

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: P930385

Luminaire Tested: DFN2DS-HX4F0-110DS840-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930385
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-HX4F0-110DS840-FLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

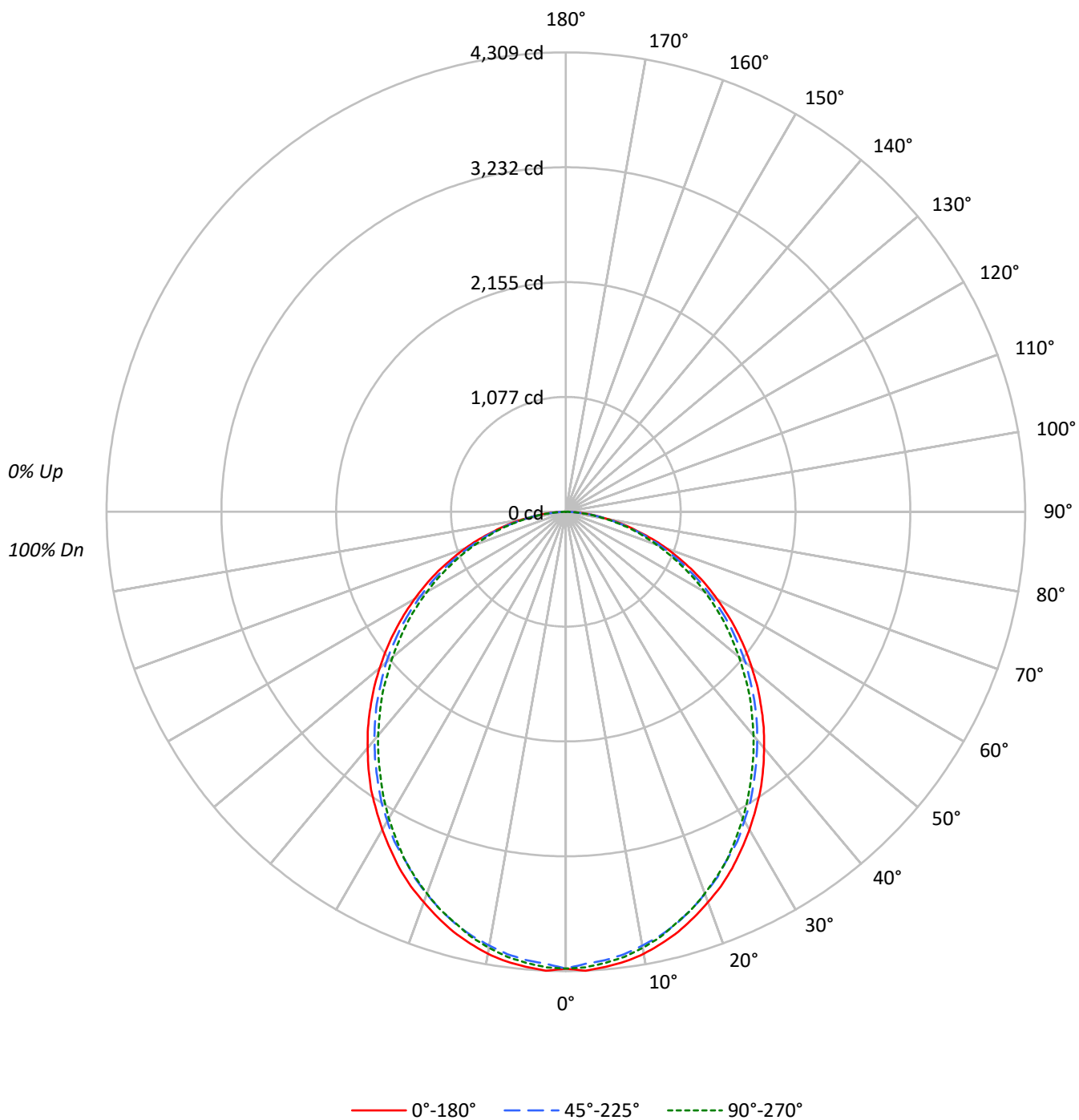
Lumens per Lamp: N/A
Luminaire Lumens: 10900.9 lumens
Efficiency: N/A
Efficacy: 93.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 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

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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	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°	3186	3186	3186
5°	3198	3152	3171
10°	3179	3120	3136
15°	3140	3079	3076
20°	3084	3019	3016
25°	3028	2944	2944
30°	2957	2876	2851
35°	2891	2794	2752
40°	2807	2711	2659
45°	2725	2630	2565
50°	2635	2545	2454
55°	2543	2446	2355
60°	2438	2328	2243
65°	2327	2211	2110
70°	2186	2069	1971
75°	1988	1905	1858
80°	1765	1711	1623
85°	1440	1373	1230

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2725 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	403.3	3.7
10°-20°	1134.6	10.4
20°-30°	1667.4	15.3
30°-40°	1936.6	17.8
40°-50°	1934.2	17.7
50°-60°	1686.5	15.5
60°-70°	1246.7	11.4
70°-80°	705.4	6.5
80°-90°	186.2	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°	3205.3	29.4
0°-40°	5141.8	47.2
0°-60°	8762.6	80.4
0°-90°	10900.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10900.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4284	4284	4284	4284	4284	
5°	4284	4268	4223	4256	4248	407
15°	4079	4054	4000	4017	3996	1149
25°	3691	3659	3589	3596	3589	1699
35°	3185	3144	3078	3053	3032	1989
45°	2592	2563	2501	2456	2439	2000
55°	1961	1936	1887	1838	1817	1753
65°	1323	1298	1257	1220	1199	1308
75°	692	684	663	639	647	739
85°	169	165	161	148	144	198
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4284.5	4284.5	4284.5	4284.5	4284.5
2.5°	4309.3	4288.8	4243.3	4284.5	4276.6
5°	4284.5	4268.3	4222.8	4255.6	4247.7
7.5°	4255.6	4231.1	4185.7	4218.9	4210.6
10°	4210.6	4181.7	4132.3	4165.1	4152.8
12.5°	4148.5	4124.0	4074.7	4095.2	4086.9
15°	4078.6	4054.0	4000.3	4016.9	3996.4
17.5°	3992.0	3967.6	3913.8	3934.3	3913.8
20°	3897.2	3872.7	3815.0	3827.2	3811.1
22.5°	3802.8	3765.6	3711.8	3711.8	3703.5
25°	3691.3	3658.6	3588.6	3596.5	3588.6
27.5°	3567.6	3538.7	3485.4	3473.2	3452.6
30°	3444.3	3411.1	3349.4	3337.2	3320.6
32.5°	3312.3	3287.9	3221.8	3196.9	3180.3
35°	3184.7	3143.6	3077.6	3052.6	3032.1
37.5°	3040.4	3003.3	2937.3	2908.4	2887.9
40°	2892.3	2859.1	2793.1	2756.4	2739.7
42.5°	2748.0	2714.8	2649.2	2607.7	2583.3
45°	2591.6	2562.7	2500.6	2455.7	2439.0
47.5°	2439.0	2410.2	2344.1	2298.7	2274.2
50°	2278.2	2257.7	2199.9	2142.2	2121.7
52.5°	2121.7	2092.8	2039.5	1994.0	1965.2
55°	1961.3	1936.3	1887.0	1837.5	1817.0
57.5°	1800.4	1779.9	1726.1	1676.7	1660.1
60°	1639.5	1623.4	1565.7	1520.2	1508.0
62.5°	1483.1	1454.3	1413.1	1372.1	1355.5
65°	1322.6	1297.7	1256.7	1219.5	1199.0
67.5°	1157.9	1136.9	1100.2	1071.4	1054.8
70°	1005.3	988.7	951.6	922.7	906.5
72.5°	848.8	832.2	811.7	782.9	770.6
75°	691.9	684.1	663.1	638.6	646.9
77.5°	552.1	535.4	527.1	514.9	502.7
80°	412.2	407.8	399.5	387.3	379.0
82.5°	280.2	280.2	276.3	259.7	259.7
85°	168.8	164.8	160.9	148.1	144.2
87.5°	74.3	66.0	57.7	45.4	41.0
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	15.31	16.92	15.67	17.23	17.55	14.86	16.47	15.23	16.79	17.10
	3H	17.06	18.51	17.44	18.84	19.20	16.57	18.02	16.94	18.35	18.71
	4H	17.70	19.07	18.10	19.42	19.80	17.21	18.58	17.61	18.93	19.30
	6H	18.17	19.44	18.58	19.81	20.20	17.67	18.94	18.08	19.31	19.70
	8H	18.32	19.53	18.74	19.92	20.32	17.81	19.02	18.24	19.41	19.81
	12H	18.41	19.57	18.84	19.95	20.38	17.90	19.06	18.32	19.44	19.87
4H	2H	15.87	17.24	16.27	17.59	17.96	15.52	16.88	15.91	17.23	17.61
	3H	17.84	18.99	18.25	19.39	19.79	17.44	18.58	17.85	18.98	19.38
	4H	18.62	19.66	19.05	20.07	20.51	18.20	19.23	18.63	19.65	20.08
	6H	19.22	20.12	19.67	20.56	21.02	18.78	19.69	19.24	20.13	20.59
	8H	19.41	20.25	19.87	20.70	21.16	18.97	19.81	19.43	20.26	20.72
	12H	19.54	20.30	20.02	20.77	21.24	19.09	19.85	19.57	20.32	20.79
8H	4H	18.89	19.74	19.35	20.18	20.65	18.52	19.37	18.98	19.81	20.27
	6H	19.61	20.31	20.10	20.80	21.27	19.23	19.93	19.72	20.42	20.89
	8H	19.87	20.50	20.38	21.00	21.49	19.48	20.11	19.99	20.61	21.10
	12H	20.07	20.62	20.57	21.12	21.68	19.65	20.21	20.16	20.70	21.26
12H	4H	18.92	19.68	19.40	20.16	20.62	18.56	19.31	19.04	19.79	20.26
	6H	19.65	20.29	20.16	20.79	21.28	19.28	19.92	19.79	20.42	20.91
	8H	19.97	20.53	20.47	21.02	21.58	19.59	20.15	20.10	20.64	21.20