

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: P930368

Luminaire Tested: DFN2DS-HX4F0-100DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930368
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-HX4F0-100DS840-RLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

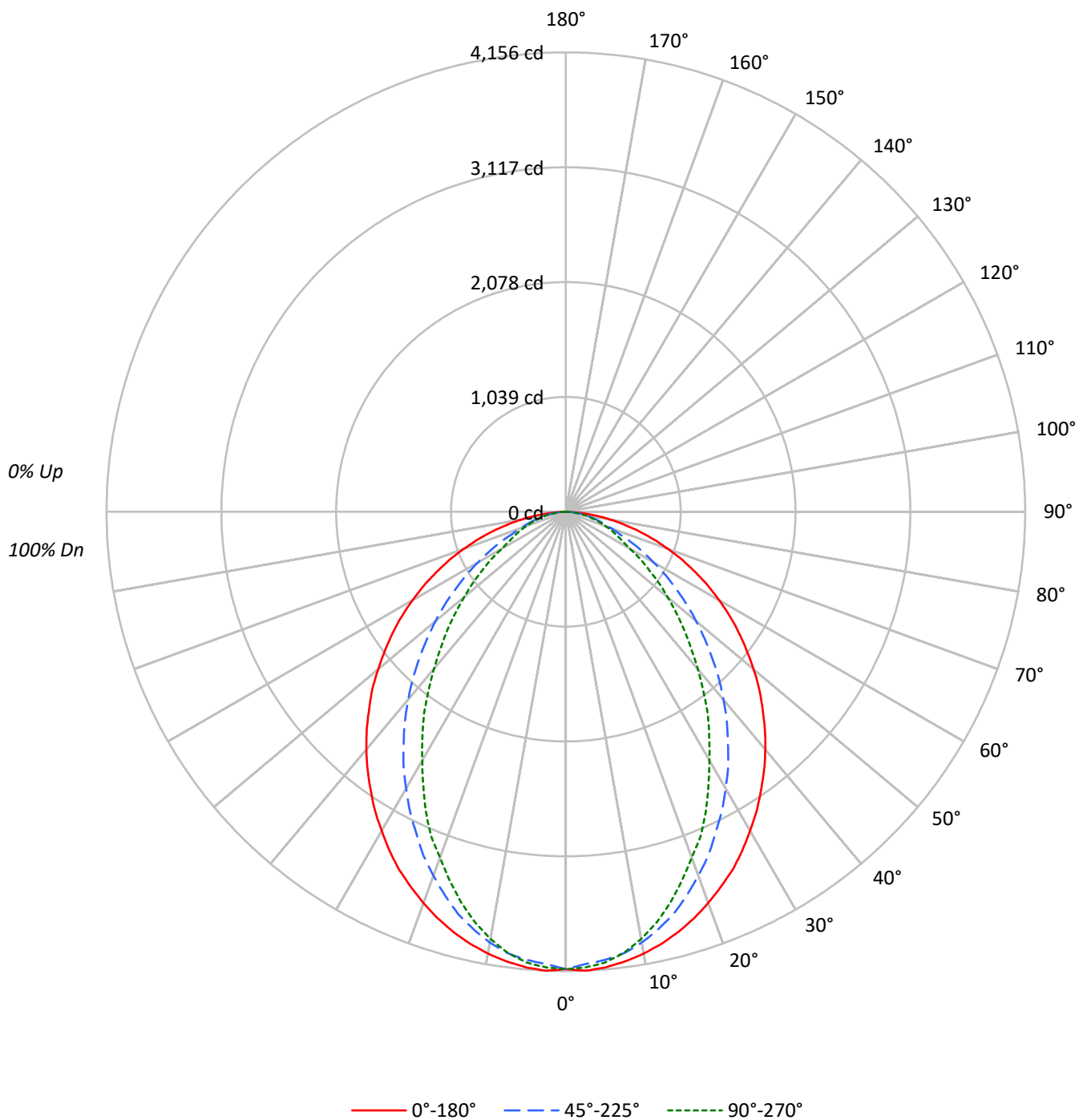
Lumens per Lamp: N/A
Luminaire Lumens: 8508.5 lumens
Efficiency: N/A
Efficacy: 81.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 104.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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°	3076	3076	3076
5°	3088	3038	3054
10°	3064	2988	2963
15°	3029	2899	2816
20°	2980	2773	2634
25°	2931	2629	2457
30°	2861	2482	2231
35°	2794	2321	2032
40°	2726	2155	1803
45°	2646	1969	1594
50°	2564	1780	1390
55°	2480	1577	1194
60°	2383	1364	991
65°	2273	1146	902
70°	2141	944	830
75°	1979	860	775
80°	1747	769	706
85°	1373	607	607

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2646 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	387.7	4.6
10°-20°	1064.4	12.5
20°-30°	1494.4	17.6
30°-40°	1629.0	19.1
40°-50°	1497.2	17.6
50°-60°	1175.8	13.8
60°-70°	765.3	9.0
70°-80°	394.0	4.6
80°-90°	100.6	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°	2946.5	34.6
0°-40°	4575.5	53.8
0°-60°	7248.6	85.2
0°-90°	8508.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8508.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4137	4137	4137	4137	4137	
5°	4137	4118	4070	4103	4092	392
15°	3935	3894	3766	3695	3658	1109
25°	3572	3452	3205	3051	2995	1643
35°	3078	2887	2557	2321	2239	1926
45°	2516	2265	1872	1606	1516	1943
55°	1913	1621	1217	992	921	1709
65°	1292	988	652	524	513	1281
75°	689	427	300	273	270	729
85°	161	82	71	71	71	193
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4137.1	4137.1	4137.1	4137.1	4137.1
2.5°	4155.8	4137.1	4095.8	4133.5	4126.0
5°	4137.1	4118.4	4069.6	4103.4	4092.2
7.5°	4103.4	4081.1	4028.6	4043.3	4024.7
10°	4058.5	4032.2	3957.6	3946.0	3923.8
12.5°	4002.5	3968.7	3867.4	3845.1	3803.8
15°	3934.9	3893.6	3766.5	3695.4	3658.1
17.5°	3856.3	3796.3	3639.0	3556.8	3496.8
20°	3766.5	3691.4	3504.3	3411.0	3328.3
22.5°	3669.2	3583.0	3365.7	3238.6	3182.6
25°	3571.9	3451.9	3204.8	3051.4	2995.1
27.5°	3455.9	3328.3	3055.1	2879.1	2792.9
30°	3332.3	3189.7	2890.2	2699.6	2598.3
32.5°	3212.4	3039.9	2733.3	2508.5	2414.7
35°	3077.7	2886.7	2557.4	2321.4	2238.7
37.5°	2946.6	2740.4	2392.5	2133.9	2040.5
40°	2808.0	2583.6	2220.1	1954.4	1857.1
42.5°	2665.8	2426.2	2048.1	1770.9	1677.5
45°	2516.0	2265.0	1872.2	1606.0	1516.2
47.5°	2373.9	2108.1	1703.7	1437.5	1355.4
50°	2216.5	1950.7	1538.8	1280.3	1202.0
52.5°	2062.8	1782.0	1381.6	1134.4	1063.4
55°	1913.0	1621.1	1216.7	992.3	921.1
57.5°	1759.8	1460.2	1071.0	861.2	801.2
60°	1602.4	1302.9	917.2	726.5	666.6
62.5°	1449.0	1149.5	786.1	606.6	576.8
65°	1291.8	988.3	651.5	524.3	512.8
67.5°	1142.0	838.5	524.3	460.4	449.2
70°	984.7	692.8	434.1	396.8	381.8
72.5°	834.9	557.7	363.1	333.2	325.7
75°	688.8	426.6	299.5	273.3	269.7
77.5°	543.0	303.1	235.9	220.8	213.3
80°	407.9	217.3	179.6	164.9	164.9
82.5°	284.4	146.1	123.5	116.0	116.0
85°	160.9	82.2	71.1	71.1	71.1
87.5°	60.0	29.8	29.8	26.2	26.2
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	15.14	16.66	15.50	16.97	17.29	11.10	12.62	11.46	12.93	13.25
	3H	16.90	18.27	17.28	18.60	18.96	12.36	13.73	12.74	14.06	14.42
	4H	17.57	18.85	17.97	19.20	19.58	12.87	14.15	13.27	14.50	14.87
	6H	18.06	19.24	18.47	19.61	20.00	13.25	14.43	13.66	14.80	15.19
	8H	18.22	19.35	18.65	19.74	20.14	13.37	14.50	13.80	14.89	15.29
	12H	18.33	19.41	18.76	19.79	20.22	13.45	14.53	13.88	14.91	15.34
4H	2H	15.24	16.52	15.64	16.87	17.25	11.80	13.08	12.19	13.42	13.80
	3H	17.18	18.24	17.59	18.64	19.04	13.24	14.30	13.65	14.70	15.10
	4H	17.93	18.88	18.36	19.30	19.74	13.84	14.79	14.27	15.21	15.65
	6H	18.52	19.35	18.97	19.79	20.25	14.33	15.16	14.78	15.60	16.06
	8H	18.73	19.51	19.20	19.95	20.42	14.49	15.27	14.95	15.71	16.18
	12H	18.89	19.58	19.37	20.06	20.53	14.60	15.30	15.09	15.78	16.25
8H	4H	17.95	18.73	18.41	19.17	19.64	14.19	14.97	14.65	15.41	15.88
	6H	18.59	19.23	19.08	19.72	20.20	14.78	15.42	15.27	15.91	16.39
	8H	18.84	19.41	19.35	19.92	20.41	15.00	15.58	15.51	16.09	16.57
	12H	19.04	19.55	19.55	20.04	20.61	15.18	15.69	15.69	16.18	16.74
12H	4H	17.93	18.63	18.42	19.11	19.58	14.23	14.93	14.72	15.41	15.88
	6H	18.57	19.15	19.08	19.66	20.14	14.84	15.42	15.35	15.93	16.42
	8H	18.85	19.36	19.36	19.85	20.42	15.11	15.62	15.62	16.12	16.68