

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: P930391

Luminaire Tested: DFN2DS-HX4F0-110DS930-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930391
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-HX4F0-110DS930-FLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

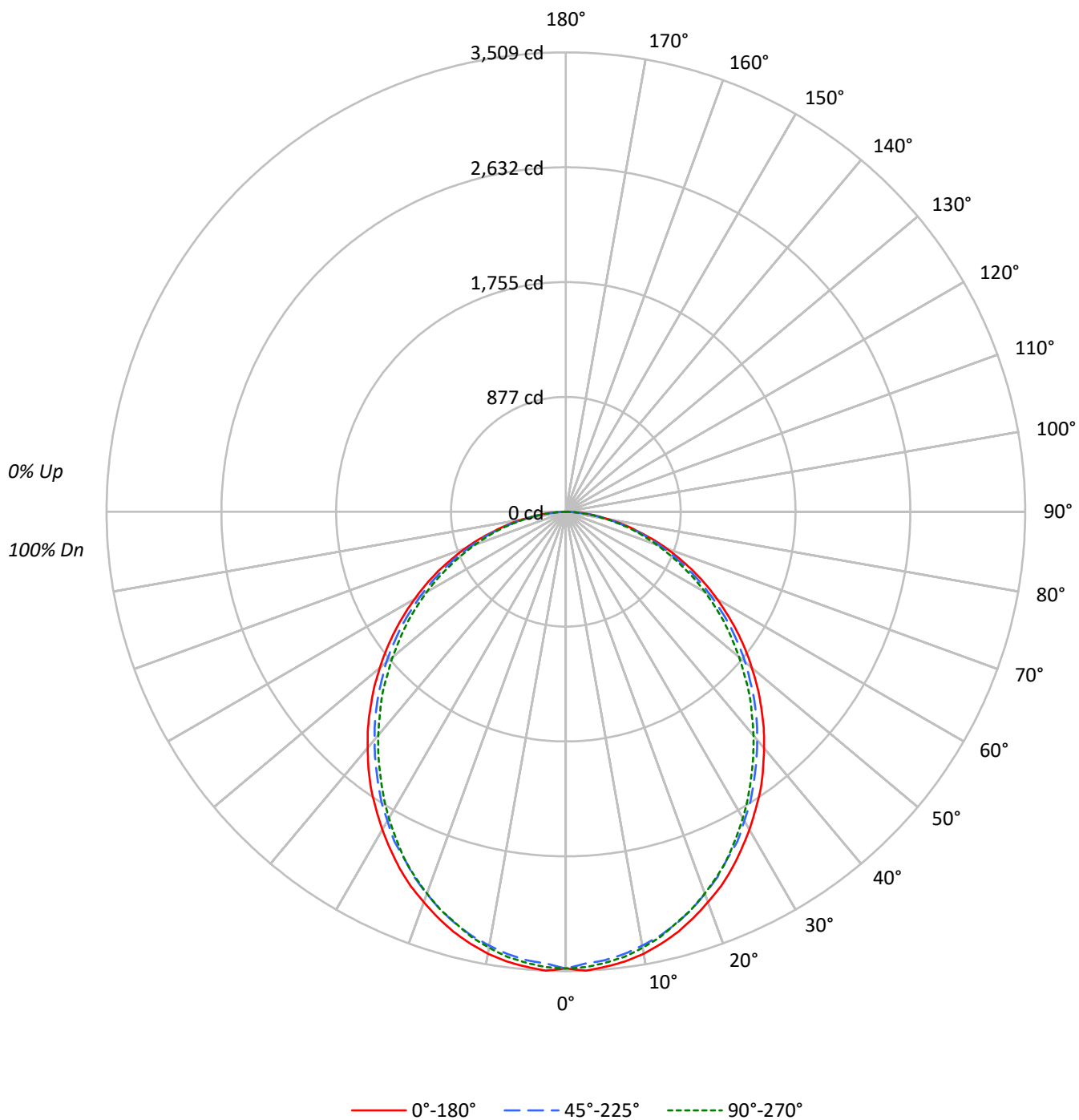
Lumens per Lamp: N/A
Luminaire Lumens: 8875.4 lumens
Efficiency: N/A
Efficacy: 75.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 117.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P930391

CATALOG NUMBER: DFN2DS-HX4F0-110DS930-FLL

Luminous Intensity Polar Plot



TEST NUMBER: P930391

CATALOG NUMBER: DFN2DS-HX4F0-110DS930-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°	2594	2594	2594
5°	2604	2566	2581
10°	2588	2540	2553
15°	2556	2507	2505
20°	2511	2458	2455
25°	2466	2397	2397
30°	2408	2341	2321
35°	2354	2274	2241
40°	2286	2207	2165
45°	2219	2141	2088
50°	2146	2072	1998
55°	2070	1992	1918
60°	1985	1896	1826
65°	1895	1800	1718
70°	1779	1684	1605
75°	1618	1551	1513
80°	1437	1393	1321
85°	1172	1118	1002

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2219 cd/sqm

TEST NUMBER: P930391

CATALOG NUMBER: DFN2DS-HX4F0-110DS930-FLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	328.3	3.7
10°-20°	923.8	10.4
20°-30°	1357.6	15.3
30°-40°	1576.7	17.8
40°-50°	1574.8	17.7
50°-60°	1373.2	15.5
60°-70°	1015.1	11.4
70°-80°	574.3	6.5
80°-90°	151.6	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°	2609.7	29.4
0°-40°	4186.4	47.2
0°-60°	7134.4	80.4
0°-90°	8875.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8875.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3488	3488	3488	3488	3488	
5°	3488	3475	3438	3465	3458	331
15°	3321	3301	3257	3270	3254	935
25°	3005	2979	2922	2928	2922	1383
35°	2593	2560	2506	2485	2469	1619
45°	2110	2086	2036	1999	1986	1628
55°	1597	1576	1536	1496	1479	1428
65°	1077	1057	1023	993	976	1065
75°	563	557	540	520	527	601
85°	137	134	131	121	117	162
90°	0	0	0	0	0	

TEST NUMBER: P930391

CATALOG NUMBER: DFN2DS-HX4F0-110DS930-FLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3488.4	3488.4	3488.4	3488.4	3488.4
2.5°	3508.6	3491.9	3454.9	3488.4	3481.9
5°	3488.4	3475.2	3438.2	3464.8	3458.5
7.5°	3464.8	3444.9	3407.9	3435.0	3428.2
10°	3428.2	3404.7	3364.5	3391.1	3381.2
12.5°	3377.7	3357.7	3317.5	3334.2	3327.5
15°	3320.7	3300.8	3257.0	3270.5	3253.8
17.5°	3250.2	3230.3	3186.6	3203.3	3186.6
20°	3173.0	3153.1	3106.1	3116.1	3102.9
22.5°	3096.2	3065.9	3022.1	3022.1	3015.3
25°	3005.4	2978.7	2921.8	2928.2	2921.8
27.5°	2904.7	2881.2	2837.7	2827.8	2811.1
30°	2804.3	2777.3	2727.1	2717.1	2703.6
32.5°	2696.8	2676.9	2623.2	2602.9	2589.3
35°	2592.9	2559.5	2505.7	2485.4	2468.7
37.5°	2475.5	2445.2	2391.5	2368.0	2351.3
40°	2354.9	2327.8	2274.1	2244.2	2230.7
42.5°	2237.4	2210.4	2157.0	2123.2	2103.3
45°	2110.0	2086.5	2036.0	1999.4	1985.8
47.5°	1985.8	1962.4	1908.6	1871.6	1851.6
50°	1854.9	1838.2	1791.1	1744.2	1727.5
52.5°	1727.5	1703.9	1660.6	1623.5	1600.0
55°	1596.8	1576.5	1536.4	1496.1	1479.4
57.5°	1465.9	1449.2	1405.4	1365.1	1351.6
60°	1334.9	1321.8	1274.7	1237.7	1227.8
62.5°	1207.5	1184.0	1150.5	1117.1	1103.6
65°	1076.9	1056.6	1023.2	992.9	976.2
67.5°	942.7	925.7	895.8	872.3	858.8
70°	818.5	805.0	774.7	751.3	738.1
72.5°	691.1	677.6	660.9	637.4	627.4
75°	563.3	557.0	539.9	520.0	526.7
77.5°	449.5	435.9	429.2	419.2	409.3
80°	335.6	332.0	325.3	315.3	308.6
82.5°	228.1	228.1	224.9	211.4	211.4
85°	137.4	134.1	131.0	120.6	117.4
87.5°	60.5	53.7	46.9	37.0	33.4
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P930391

CATALOG NUMBER: DFN2DS-HX4F0-110DS930-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	14.59	16.21	14.96	16.52	16.83	14.15	15.76	14.51	16.07	16.39
	3H	16.34	17.80	16.72	18.13	18.49	15.85	17.31	16.23	17.63	17.99
	4H	16.99	18.36	17.39	18.71	19.08	16.50	17.86	16.89	18.21	18.59
	6H	17.46	18.73	17.87	19.09	19.48	16.96	18.23	17.37	18.59	18.98
	8H	17.60	18.81	18.03	19.20	19.60	17.10	18.31	17.52	18.70	19.10
	12H	17.69	18.85	18.12	19.23	19.66	17.18	18.34	17.61	18.72	19.15
4H	2H	15.15	16.52	15.55	16.87	17.25	14.80	16.17	15.20	16.52	16.89
	3H	17.13	18.28	17.54	18.67	19.07	16.72	17.87	17.13	18.27	18.67
	4H	17.91	18.94	18.34	19.36	19.79	17.48	18.52	17.91	18.93	19.37
	6H	18.50	19.41	18.96	19.85	20.30	18.07	18.98	18.52	19.42	19.87
	8H	18.69	19.54	19.15	19.98	20.45	18.25	19.10	18.71	19.54	20.01
	12H	18.82	19.58	19.30	20.06	20.53	18.37	19.13	18.85	19.61	20.08
8H	4H	18.18	19.03	18.64	19.47	19.93	17.81	18.65	18.27	19.09	19.56
	6H	18.89	19.60	19.39	20.09	20.56	18.51	19.22	19.01	19.70	20.18
	8H	19.15	19.78	19.66	20.29	20.78	18.76	19.39	19.27	19.90	20.39
	12H	19.35	19.91	19.86	20.40	20.96	18.94	19.50	19.45	19.99	20.55
12H	4H	18.21	18.97	18.69	19.44	19.91	17.84	18.60	18.32	19.08	19.55
	6H	18.94	19.57	19.45	20.08	20.56	18.57	19.20	19.08	19.71	20.20
	8H	19.25	19.81	19.76	20.30	20.86	18.88	19.43	19.38	19.92	20.48