

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: P930416

Luminaire Tested: DFN2DS-HX4F0-120DS950-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930416
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-HX4F0-120DS950-RLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

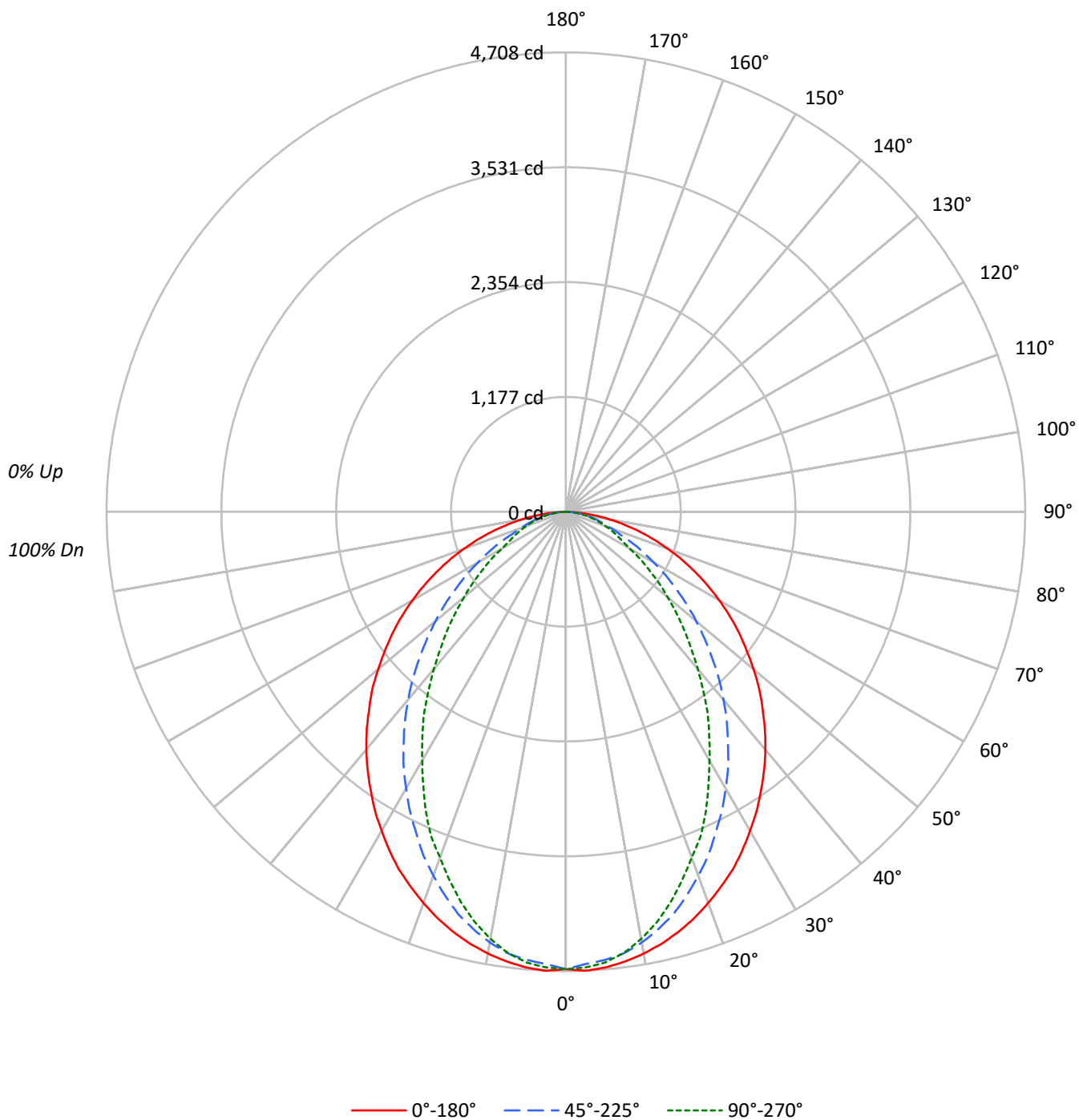
Lumens per Lamp: N/A
Luminaire Lumens: 9639.0 lumens
Efficiency: N/A
Efficacy: 73.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

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

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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°	3485	3485	3485
5°	3498	3441	3460
10°	3471	3385	3356
15°	3432	3285	3190
20°	3376	3141	2984
25°	3320	2979	2784
30°	3241	2811	2527
35°	3165	2630	2302
40°	3088	2441	2042
45°	2997	2230	1806
50°	2905	2017	1575
55°	2810	1787	1353
60°	2700	1545	1123
65°	2575	1298	1022
70°	2425	1069	940
75°	2242	975	878
80°	1979	871	799
85°	1555	687	687

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2997 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	439.3	4.6
10°-20°	1205.8	12.5
20°-30°	1693.0	17.6
30°-40°	1845.4	19.1
40°-50°	1696.2	17.6
50°-60°	1332.1	13.8
60°-70°	867.0	9.0
70°-80°	446.3	4.6
80°-90°	113.9	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°	3338.0	34.6
0°-40°	5183.5	53.8
0°-60°	8211.7	85.2
0°-90°	9639.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9639.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4687	4687	4687	4687	4687	
5°	4687	4666	4610	4648	4636	444
15°	4458	4411	4267	4186	4144	1256
25°	4046	3910	3631	3457	3393	1861
35°	3487	3270	2897	2630	2536	2182
45°	2850	2566	2121	1819	1718	2201
55°	2167	1836	1378	1124	1044	1937
65°	1463	1120	738	594	581	1451
75°	780	483	339	310	306	825
85°	182	93	80	80	80	219
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4686.8	4686.8	4686.8	4686.8	4686.8
2.5°	4708.0	4686.8	4640.0	4682.8	4674.2
5°	4686.8	4665.7	4610.3	4648.5	4636.0
7.5°	4648.5	4623.3	4564.0	4580.6	4559.4
10°	4597.7	4568.0	4483.4	4470.3	4445.2
12.5°	4534.2	4496.0	4381.2	4356.1	4309.3
15°	4457.8	4411.0	4267.0	4186.3	4144.1
17.5°	4368.6	4300.7	4122.5	4029.4	3961.4
20°	4267.0	4181.9	3969.9	3864.2	3770.6
22.5°	4156.7	4059.1	3812.9	3668.9	3605.5
25°	4046.5	3910.5	3630.6	3456.9	3393.0
27.5°	3915.0	3770.6	3461.0	3261.7	3164.0
30°	3775.1	3613.6	3274.2	3058.2	2943.5
32.5°	3639.2	3443.9	3096.5	2841.8	2735.6
35°	3486.7	3270.2	2897.1	2629.8	2536.2
37.5°	3338.1	3104.6	2710.4	2417.4	2311.7
40°	3181.1	2926.9	2515.1	2214.0	2103.8
42.5°	3019.9	2748.6	2320.3	2006.1	1900.4
45°	2850.3	2566.0	2120.9	1819.4	1717.6
47.5°	2689.2	2388.2	1930.1	1628.6	1535.4
50°	2511.1	2210.0	1743.3	1450.4	1361.7
52.5°	2336.9	2018.7	1565.1	1285.2	1204.7
55°	2167.3	1836.5	1378.4	1124.1	1043.6
57.5°	1993.5	1654.2	1213.2	975.6	907.7
60°	1815.3	1476.0	1039.0	823.1	755.1
62.5°	1641.7	1302.3	890.6	687.2	653.4
65°	1463.4	1119.6	738.0	594.0	581.0
67.5°	1293.8	949.9	594.0	521.5	509.0
70°	1115.6	784.8	491.9	449.5	432.4
72.5°	945.9	631.8	411.3	377.5	369.0
75°	780.3	483.3	339.3	309.6	305.5
77.5°	615.2	343.3	267.3	250.2	241.6
80°	462.2	246.2	203.4	186.7	186.7
82.5°	322.2	165.6	140.0	131.4	131.4
85°	182.3	93.2	80.5	80.5	80.5
87.5°	67.9	33.7	33.7	29.7	29.7
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	15.57	17.09	15.94	17.41	17.72	11.53	13.05	11.90	13.37	13.68
	3H	17.34	18.70	17.72	19.03	19.39	12.80	14.16	13.18	14.49	14.85
	4H	18.00	19.28	18.40	19.63	20.01	13.30	14.58	13.70	14.93	15.31
	6H	18.49	19.68	18.91	20.04	20.43	13.68	14.86	14.09	15.23	15.62
	8H	18.66	19.78	19.08	20.17	20.58	13.80	14.93	14.23	15.32	15.72
	12H	18.76	19.84	19.19	20.22	20.65	13.89	14.96	14.32	15.35	15.78
4H	2H	15.68	16.96	16.08	17.31	17.68	12.23	13.51	12.63	13.86	14.24
	3H	17.61	18.67	18.02	19.07	19.47	13.67	14.73	14.08	15.13	15.54
	4H	18.36	19.32	18.79	19.73	20.17	14.27	15.23	14.70	15.64	16.08
	6H	18.95	19.78	19.41	20.23	20.69	14.76	15.59	15.22	16.03	16.49
	8H	19.17	19.94	19.63	20.39	20.85	14.92	15.70	15.38	16.14	16.61
	12H	19.32	20.01	19.80	20.49	20.96	15.04	15.73	15.52	16.21	16.68
8H	4H	18.38	19.16	18.85	19.60	20.07	14.62	15.40	15.09	15.85	16.31
	6H	19.02	19.66	19.52	20.15	20.63	15.21	15.85	15.71	16.34	16.82
	8H	19.27	19.85	19.78	20.36	20.85	15.43	16.01	15.95	16.52	17.01
	12H	19.48	19.99	19.98	20.48	21.04	15.61	16.12	16.12	16.61	17.18
12H	4H	18.37	19.06	18.85	19.54	20.01	14.67	15.36	15.15	15.84	16.31
	6H	19.00	19.58	19.52	20.09	20.58	15.27	15.85	15.79	16.36	16.85
	8H	19.29	19.80	19.80	20.29	20.85	15.55	16.06	16.06	16.55	17.11