

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: P930345

Luminaire Tested: DFN2DS-HX4F0-090DS830-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930345
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-HX4F0-090DS830-FLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

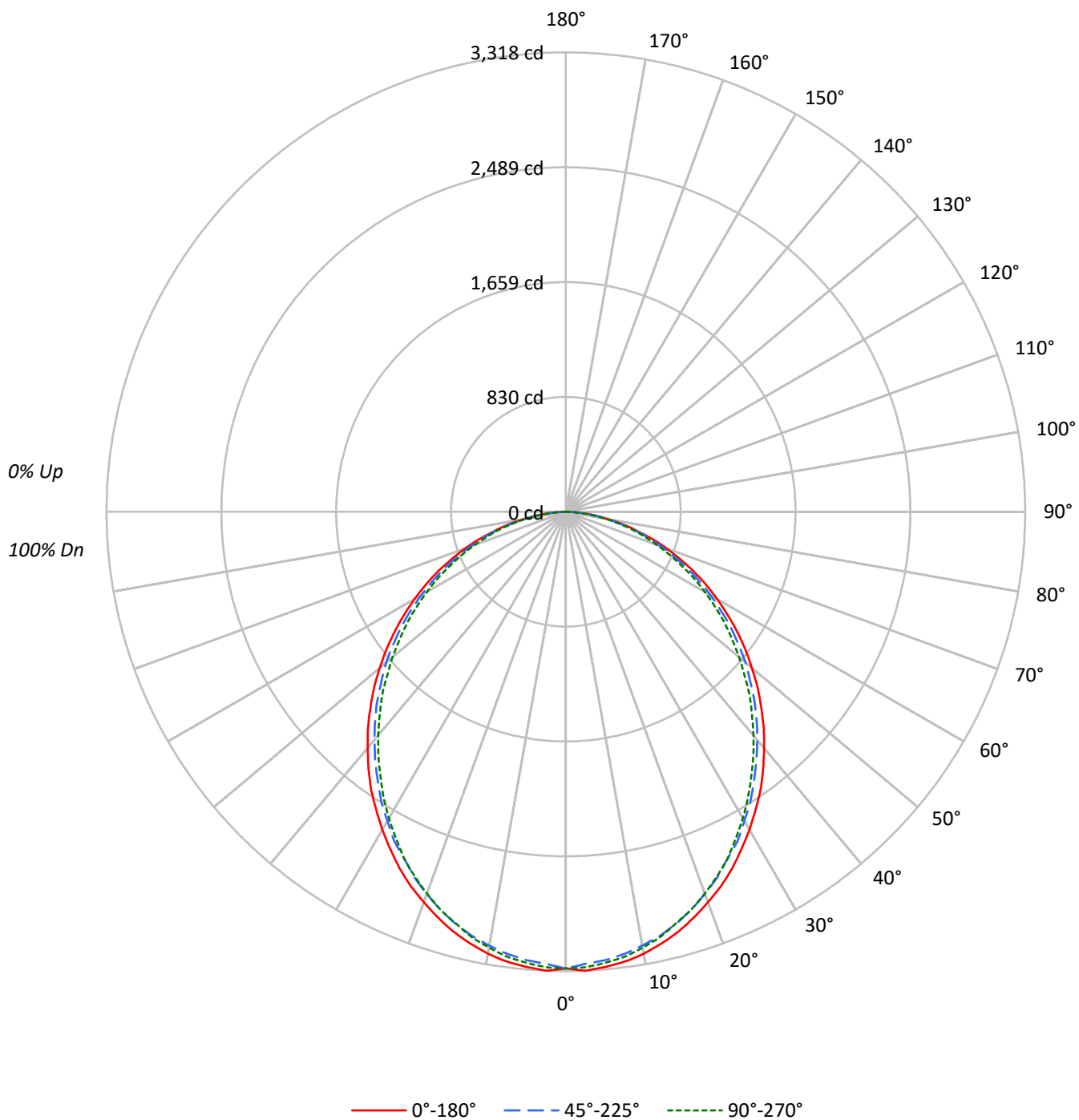
Lumens per Lamp: N/A
Luminaire Lumens: 8393.2 lumens
Efficiency: N/A
Efficacy: 89.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

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°	2453	2453	2453
5°	2462	2427	2441
10°	2448	2402	2414
15°	2417	2371	2369
20°	2374	2324	2322
25°	2332	2267	2267
30°	2277	2214	2195
35°	2226	2151	2119
40°	2162	2087	2048
45°	2098	2025	1975
50°	2029	1959	1890
55°	1958	1883	1814
60°	1877	1793	1727
65°	1792	1702	1624
70°	1683	1593	1517
75°	1531	1467	1431
80°	1359	1317	1249
85°	1108	1057	948

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2098 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	310.5	3.7
10°-20°	873.6	10.4
20°-30°	1283.8	15.3
30°-40°	1491.1	17.8
40°-50°	1489.3	17.7
50°-60°	1298.6	15.5
60°-70°	959.9	11.4
70°-80°	543.1	6.5
80°-90°	143.4	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°	2467.9	29.4
0°-40°	3959.0	47.2
0°-60°	6746.8	80.4
0°-90°	8393.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8393.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3299	3299	3299	3299	3299	
5°	3299	3286	3251	3277	3270	313
15°	3140	3122	3080	3093	3077	884
25°	2842	2817	2763	2769	2763	1308
35°	2452	2420	2370	2350	2335	1531
45°	1995	1973	1925	1891	1878	1540
55°	1510	1491	1453	1415	1399	1350
65°	1018	999	968	939	923	1007
75°	533	527	511	492	498	569
85°	130	127	124	114	111	153
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3298.8	3298.8	3298.8	3298.8	3298.8
2.5°	3318.0	3302.2	3267.2	3298.8	3292.8
5°	3298.8	3286.4	3251.4	3276.7	3270.5
7.5°	3276.7	3257.8	3222.8	3248.4	3242.0
10°	3242.0	3219.8	3181.7	3206.9	3197.5
12.5°	3194.1	3175.3	3137.3	3153.1	3146.8
15°	3140.3	3121.5	3080.1	3092.9	3077.0
17.5°	3073.7	3054.8	3013.5	3029.3	3013.5
20°	3000.6	2981.8	2937.3	2946.8	2934.3
22.5°	2927.9	2899.4	2857.9	2857.9	2851.5
25°	2842.1	2816.9	2763.1	2769.1	2763.1
27.5°	2746.9	2724.6	2683.7	2674.2	2658.4
30°	2652.0	2626.4	2578.9	2569.5	2556.8
32.5°	2550.4	2531.5	2480.7	2461.5	2448.7
35°	2452.1	2420.5	2369.6	2350.5	2334.7
37.5°	2341.1	2312.4	2261.6	2239.4	2223.6
40°	2226.9	2201.4	2150.5	2122.2	2109.5
42.5°	2115.8	2090.3	2039.8	2007.9	1989.0
45°	1995.3	1973.2	1925.4	1890.7	1878.0
47.5°	1878.0	1855.7	1804.9	1769.9	1751.1
50°	1754.1	1738.3	1693.8	1649.4	1633.6
52.5°	1633.6	1611.4	1570.3	1535.4	1513.1
55°	1510.1	1490.9	1452.8	1414.9	1399.1
57.5°	1386.2	1370.4	1329.1	1291.0	1278.2
60°	1262.4	1249.9	1205.5	1170.5	1161.1
62.5°	1141.9	1119.7	1088.0	1056.5	1043.6
65°	1018.4	999.2	967.5	939.0	923.2
67.5°	891.5	875.4	847.0	824.9	812.1
70°	774.0	761.2	732.7	710.5	698.0
72.5°	653.6	640.7	624.9	602.8	593.4
75°	532.8	526.7	510.6	491.7	498.1
77.5°	425.0	412.3	405.9	396.5	387.1
80°	317.4	314.0	307.6	298.1	291.8
82.5°	215.7	215.7	212.7	199.9	199.9
85°	129.9	126.9	123.9	114.1	111.1
87.5°	57.2	50.8	44.5	35.0	31.7
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	14.40	16.01	14.76	16.32	16.64	13.96	15.57	14.32	15.88	16.19
	3H	16.15	17.60	16.53	17.93	18.29	15.66	17.11	16.04	17.44	17.80
	4H	16.80	18.17	17.19	18.51	18.89	16.30	17.67	16.70	18.02	18.39
	6H	17.27	18.53	17.68	18.90	19.29	16.76	18.03	17.18	18.40	18.79
	8H	17.41	18.62	17.83	19.01	19.41	16.91	18.12	17.33	18.51	18.90
	12H	17.50	18.66	17.93	19.04	19.47	16.99	18.15	17.42	18.53	18.96
4H	2H	14.96	16.33	15.36	16.68	17.05	14.61	15.98	15.01	16.32	16.70
	3H	16.94	18.08	17.34	18.48	18.88	16.53	17.68	16.94	18.07	18.47
	4H	17.71	18.75	18.14	19.16	19.60	17.29	18.32	17.72	18.74	19.17
	6H	18.31	19.21	18.76	19.65	20.11	17.88	18.78	18.33	19.22	19.68
	8H	18.50	19.34	18.96	19.79	20.25	18.06	18.91	18.52	19.35	19.81
	12H	18.63	19.39	19.11	19.87	20.33	18.18	18.94	18.66	19.41	19.88
8H	4H	17.99	18.83	18.45	19.27	19.74	17.61	18.46	18.07	18.90	19.37
	6H	18.70	19.40	19.19	19.89	20.37	18.32	19.02	18.81	19.51	19.98
	8H	18.96	19.59	19.47	20.10	20.58	18.57	19.20	19.08	19.70	20.19
	12H	19.16	19.72	19.67	20.21	20.77	18.75	19.30	19.25	19.79	20.36
12H	4H	18.01	18.77	18.49	19.25	19.72	17.65	18.41	18.13	18.88	19.35
	6H	18.74	19.38	19.25	19.88	20.37	18.38	19.01	18.89	19.52	20.00
	8H	19.06	19.62	19.57	20.11	20.67	18.68	19.24	19.19	19.73	20.29