

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: P931215

Luminaire Tested: DFN2DS-SQ4F0-160DS850-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931215
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-SQ4F0-160DS850-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

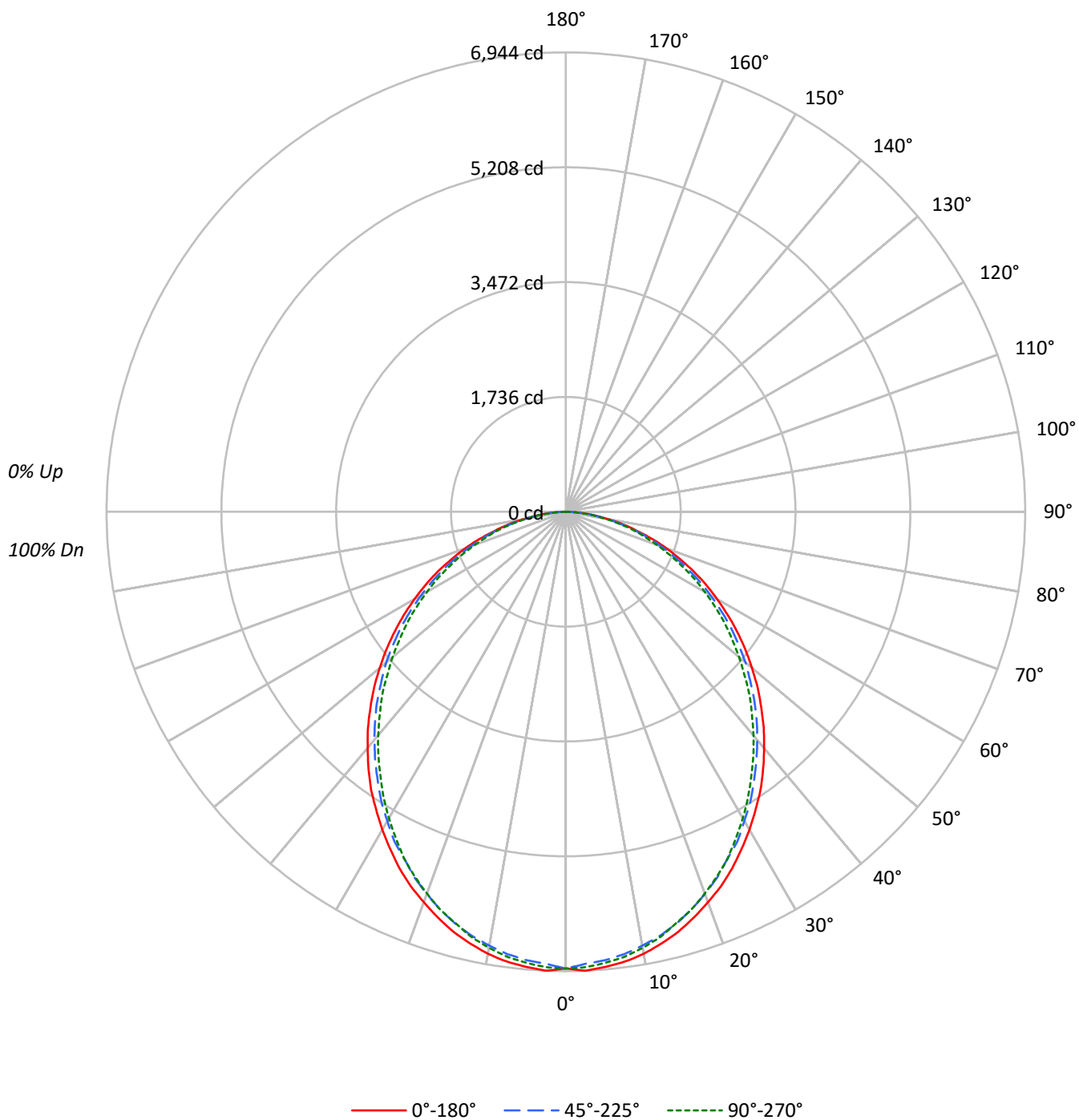
Lumens per Lamp: N/A
Luminaire Lumens: 17566.5 lumens
Efficiency: N/A
Efficacy: 100.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 174.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
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°	4845	4845	4845
5°	4863	4793	4821
10°	4834	4745	4768
15°	4774	4683	4678
20°	4689	4591	4586
25°	4605	4477	4477
30°	4497	4373	4336
35°	4396	4248	4186
40°	4269	4123	4044
45°	4144	3999	3900
50°	4008	3870	3732
55°	3866	3720	3582
60°	3708	3541	3410
65°	3539	3362	3208
70°	3324	3146	2997
75°	3023	2897	2826
80°	2684	2601	2468
85°	2189	2087	1871

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4144 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	649.8	3.7
10°-20°	1828.4	10.4
20°-30°	2687.0	15.3
30°-40°	3120.8	17.8
40°-50°	3116.9	17.7
50°-60°	2717.8	15.5
60°-70°	2009.1	11.4
70°-80°	1136.7	6.5
80°-90°	300.0	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°	5165.2	29.4
0°-40°	8286.0	47.2
0°-60°	14120.7	80.4
0°-90°	17566.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	17566.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6904	6904	6904	6904	6904	
5°	6904	6878	6805	6858	6845	655
15°	6572	6533	6446	6473	6440	1851
25°	5948	5896	5783	5796	5783	2737
35°	5132	5066	4959	4919	4886	3205
45°	4176	4130	4030	3957	3930	3223
55°	3160	3120	3041	2961	2928	2826
65°	2131	2091	2025	1965	1932	2107
75°	1115	1102	1068	1029	1042	1190
85°	272	266	259	239	232	320
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	6904.3	6904.3	6904.3	6904.3	6904.3
2.5°	6944.4	6911.3	6838.1	6904.3	6891.5
5°	6904.3	6878.2	6804.9	6857.8	6845.1
7.5°	6857.8	6818.4	6745.0	6798.6	6785.2
10°	6785.2	6738.7	6659.2	6712.0	6692.3
12.5°	6685.3	6645.8	6566.2	6599.3	6585.9
15°	6572.5	6533.1	6446.4	6473.2	6440.1
17.5°	6433.1	6393.6	6307.0	6340.0	6307.0
20°	6280.2	6240.8	6147.7	6167.5	6141.4
22.5°	6128.1	6068.2	5981.5	5981.5	5968.2
25°	5948.5	5895.7	5782.9	5795.6	5782.9
27.5°	5749.1	5702.6	5616.6	5597.0	5563.9
30°	5550.4	5497.0	5397.6	5377.9	5351.1
32.5°	5337.7	5298.4	5191.9	5151.7	5125.0
35°	5132.1	5065.9	4959.4	4919.3	4886.3
37.5°	4899.7	4839.8	4733.4	4686.9	4653.8
40°	4660.8	4607.3	4501.0	4441.8	4415.0
42.5°	4428.5	4374.9	4269.2	4202.3	4162.9
45°	4176.3	4129.7	4029.8	3957.1	3930.4
47.5°	3930.4	3883.9	3777.6	3704.3	3664.9
50°	3671.2	3638.1	3545.1	3452.1	3419.0
52.5°	3419.0	3372.6	3286.6	3213.3	3166.9
55°	3160.5	3120.4	3040.8	2961.1	2928.1
57.5°	2901.4	2868.2	2781.6	2702.0	2675.2
60°	2642.1	2616.0	2523.1	2449.8	2430.0
62.5°	2389.9	2343.4	2277.2	2211.0	2184.3
65°	2131.4	2091.2	2025.0	1965.3	1932.1
67.5°	1865.9	1832.1	1773.0	1726.4	1699.7
70°	1620.0	1593.3	1533.4	1486.9	1460.9
72.5°	1367.8	1341.1	1308.1	1261.5	1241.9
75°	1115.0	1102.3	1068.5	1029.0	1042.5
77.5°	889.6	862.9	849.5	829.8	810.0
80°	664.2	657.2	643.8	624.0	610.7
82.5°	451.5	451.5	445.2	418.4	418.4
85°	271.9	265.5	259.2	238.8	232.4
87.5°	119.8	106.4	92.9	73.3	66.2
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	16.76	18.38	17.13	18.69	19.00	16.32	17.93	16.69	18.25	18.56
	3H	18.51	19.97	18.89	20.30	20.66	18.02	19.48	18.40	19.80	20.17
	4H	19.16	20.53	19.56	20.88	21.25	18.67	20.04	19.06	20.38	20.76
	6H	19.63	20.90	20.04	21.26	21.65	19.13	20.40	19.54	20.76	21.15
	8H	19.77	20.98	20.20	21.37	21.77	19.27	20.48	19.69	20.87	21.27
	12H	19.86	21.02	20.29	21.41	21.83	19.35	20.51	19.78	20.89	21.32
4H	2H	17.33	18.69	17.72	19.04	19.42	16.97	18.34	17.37	18.69	19.07
	3H	19.30	20.45	19.71	20.84	21.24	18.89	20.04	19.30	20.44	20.84
	4H	20.08	21.11	20.51	21.53	21.96	19.65	20.69	20.08	21.10	21.54
	6H	20.67	21.58	21.13	22.02	22.47	20.24	21.15	20.70	21.59	22.04
	8H	20.86	21.71	21.32	22.15	22.62	20.42	21.27	20.89	21.71	22.18
	12H	20.99	21.75	21.47	22.23	22.70	20.54	21.30	21.02	21.78	22.25
8H	4H	20.35	21.20	20.81	21.64	22.10	19.98	20.82	20.44	21.26	21.73
	6H	21.06	21.77	21.56	22.26	22.73	20.68	21.39	21.18	21.87	22.35
	8H	21.32	21.95	21.83	22.46	22.95	20.93	21.56	21.44	22.07	22.56
	12H	21.52	22.08	22.03	22.57	23.13	21.11	21.67	21.62	22.16	22.72
12H	4H	20.38	21.14	20.86	21.61	22.08	20.01	20.77	20.49	21.25	21.72
	6H	21.11	21.74	21.62	22.25	22.73	20.74	21.37	21.25	21.88	22.37
	8H	21.42	21.98	21.93	22.47	23.03	21.05	21.60	21.55	22.09	22.66