

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: P930414

Luminaire Tested: DFN2DS-HX4F0-120DS940-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930414
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-HX4F0-120DS940-RLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

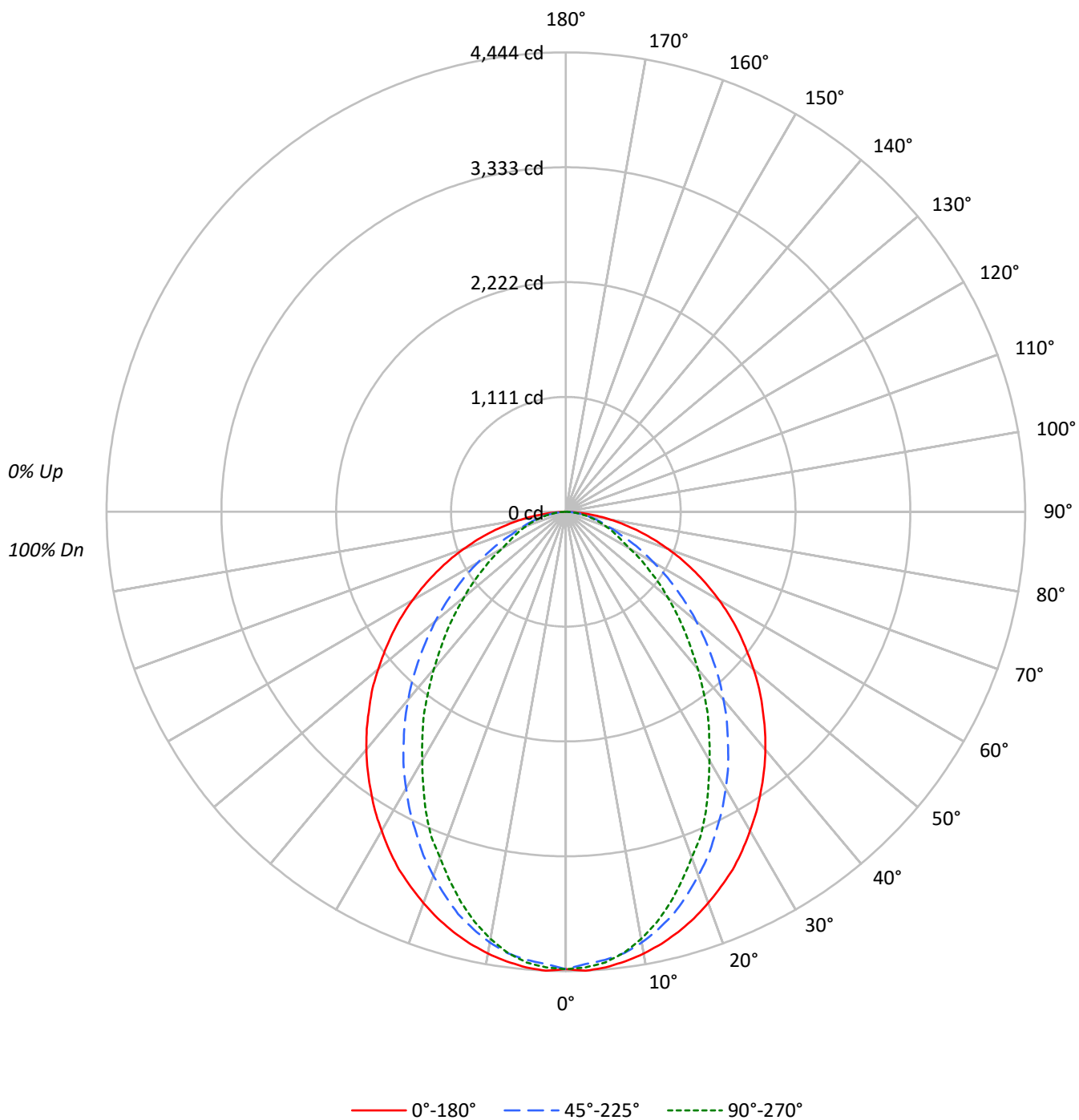
Lumens per Lamp: N/A
Luminaire Lumens: 9098.4 lumens
Efficiency: N/A
Efficacy: 69.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P930414

CATALOG NUMBER: DFN2DS-HX4F0-120DS940-RLL

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°	3290	3290	3290
5°	3302	3248	3266
10°	3277	3195	3168
15°	3239	3100	3011
20°	3187	2965	2816
25°	3134	2812	2628
30°	3060	2654	2386
35°	2987	2482	2173
40°	2915	2304	1928
45°	2829	2105	1705
50°	2742	1904	1487
55°	2652	1687	1277
60°	2548	1459	1060
65°	2430	1226	965
70°	2289	1009	887
75°	2116	920	829
80°	1868	822	755
85°	1468	648	648

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2829 cd/sqm

TEST NUMBER: P930414

CATALOG NUMBER: DFN2DS-HX4F0-120DS940-RLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	414.6	4.6
10°-20°	1138.2	12.5
20°-30°	1598.0	17.6
30°-40°	1741.9	19.1
40°-50°	1601.0	17.6
50°-60°	1257.3	13.8
60°-70°	818.4	9.0
70°-80°	421.3	4.6
80°-90°	107.5	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°	3150.8	34.6
0°-40°	4892.8	53.8
0°-60°	7751.1	85.2
0°-90°	9098.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9098.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4424	4424	4424	4424	4424	
5°	4424	4404	4352	4388	4376	419
15°	4208	4164	4028	3952	3912	1186
25°	3820	3691	3427	3263	3203	1757
35°	3291	3087	2735	2482	2394	2060
45°	2690	2422	2002	1717	1621	2078
55°	2046	1734	1301	1061	985	1828
65°	1381	1057	697	561	548	1369
75°	736	456	320	292	288	779
85°	172	88	76	76	76	206
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4424.0	4424.0	4424.0	4424.0	4424.0
2.5°	4443.9	4424.0	4379.8	4420.1	4412.0
5°	4424.0	4404.0	4351.7	4387.8	4376.0
7.5°	4387.8	4364.0	4308.0	4323.7	4303.7
10°	4339.8	4311.8	4231.9	4219.6	4195.9
12.5°	4279.9	4243.9	4135.5	4111.8	4067.6
15°	4207.7	4163.6	4027.6	3951.6	3911.7
17.5°	4123.6	4059.5	3891.3	3803.4	3739.3
20°	4027.6	3947.4	3747.3	3647.5	3559.1
22.5°	3923.6	3831.4	3599.0	3463.1	3403.2
25°	3819.5	3691.2	3427.0	3263.0	3202.7
27.5°	3695.5	3559.1	3266.9	3078.7	2986.5
30°	3563.4	3410.9	3090.6	2886.7	2778.4
32.5°	3435.1	3250.7	2922.8	2682.4	2582.2
35°	3291.1	3086.8	2734.6	2482.3	2393.9
37.5°	3150.9	2930.5	2558.3	2281.8	2182.0
40°	3002.7	2762.7	2374.1	2089.9	1985.8
42.5°	2850.6	2594.5	2190.1	1893.6	1793.8
45°	2690.5	2422.0	2001.9	1717.4	1621.3
47.5°	2538.4	2254.3	1821.8	1537.3	1449.3
50°	2370.2	2086.0	1645.6	1369.0	1285.4
52.5°	2205.8	1905.5	1477.3	1213.1	1137.1
55°	2045.7	1733.5	1301.1	1061.0	985.0
57.5°	1881.7	1561.4	1145.1	920.9	856.8
60°	1713.5	1393.2	980.8	776.9	712.8
62.5°	1549.6	1229.3	840.6	648.7	616.7
65°	1381.4	1056.8	696.7	560.7	548.4
67.5°	1221.2	896.6	560.7	492.3	480.4
70°	1053.0	740.8	464.3	424.3	408.2
72.5°	892.9	596.4	388.2	356.4	348.3
75°	736.5	456.2	320.3	292.2	288.4
77.5°	580.7	324.1	252.3	236.2	228.1
80°	436.3	232.4	192.0	176.3	176.3
82.5°	304.2	156.3	132.1	124.0	124.0
85°	172.1	88.0	76.0	76.0	76.0
87.5°	64.1	31.8	31.8	28.0	28.0
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	15.37	16.89	15.74	17.21	17.52	11.33	12.85	11.70	13.17	13.48
	3H	17.14	18.50	17.51	18.83	19.19	12.60	13.96	12.98	14.29	14.65
	4H	17.80	19.08	18.20	19.43	19.81	13.10	14.38	13.50	14.73	15.11
	6H	18.29	19.48	18.70	19.84	20.23	13.48	14.66	13.89	15.03	15.42
	8H	18.46	19.58	18.88	19.97	20.37	13.60	14.73	14.03	15.12	15.52
	12H	18.56	19.64	18.99	20.02	20.45	13.69	14.76	14.12	15.15	15.58
4H	2H	15.48	16.76	15.88	17.10	17.48	12.03	13.31	12.43	13.66	14.04
	3H	17.41	18.47	17.82	18.87	19.27	13.47	14.53	13.88	14.93	15.33
	4H	18.16	19.11	18.59	19.53	19.97	14.07	15.03	14.50	15.44	15.88
	6H	18.75	19.58	19.21	20.02	20.48	14.56	15.39	15.02	15.83	16.29
	8H	18.96	19.74	19.43	20.19	20.65	14.72	15.50	15.18	15.94	16.41
	12H	19.12	19.81	19.60	20.29	20.76	14.84	15.53	15.32	16.01	16.48
8H	4H	18.18	18.96	18.65	19.40	19.87	14.42	15.20	14.89	15.65	16.11
	6H	18.82	19.46	19.32	19.95	20.43	15.01	15.65	15.51	16.14	16.62
	8H	19.07	19.65	19.58	20.16	20.65	15.23	15.81	15.75	16.32	16.81
	12H	19.27	19.78	19.78	20.28	20.84	15.41	15.92	15.92	16.41	16.98
12H	4H	18.17	18.86	18.65	19.34	19.81	14.47	15.16	14.95	15.64	16.11
	6H	18.80	19.38	19.31	19.89	20.38	15.07	15.65	15.59	16.16	16.65
	8H	19.09	19.60	19.60	20.09	20.65	15.35	15.86	15.86	16.35	16.91