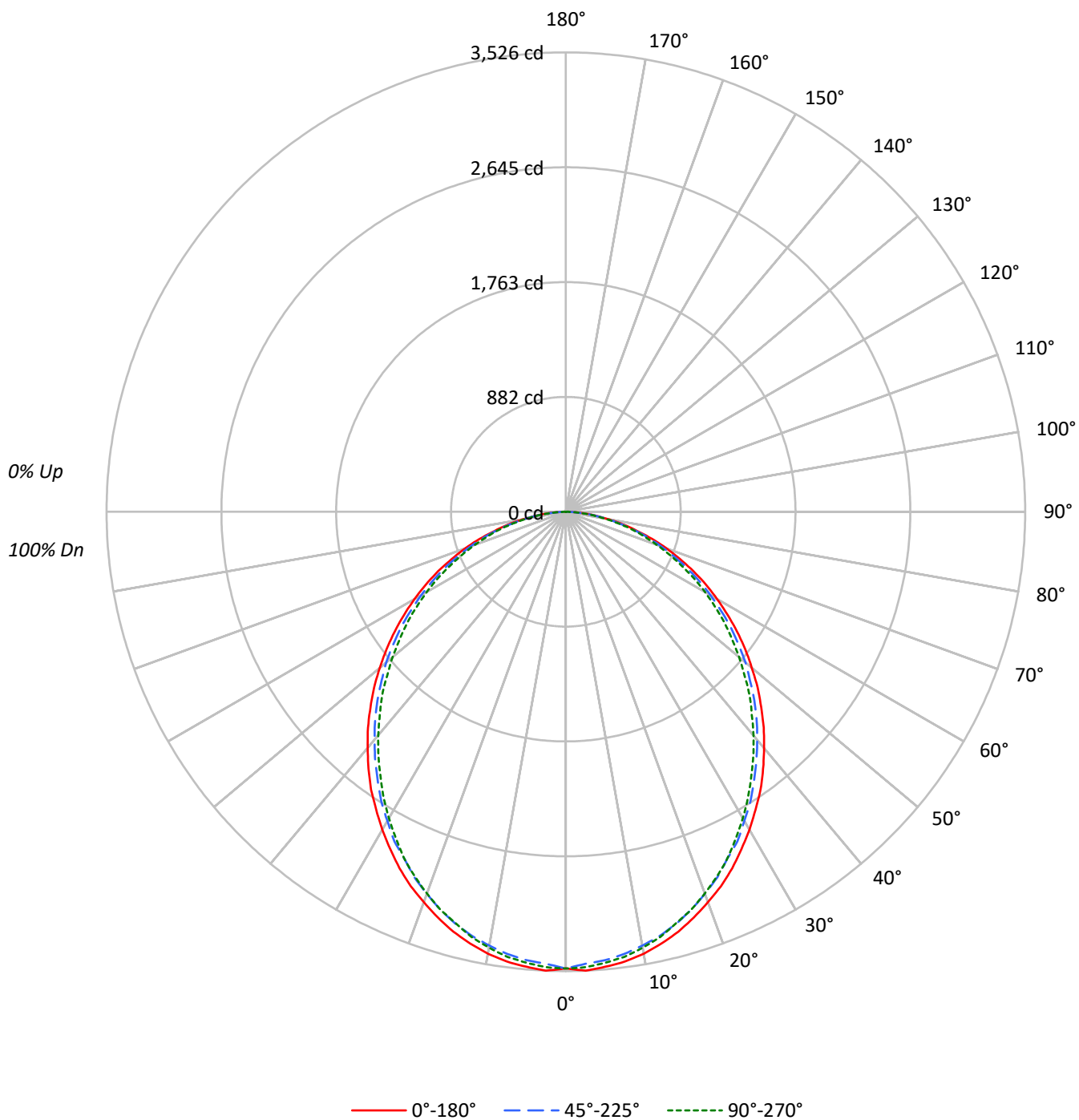
Lumens per Lamp: N/A
Luminaire Lumens: 8918.9 lumens
Efficiency: N/A
Efficacy: 95.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

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
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°	2606	2606	2606
5°	2616	2579	2594
10°	2601	2553	2565
15°	2569	2520	2517
20°	2523	2470	2467
25°	2478	2409	2409
30°	2420	2353	2333
35°	2365	2286	2252
40°	2297	2218	2176
45°	2230	2151	2098
50°	2156	2082	2008
55°	2080	2001	1927
60°	1995	1905	1835
65°	1904	1809	1726
70°	1788	1693	1612
75°	1627	1559	1521
80°	1444	1399	1328
85°	1177	1123	1007

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2230 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	329.9	3.7
10°-20°	928.3	10.4
20°-30°	1364.2	15.3
30°-40°	1584.5	17.8
40°-50°	1582.5	17.7
50°-60°	1379.9	15.5
60°-70°	1020.1	11.4
70°-80°	577.1	6.5
80°-90°	152.3	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°	2622.5	29.4
0°-40°	4207.0	47.2
0°-60°	7169.4	80.4
0°-90°	8918.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8918.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3505	3505	3505	3505	3505	
5°	3505	3492	3455	3482	3475	333
15°	3337	3317	3273	3287	3270	940
25°	3020	2993	2936	2942	2936	1390
35°	2606	2572	2518	2498	2481	1627
45°	2120	2097	2046	2009	1996	1636
55°	1605	1584	1544	1504	1487	1435
65°	1082	1062	1028	998	981	1070
75°	566	560	542	522	529	604
85°	138	135	132	121	118	162
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3505.4	3505.4	3505.4	3505.4	3505.4
2.5°	3525.8	3509.0	3471.9	3505.4	3499.0
5°	3505.4	3492.2	3455.1	3481.9	3475.4
7.5°	3481.9	3461.9	3424.6	3451.8	3445.0
10°	3445.0	3421.4	3381.0	3407.8	3397.8
12.5°	3394.2	3374.2	3333.8	3350.5	3343.8
15°	3337.0	3317.0	3273.0	3286.6	3269.8
17.5°	3266.2	3246.1	3202.2	3219.0	3202.2
20°	3188.6	3168.6	3121.3	3131.3	3118.1
22.5°	3111.3	3081.0	3036.9	3036.9	3030.1
25°	3020.1	2993.3	2936.1	2942.5	2936.1
27.5°	2918.9	2895.3	2851.7	2841.7	2824.9
30°	2818.1	2790.9	2740.4	2730.4	2716.9
32.5°	2710.1	2690.1	2636.0	2615.7	2602.1
35°	2605.7	2572.1	2518.0	2497.7	2480.9
37.5°	2487.7	2457.3	2403.2	2379.7	2362.9
40°	2366.4	2339.2	2285.2	2255.2	2241.6
42.5°	2248.3	2221.2	2167.6	2133.6	2113.6
45°	2120.3	2096.8	2045.9	2009.1	1995.6
47.5°	1995.6	1972.0	1917.9	1880.8	1860.8
50°	1864.0	1847.1	1799.9	1752.8	1735.9
52.5°	1735.9	1712.3	1668.7	1631.5	1607.9
55°	1604.7	1584.3	1543.8	1503.5	1486.7
57.5°	1473.1	1456.3	1412.3	1371.9	1358.3
60°	1341.4	1328.2	1281.0	1243.8	1233.8
62.5°	1213.4	1189.8	1156.2	1122.6	1109.0
65°	1082.2	1061.8	1028.1	997.8	981.0
67.5°	947.3	930.2	900.1	876.6	863.0
70°	822.5	808.9	778.6	755.0	741.7
72.5°	694.5	680.9	664.1	640.5	630.5
75°	566.2	559.7	542.5	522.5	529.3
77.5°	451.7	438.1	431.3	421.3	411.3
80°	337.2	333.6	326.8	316.8	310.1
82.5°	229.2	229.2	226.0	212.4	212.4
85°	138.0	134.8	131.6	121.2	118.0
87.5°	60.8	54.0	47.2	37.2	33.6
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	14.61	16.22	14.98	16.54	16.85	14.17	15.78	14.53	16.09	16.41
	3H	16.36	17.82	16.74	18.14	18.50	15.87	17.32	16.25	17.65	18.01
	4H	17.01	18.38	17.41	18.72	19.10	16.51	17.88	16.91	18.23	18.61
	6H	17.48	18.75	17.89	19.11	19.50	16.98	18.24	17.39	18.61	19.00
	8H	17.62	18.83	18.04	19.22	19.62	17.12	18.33	17.54	18.72	19.12
	12H	17.71	18.87	18.14	19.25	19.68	17.20	18.36	17.63	18.74	19.17
4H	2H	15.17	16.54	15.57	16.89	17.26	14.82	16.19	15.22	16.54	16.91
	3H	17.15	18.29	17.56	18.69	19.09	16.74	17.89	17.15	18.28	18.68
	4H	17.92	18.96	18.35	19.37	19.81	17.50	18.54	17.93	18.95	19.39
	6H	18.52	19.42	18.97	19.87	20.32	18.09	18.99	18.54	19.43	19.89
	8H	18.71	19.56	19.17	20.00	20.46	18.27	19.12	18.73	19.56	20.03
	12H	18.84	19.60	19.32	20.08	20.55	18.39	19.15	18.87	19.62	20.09
8H	4H	18.20	19.04	18.66	19.49	19.95	17.82	18.67	18.28	19.11	19.58
	6H	18.91	19.61	19.40	20.10	20.58	18.53	19.23	19.02	19.72	20.20
	8H	19.17	19.80	19.68	20.31	20.79	18.78	19.41	19.29	19.92	20.40
	12H	19.37	19.93	19.88	20.42	20.98	18.96	19.51	19.46	20.01	20.57
12H	4H	18.22	18.98	18.70	19.46	19.93	17.86	18.62	18.34	19.09	19.56
	6H	18.96	19.59	19.47	20.09	20.58	18.59	19.22	19.10	19.73	20.21
	8H	19.27	19.83	19.78	20.32	20.88	18.89	19.45	19.40	19.94	20.50