

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: P930400

Luminaire Tested: DFN2DS-HX4F0-120DS830-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930400
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-HX4F0-120DS830-RLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

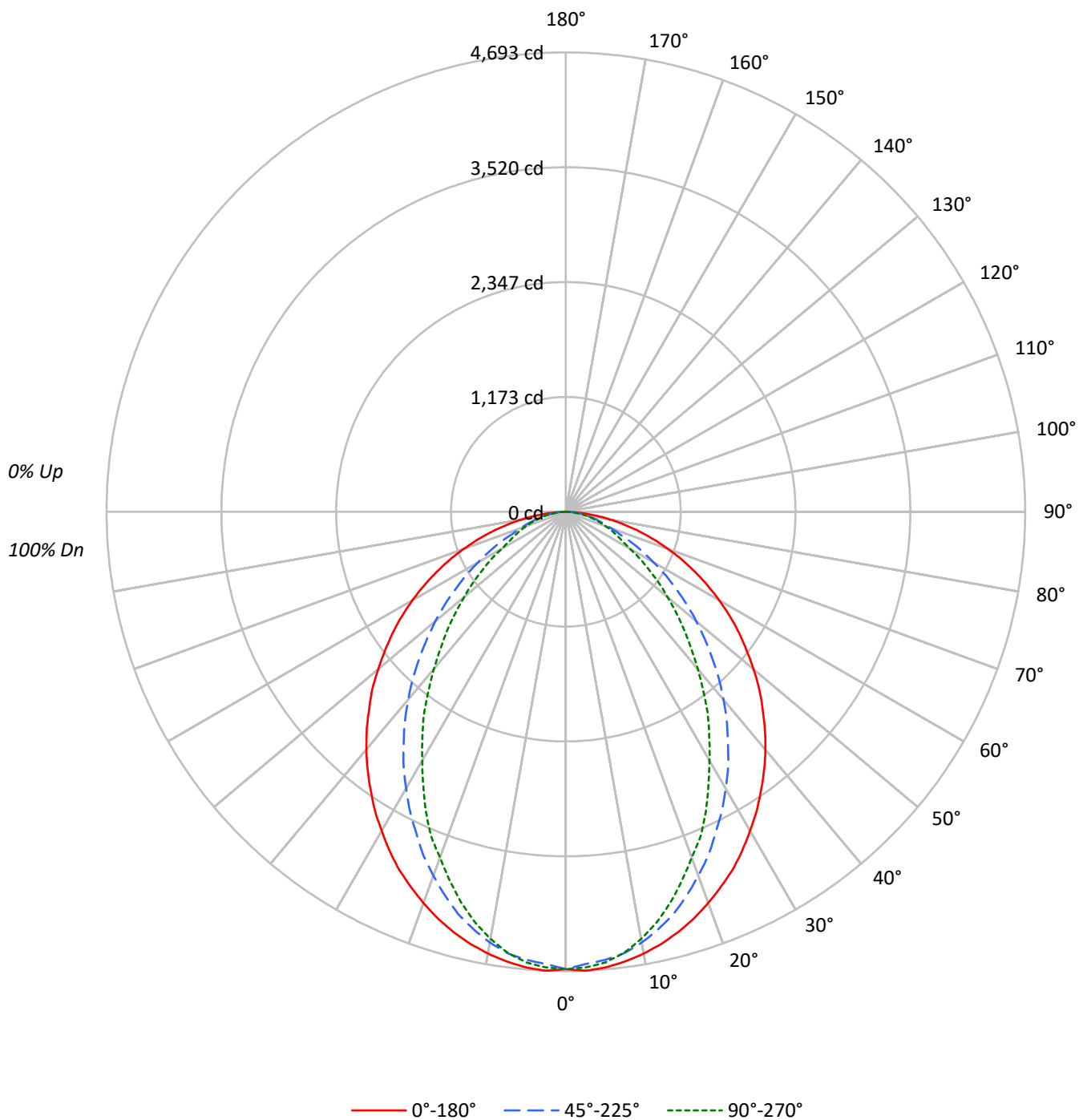
Lumens per Lamp: N/A
Luminaire Lumens: 9608.4 lumens
Efficiency: N/A
Efficacy: 73.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

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°	3474	3474	3474
5°	3487	3430	3449
10°	3460	3374	3346
15°	3421	3274	3180
20°	3366	3131	2974
25°	3309	2969	2775
30°	3231	2802	2519
35°	3155	2621	2295
40°	3078	2434	2036
45°	2988	2223	1800
50°	2896	2010	1570
55°	2801	1781	1349
60°	2691	1540	1120
65°	2567	1294	1019
70°	2418	1066	937
75°	2235	972	875
80°	1973	868	797
85°	1550	685	685

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2988 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	437.9	4.6
10°-20°	1202.0	12.5
20°-30°	1687.6	17.6
30°-40°	1839.6	19.1
40°-50°	1690.8	17.6
50°-60°	1327.8	13.8
60°-70°	864.3	9.0
70°-80°	444.9	4.6
80°-90°	113.6	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°	3327.4	34.6
0°-40°	5167.0	53.8
0°-60°	8185.6	85.2
0°-90°	9608.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9608.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4672	4672	4672	4672	4672	
5°	4672	4651	4596	4634	4621	443
15°	4444	4397	4253	4173	4131	1252
25°	4034	3898	3619	3446	3382	1855
35°	3476	3260	2888	2622	2528	2175
45°	2841	2558	2114	1814	1712	2194
55°	2160	1831	1374	1120	1040	1930
65°	1459	1116	736	592	579	1446
75°	778	482	338	309	304	823
85°	182	93	80	80	80	218
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4671.9	4671.9	4671.9	4671.9	4671.9
2.5°	4693.0	4671.9	4625.3	4667.9	4659.3
5°	4671.9	4650.8	4595.6	4633.8	4621.3
7.5°	4633.8	4608.6	4549.5	4566.1	4545.0
10°	4583.1	4553.5	4469.1	4456.1	4431.1
12.5°	4519.8	4481.8	4367.3	4342.2	4295.6
15°	4443.6	4397.0	4253.4	4173.1	4131.0
17.5°	4354.8	4287.0	4109.4	4016.6	3948.9
20°	4253.4	4168.6	3957.3	3851.9	3758.6
22.5°	4143.5	4046.2	3800.8	3657.2	3594.0
25°	4033.6	3898.1	3619.1	3445.9	3382.3
27.5°	3902.6	3758.6	3450.0	3251.3	3153.9
30°	3763.1	3602.1	3263.8	3048.5	2934.1
32.5°	3627.6	3432.9	3086.7	2832.8	2726.9
35°	3475.6	3259.8	2887.9	2621.5	2528.1
37.5°	3327.5	3094.8	2701.8	2409.7	2304.3
40°	3171.0	2917.6	2507.1	2207.0	2097.1
42.5°	3010.3	2739.9	2312.9	1999.8	1894.4
45°	2841.3	2557.8	2114.1	1813.6	1712.2
47.5°	2680.6	2380.6	1923.9	1623.4	1530.6
50°	2503.1	2203.0	1737.8	1445.8	1357.4
52.5°	2329.5	2012.3	1560.1	1281.1	1200.9
55°	2160.4	1830.7	1374.0	1120.5	1040.3
57.5°	1987.1	1649.0	1209.3	972.5	904.8
60°	1809.6	1471.3	1035.7	820.5	752.8
62.5°	1636.4	1298.2	887.7	685.0	651.3
65°	1458.8	1116.1	735.7	592.1	579.1
67.5°	1289.7	946.9	592.1	519.9	507.4
70°	1112.0	782.3	490.3	448.1	431.1
72.5°	942.9	629.8	410.0	376.3	367.9
75°	777.8	481.7	338.3	308.6	304.5
77.5°	613.2	342.2	266.5	249.4	240.9
80°	460.7	245.4	202.7	186.1	186.1
82.5°	321.2	165.0	139.5	130.9	130.9
85°	181.7	92.9	80.3	80.3	80.3
87.5°	67.7	33.6	33.6	29.6	29.6
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	15.56	17.08	15.93	17.40	17.71	11.52	13.04	11.89	13.36	13.67
	3H	17.33	18.69	17.70	19.02	19.38	12.79	14.15	13.16	14.48	14.84
	4H	17.99	19.27	18.39	19.62	20.00	13.29	14.57	13.69	14.92	15.30
	6H	18.48	19.66	18.89	20.03	20.42	13.67	14.85	14.08	15.22	15.61
	8H	18.65	19.77	19.07	20.16	20.56	13.79	14.92	14.22	15.31	15.71
	12H	18.75	19.83	19.18	20.21	20.64	13.87	14.95	14.31	15.34	15.76
4H	2H	15.67	16.95	16.06	17.29	17.67	12.22	13.50	12.62	13.85	14.23
	3H	17.60	18.66	18.01	19.06	19.46	13.66	14.72	14.07	15.12	15.52
	4H	18.35	19.30	18.78	19.72	20.16	14.26	15.22	14.69	15.63	16.07
	6H	18.94	19.77	19.40	20.21	20.67	14.75	15.58	15.21	16.02	16.48
	8H	19.15	19.93	19.62	20.38	20.84	14.91	15.69	15.37	16.13	16.60
	12H	19.31	20.00	19.79	20.48	20.95	15.03	15.72	15.51	16.20	16.67
8H	4H	18.37	19.15	18.84	19.59	20.06	14.61	15.39	15.08	15.84	16.30
	6H	19.01	19.65	19.51	20.14	20.62	15.20	15.84	15.70	16.33	16.81
	8H	19.26	19.84	19.77	20.35	20.83	15.42	16.00	15.93	16.51	17.00
	12H	19.46	19.97	19.97	20.47	21.03	15.60	16.11	16.11	16.60	17.17
12H	4H	18.36	19.05	18.84	19.53	20.00	14.66	15.35	15.14	15.83	16.30
	6H	18.99	19.57	19.50	20.08	20.57	15.26	15.84	15.78	16.35	16.84
	8H	19.27	19.78	19.78	20.28	20.84	15.54	16.05	16.05	16.54	17.10