

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: P930404

Luminaire Tested: DFN2DS-HX4F0-120DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930404
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-HX4F0-120DS840-RLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

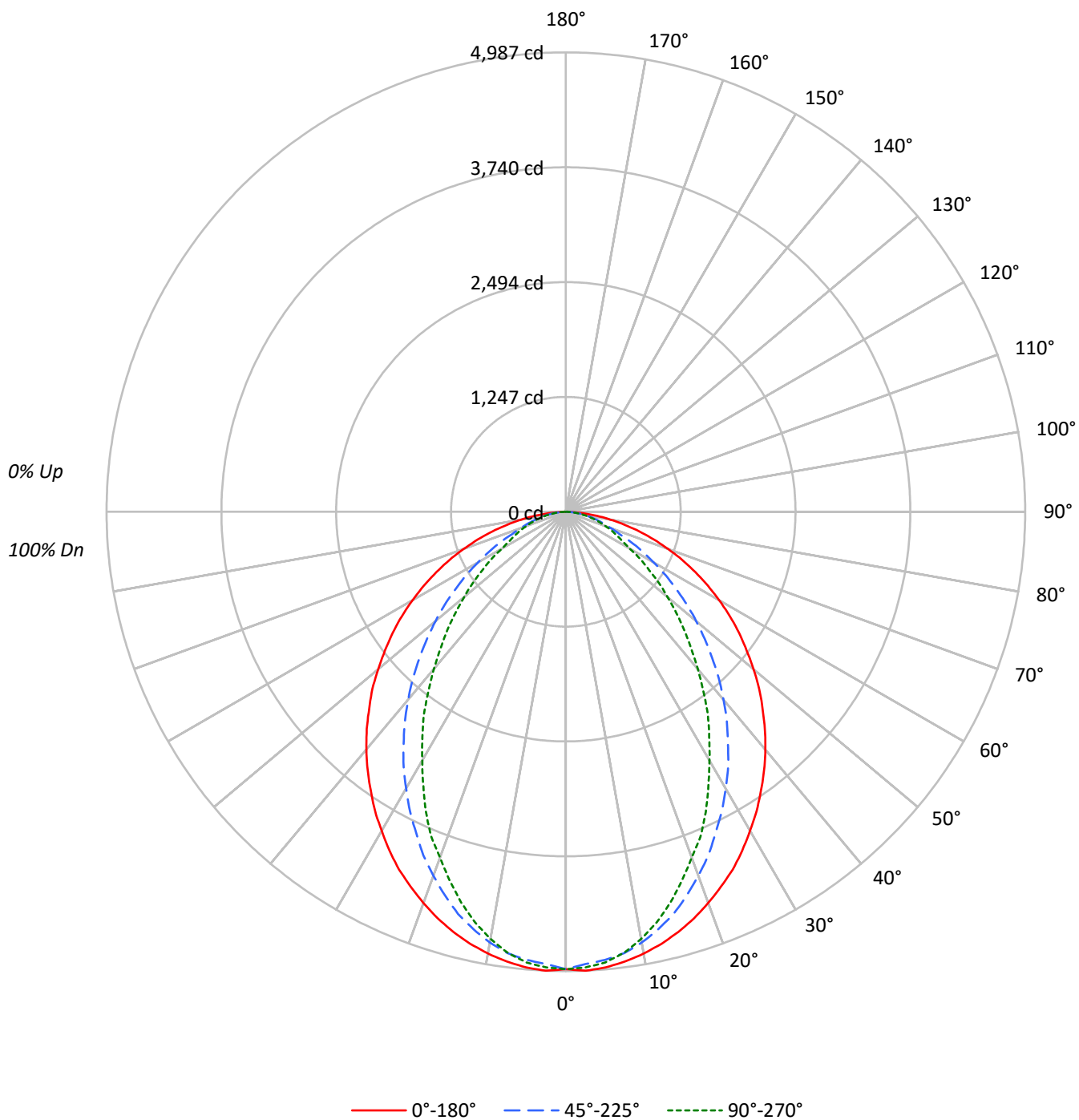
Lumens per Lamp: N/A
Luminaire Lumens: 10210.2 lumens
Efficiency: N/A
Efficacy: 77.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 131
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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°	3691	3691	3691
5°	3706	3645	3665
10°	3677	3586	3555
15°	3635	3479	3379
20°	3576	3328	3160
25°	3517	3155	2949
30°	3433	2978	2677
35°	3352	2786	2439
40°	3271	2586	2163
45°	3175	2362	1913
50°	3077	2136	1669
55°	2976	1893	1433
60°	2860	1637	1190
65°	2727	1376	1083
70°	2569	1133	996
75°	2374	1033	930
80°	2096	922	847
85°	1647	728	728

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3175 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	465.3	4.6
10°-20°	1277.3	12.5
20°-30°	1793.3	17.6
30°-40°	1954.8	19.1
40°-50°	1796.7	17.6
50°-60°	1411.0	13.8
60°-70°	918.4	9.0
70°-80°	472.8	4.6
80°-90°	120.7	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°	3535.9	34.6
0°-40°	5490.6	53.8
0°-60°	8698.3	85.2
0°-90°	10210.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10210.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4965	4965	4965	4965	4965	
5°	4965	4942	4884	4924	4911	471
15°	4722	4672	4520	4434	4390	1331
25°	4286	4142	3846	3662	3594	1971
35°	3693	3464	3069	2786	2686	2312
45°	3019	2718	2246	1927	1819	2332
55°	2296	1945	1460	1191	1105	2051
65°	1550	1186	782	629	615	1537
75°	826	512	360	328	324	874
85°	193	99	85	85	85	232
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4964.6	4964.6	4964.6	4964.6	4964.6
2.5°	4987.0	4964.6	4915.0	4960.3	4951.1
5°	4964.6	4942.1	4883.5	4924.0	4910.7
7.5°	4924.0	4897.3	4834.4	4852.0	4829.6
10°	4870.2	4838.7	4749.0	4735.2	4708.6
12.5°	4802.9	4762.5	4640.8	4614.2	4564.7
15°	4721.9	4672.4	4519.8	4434.4	4389.7
17.5°	4627.5	4555.6	4366.8	4268.2	4196.2
20°	4519.8	4429.7	4205.2	4093.2	3994.0
22.5°	4403.0	4299.6	4038.8	3886.3	3819.1
25°	4286.3	4142.2	3845.7	3661.8	3594.1
27.5°	4147.0	3994.0	3666.1	3455.0	3351.4
30°	3998.8	3827.7	3468.3	3239.4	3117.9
32.5°	3854.9	3647.9	3280.0	3010.2	2897.7
35°	3693.3	3464.0	3068.8	2785.7	2686.5
37.5°	3535.9	3288.6	2871.0	2560.7	2448.6
40°	3369.6	3100.3	2664.2	2345.2	2228.4
42.5°	3198.9	2911.5	2457.8	2125.0	2013.0
45°	3019.2	2718.0	2246.5	1927.2	1819.4
47.5°	2848.5	2529.7	2044.4	1725.1	1626.4
50°	2659.9	2340.9	1846.6	1536.3	1442.4
52.5°	2475.4	2138.3	1657.9	1361.4	1276.1
55°	2295.7	1945.3	1460.1	1190.7	1105.4
57.5°	2111.6	1752.3	1285.1	1033.4	961.5
60°	1922.9	1563.5	1100.6	871.9	799.9
62.5°	1738.9	1379.5	943.3	727.9	692.1
65°	1550.1	1186.0	781.8	629.2	615.4
67.5°	1370.5	1006.2	629.2	552.5	539.1
70°	1181.7	831.3	521.0	476.2	458.1
72.5°	1002.0	669.3	435.6	399.9	390.9
75°	826.5	511.9	359.5	327.9	323.6
77.5°	651.7	363.7	283.2	265.1	256.0
80°	489.6	260.8	215.4	197.8	197.8
82.5°	341.3	175.4	148.2	139.1	139.1
85°	193.1	98.7	85.3	85.3	85.3
87.5°	72.0	35.7	35.7	31.4	31.4
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	15.77	17.29	16.14	17.61	17.92	11.73	13.25	12.10	13.57	13.88
	3H	17.54	18.90	17.92	19.23	19.59	13.00	14.36	13.38	14.69	15.05
	4H	18.20	19.48	18.60	19.83	20.21	13.50	14.78	13.90	15.13	15.51
	6H	18.69	19.88	19.11	20.24	20.63	13.88	15.06	14.29	15.43	15.82
	8H	18.86	19.98	19.28	20.37	20.78	14.01	15.13	14.43	15.52	15.92
	12H	18.96	20.04	19.39	20.42	20.85	14.09	15.16	14.52	15.55	15.98
4H	2H	15.88	17.16	16.28	17.51	17.88	12.43	13.71	12.83	14.06	14.44
	3H	17.81	18.87	18.22	19.27	19.67	13.87	14.93	14.28	15.33	15.74
	4H	18.56	19.52	18.99	19.93	20.37	14.47	15.43	14.90	15.84	16.28
	6H	19.15	19.98	19.61	20.43	20.89	14.96	15.79	15.42	16.23	16.69
	8H	19.37	20.14	19.83	20.59	21.05	15.12	15.90	15.58	16.34	16.81
	12H	19.52	20.21	20.00	20.69	21.16	15.24	15.93	15.72	16.41	16.88
8H	4H	18.58	19.36	19.05	19.80	20.27	14.82	15.60	15.29	16.05	16.51
	6H	19.22	19.86	19.72	20.35	20.83	15.41	16.05	15.91	16.54	17.02
	8H	19.47	20.05	19.99	20.56	21.05	15.63	16.21	16.15	16.72	17.21
	12H	19.68	20.19	20.18	20.68	21.24	15.81	16.32	16.32	16.81	17.38
12H	4H	18.57	19.26	19.05	19.74	20.21	14.87	15.56	15.35	16.04	16.51
	6H	19.20	19.78	19.72	20.29	20.78	15.47	16.05	15.99	16.56	17.05
	8H	19.49	20.00	20.00	20.49	21.05	15.75	16.26	16.26	16.75	17.31