

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: P930361

Luminaire Tested: DFN2DS-HX4F0-090DS950-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930361
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-HX4F0-090DS950-FLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

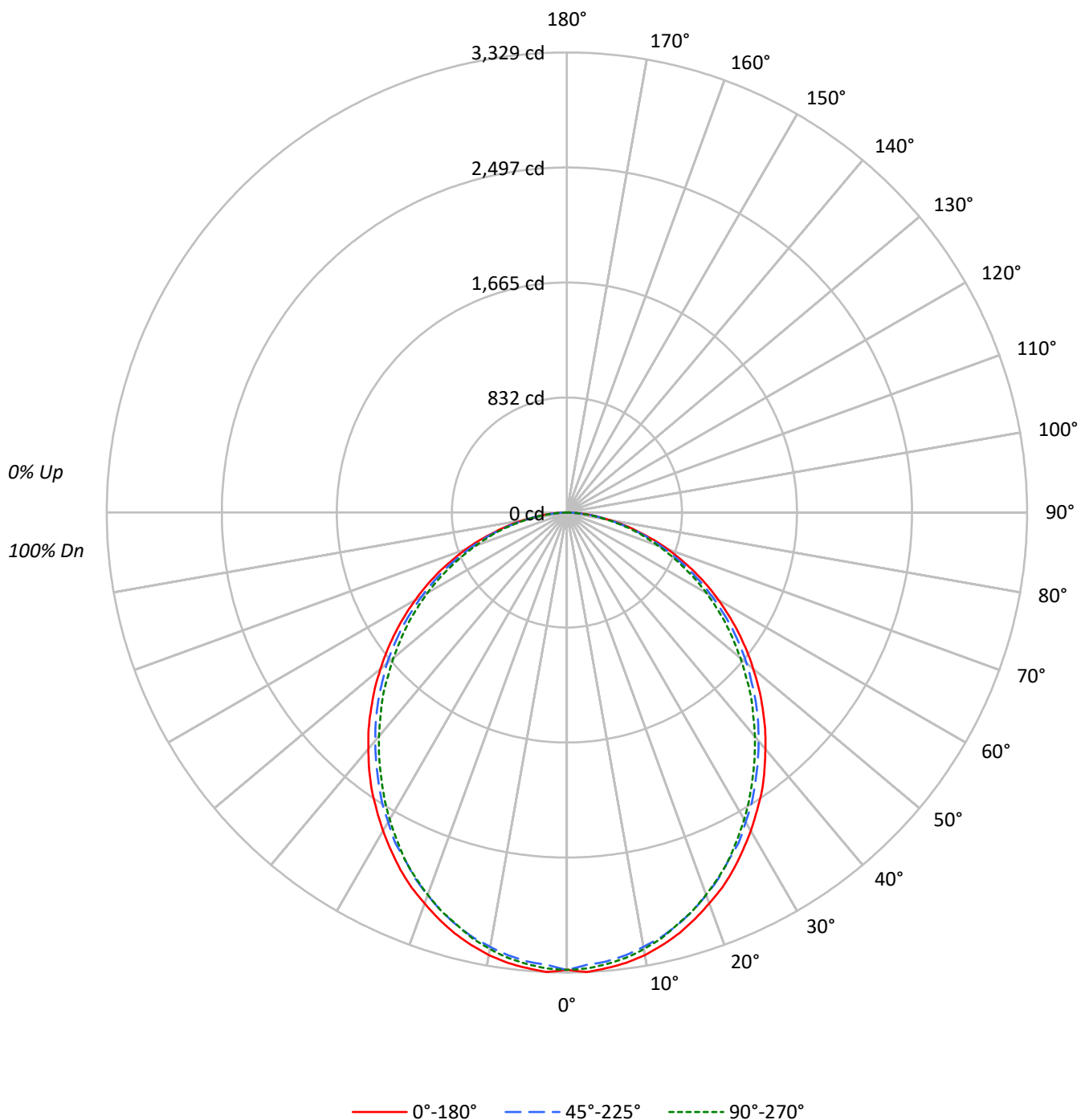
Lumens per Lamp: N/A
Luminaire Lumens: 8420.0 lumens
Efficiency: N/A
Efficacy: 90.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 93.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P930361

CATALOG NUMBER: DFN2DS-HX4F0-090DS950-FLL

Luminous Intensity Polar Plot



TEST NUMBER: P930361

CATALOG NUMBER: DFN2DS-HX4F0-090DS950-FLL

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	109	104	100	96	106	102	98	95	98	95	92		94	91	89		90
2	99	91	85	79	97	89	83	78	86	81	76		83	78	74		80
3	91	80	72	66	88	79	71	65	76	69	64		73	68	63		71
4	83	71	63	56	81	70	62	56	68	61	55		65	59	54		63
5	77	64	55	49	75	63	55	48	61	53	48		59	52	47		57
6	71	58	49	43	69	57	48	42	55	48	42		53	47	42		52
7	66	52	44	38	64	52	43	38	50	43	37		49	42	37		47
8	61	48	40	34	60	47	39	34	46	39	33		45	38	33		44
9	57	44	36	30	56	43	36	30	42	35	30		41	35	30		40
10	54	41	33	28	53	40	33	28	39	32	27		38	32	27		37

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2461	2461	2461
5°	2470	2435	2449
10°	2456	2410	2422
15°	2425	2379	2376
20°	2382	2332	2329
25°	2339	2274	2274
30°	2284	2221	2202
35°	2233	2158	2126
40°	2168	2094	2054
45°	2105	2031	1981
50°	2036	1966	1896
55°	1964	1889	1819
60°	1883	1798	1732
65°	1797	1708	1629
70°	1688	1598	1522
75°	1536	1472	1436
80°	1363	1321	1254
85°	1112	1060	950

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2105 cd/sqm

TEST NUMBER: P930361

CATALOG NUMBER: DFN2DS-HX4F0-090DS950-FLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	311.5	3.7
10°-20°	876.4	10.4
20°-30°	1287.9	15.3
30°-40°	1495.9	17.8
40°-50°	1494.0	17.7
50°-60°	1302.7	15.5
60°-70°	963.0	11.4
70°-80°	544.8	6.5
80°-90°	143.8	1.7
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°	2475.8	29.4
0°-40°	3971.6	47.2
0°-60°	6768.3	80.4
0°-90°	8420.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8420.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3309	3309	3309	3309	3309	
5°	3309	3297	3262	3287	3281	314
15°	3150	3131	3090	3103	3087	887
25°	2851	2826	2772	2778	2772	1312
35°	2460	2428	2377	2358	2342	1536
45°	2002	1980	1932	1897	1884	1545
55°	1515	1496	1458	1419	1404	1354
65°	1022	1002	971	942	926	1010
75°	534	528	512	493	500	571
85°	130	127	124	114	111	153
90°	0	0	0	0	0	

TEST NUMBER: P930361

CATALOG NUMBER: DFN2DS-HX4F0-090DS950-FLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3309.3	3309.3	3309.3	3309.3	3309.3
2.5°	3328.6	3312.7	3277.6	3309.3	3303.2
5°	3309.3	3296.8	3261.8	3287.1	3280.9
7.5°	3287.1	3268.2	3233.0	3258.7	3252.3
10°	3252.3	3230.0	3191.8	3217.2	3207.7
12.5°	3204.3	3185.4	3147.3	3163.1	3156.8
15°	3150.3	3131.4	3089.9	3102.7	3086.8
17.5°	3083.4	3064.5	3023.1	3038.9	3023.1
20°	3010.2	2991.3	2946.7	2956.1	2943.7
22.5°	2937.2	2908.6	2867.0	2867.0	2860.6
25°	2851.2	2825.8	2771.9	2777.9	2771.9
27.5°	2755.6	2733.3	2692.2	2682.8	2666.9
30°	2660.5	2634.8	2587.1	2577.7	2564.9
32.5°	2558.5	2539.6	2488.6	2469.4	2456.5
35°	2459.9	2428.2	2377.1	2358.0	2342.1
37.5°	2348.5	2319.8	2268.8	2246.5	2230.7
40°	2234.0	2208.4	2157.3	2129.0	2116.2
42.5°	2122.6	2097.0	2046.3	2014.3	1995.4
45°	2001.7	1979.5	1931.5	1896.7	1884.0
47.5°	1884.0	1861.6	1810.6	1775.6	1756.7
50°	1759.7	1743.8	1699.2	1654.7	1638.8
52.5°	1638.8	1616.5	1575.3	1540.3	1518.0
55°	1514.9	1495.7	1457.5	1419.4	1403.5
57.5°	1390.7	1374.8	1333.3	1295.1	1282.3
60°	1266.4	1253.9	1209.3	1174.3	1164.8
62.5°	1145.5	1123.2	1091.5	1059.8	1047.0
65°	1021.6	1002.4	970.6	942.0	926.1
67.5°	894.3	878.2	849.7	827.5	814.7
70°	776.5	763.7	735.0	712.7	700.2
72.5°	655.6	642.8	626.9	604.7	595.3
75°	534.5	528.3	512.2	493.3	499.7
77.5°	426.4	413.6	407.2	397.8	388.3
80°	318.4	315.0	308.5	299.1	292.8
82.5°	216.4	216.4	213.4	200.5	200.5
85°	130.3	127.3	124.3	114.4	111.4
87.5°	57.4	50.9	44.6	35.2	31.8
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P930361

CATALOG NUMBER: DFN2DS-HX4F0-090DS950-FLL

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	14.41	16.02	14.78	16.34	16.65	13.97	15.58	14.33	15.89	16.21
	3H	16.16	17.62	16.54	17.94	18.30	15.67	17.12	16.05	17.45	17.81
	4H	16.81	18.18	17.21	18.52	18.90	16.31	17.68	16.71	18.03	18.41
	6H	17.28	18.55	17.69	18.91	19.30	16.78	18.04	17.19	18.41	18.80
	8H	17.42	18.63	17.84	19.02	19.42	16.92	18.13	17.34	18.52	18.92
	12H	17.51	18.67	17.94	19.05	19.48	17.00	18.16	17.43	18.54	18.97
4H	2H	14.97	16.34	15.37	16.69	17.06	14.62	15.99	15.02	16.34	16.71
	3H	16.95	18.09	17.36	18.49	18.89	16.54	17.69	16.95	18.08	18.48
	4H	17.72	18.76	18.15	19.17	19.61	17.30	18.34	17.73	18.75	19.19
	6H	18.32	19.22	18.77	19.67	20.12	17.89	18.79	18.34	19.23	19.69
	8H	18.51	19.36	18.97	19.80	20.26	18.07	18.92	18.53	19.36	19.83
	12H	18.64	19.40	19.12	19.88	20.35	18.19	18.95	18.67	19.42	19.89
8H	4H	18.00	18.84	18.46	19.29	19.75	17.62	18.47	18.08	18.91	19.38
	6H	18.71	19.41	19.20	19.90	20.38	18.33	19.03	18.82	19.52	20.00
	8H	18.97	19.60	19.48	20.11	20.59	18.58	19.21	19.09	19.72	20.20
	12H	19.17	19.73	19.68	20.22	20.78	18.76	19.31	19.26	19.81	20.37
12H	4H	18.02	18.78	18.50	19.26	19.73	17.66	18.42	18.14	18.89	19.36
	6H	18.76	19.39	19.27	19.89	20.38	18.39	19.02	18.90	19.53	20.01
	8H	19.07	19.63	19.58	20.12	20.68	18.69	19.25	19.20	19.74	20.30