

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: P930386

Luminaire Tested: DFN2DS-HX4F0-110DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930386
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-HX4F0-110DS840-RLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

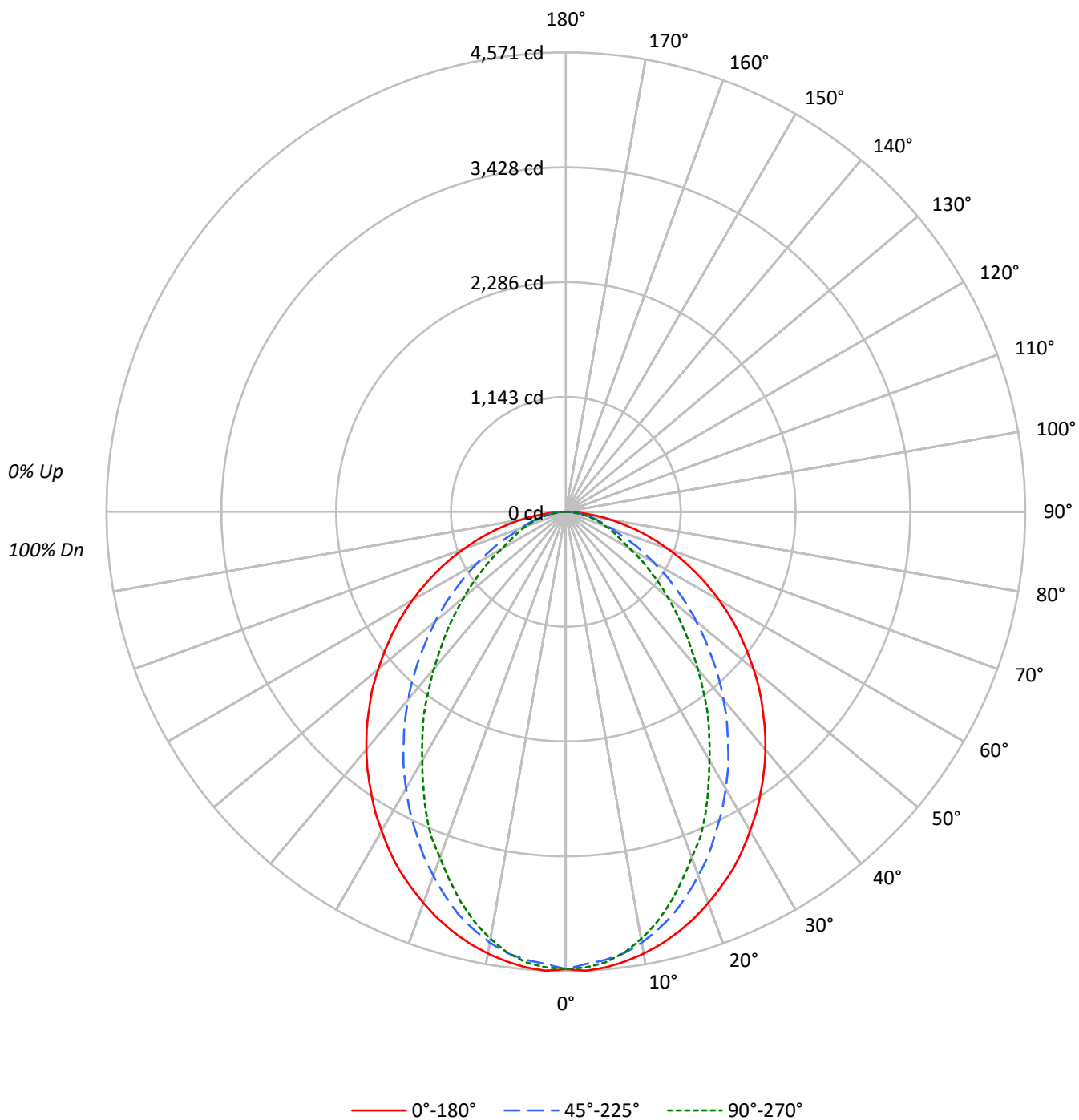
Lumens per Lamp: N/A
Luminaire Lumens: 9359.4 lumens
Efficiency: N/A
Efficacy: 79.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 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

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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	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3384	3384	3384
5°	3397	3341	3360
10°	3371	3287	3259
15°	3332	3189	3097
20°	3278	3050	2897
25°	3223	2892	2703
30°	3147	2730	2454
35°	3073	2554	2235
40°	2998	2370	1983
45°	2910	2166	1754
50°	2820	1958	1529
55°	2728	1735	1314
60°	2621	1500	1090
65°	2500	1261	992
70°	2355	1038	913
75°	2177	946	852
80°	1921	846	777
85°	1510	667	667

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2910 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	426.5	4.6
10°-20°	1170.9	12.5
20°-30°	1643.8	17.6
30°-40°	1791.9	19.1
40°-50°	1646.9	17.6
50°-60°	1293.4	13.8
60°-70°	841.9	9.0
70°-80°	433.4	4.6
80°-90°	110.6	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°	3241.2	34.6
0°-40°	5033.1	53.8
0°-60°	7973.4	85.2
0°-90°	9359.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9359.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4551	4551	4551	4551	4551	
5°	4551	4530	4477	4514	4502	432
15°	4328	4283	4143	4065	4024	1220
25°	3929	3797	3525	3357	3295	1807
35°	3386	3175	2813	2554	2463	2119
45°	2768	2492	2059	1767	1668	2137
55°	2104	1783	1338	1092	1013	1880
65°	1421	1087	717	577	564	1409
75°	758	469	329	301	297	801
85°	177	90	78	78	78	212
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4550.8	4550.8	4550.8	4550.8	4550.8
2.5°	4571.4	4550.8	4505.4	4546.9	4538.6
5°	4550.8	4530.3	4476.6	4513.7	4501.5
7.5°	4513.7	4489.2	4431.5	4447.7	4427.1
10°	4464.4	4435.4	4353.3	4340.6	4316.2
12.5°	4402.7	4365.6	4254.1	4229.6	4184.2
15°	4328.4	4283.0	4143.1	4065.0	4023.8
17.5°	4241.9	4176.0	4002.9	3912.4	3846.4
20°	4143.1	4060.6	3854.8	3752.0	3661.2
22.5°	4036.1	3941.2	3702.3	3562.5	3500.8
25°	3929.0	3797.1	3525.3	3356.7	3294.6
27.5°	3801.5	3661.2	3360.6	3167.0	3072.2
30°	3665.6	3508.7	3179.3	2969.5	2858.1
32.5°	3533.6	3343.9	3006.6	2759.4	2656.3
35°	3385.5	3175.3	2813.1	2553.6	2462.7
37.5°	3241.3	3014.5	2631.7	2347.2	2244.6
40°	3088.8	2841.9	2442.1	2149.7	2042.7
42.5°	2932.3	2668.9	2253.0	1947.9	1845.2
45°	2767.7	2491.5	2059.4	1766.6	1667.9
47.5°	2611.2	2318.9	1874.1	1581.3	1490.9
50°	2438.1	2145.8	1692.8	1408.3	1322.2
52.5°	2269.1	1960.2	1519.7	1247.9	1169.7
55°	2104.3	1783.2	1338.3	1091.5	1013.3
57.5°	1935.7	1606.2	1178.0	947.3	881.3
60°	1762.7	1433.2	1008.9	799.2	733.2
62.5°	1594.0	1264.6	864.8	667.3	634.4
65°	1420.9	1087.1	716.6	576.8	564.1
67.5°	1256.3	922.4	576.8	506.4	494.2
70°	1083.2	762.1	477.6	436.5	419.9
72.5°	918.4	613.5	399.4	366.6	358.3
75°	757.7	469.3	329.4	300.6	296.7
77.5°	597.3	333.4	259.6	242.9	234.6
80°	448.7	239.0	197.5	181.4	181.4
82.5°	312.8	160.8	135.9	127.6	127.6
85°	177.0	90.5	78.2	78.2	78.2
87.5°	66.0	32.7	32.7	28.8	28.8
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	15.47	16.99	15.83	17.31	17.62	11.43	12.95	11.80	13.27	13.58
	3H	17.24	18.60	17.61	18.93	19.29	12.70	14.06	13.07	14.39	14.75
	4H	17.90	19.18	18.30	19.53	19.91	13.20	14.48	13.60	14.83	15.21
	6H	18.39	19.57	18.80	19.94	20.33	13.58	14.76	13.99	15.13	15.52
	8H	18.56	19.68	18.98	20.07	20.47	13.70	14.83	14.13	15.22	15.62
	12H	18.66	19.74	19.09	20.12	20.55	13.78	14.86	14.21	15.24	15.67
4H	2H	15.57	16.85	15.97	17.20	17.58	12.13	13.41	12.53	13.76	14.13
	3H	17.51	18.57	17.92	18.97	19.37	13.57	14.63	13.98	15.03	15.43
	4H	18.26	19.21	18.69	19.63	20.07	14.17	15.12	14.60	15.54	15.98
	6H	18.85	19.68	19.31	20.12	20.58	14.66	15.49	15.11	15.93	16.39
	8H	19.06	19.84	19.53	20.28	20.75	14.82	15.60	15.28	16.04	16.51
	12H	19.22	19.91	19.70	20.39	20.86	14.94	15.63	15.42	16.11	16.58
8H	4H	18.28	19.06	18.74	19.50	19.97	14.52	15.30	14.99	15.74	16.21
	6H	18.92	19.56	19.42	20.05	20.53	15.11	15.75	15.61	16.24	16.72
	8H	19.17	19.75	19.68	20.25	20.74	15.33	15.91	15.84	16.42	16.90
	12H	19.37	19.88	19.88	20.37	20.94	15.51	16.02	16.02	16.51	17.08
12H	4H	18.27	18.96	18.75	19.44	19.91	14.57	15.26	15.05	15.74	16.21
	6H	18.90	19.48	19.41	19.99	20.47	15.17	15.75	15.69	16.26	16.75
	8H	19.18	19.69	19.69	20.19	20.75	15.45	15.96	15.96	16.45	17.01