

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: P931213

Luminaire Tested: DFN2DS-SQ4F0-160DS840-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931213
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-SQ4F0-160DS840-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

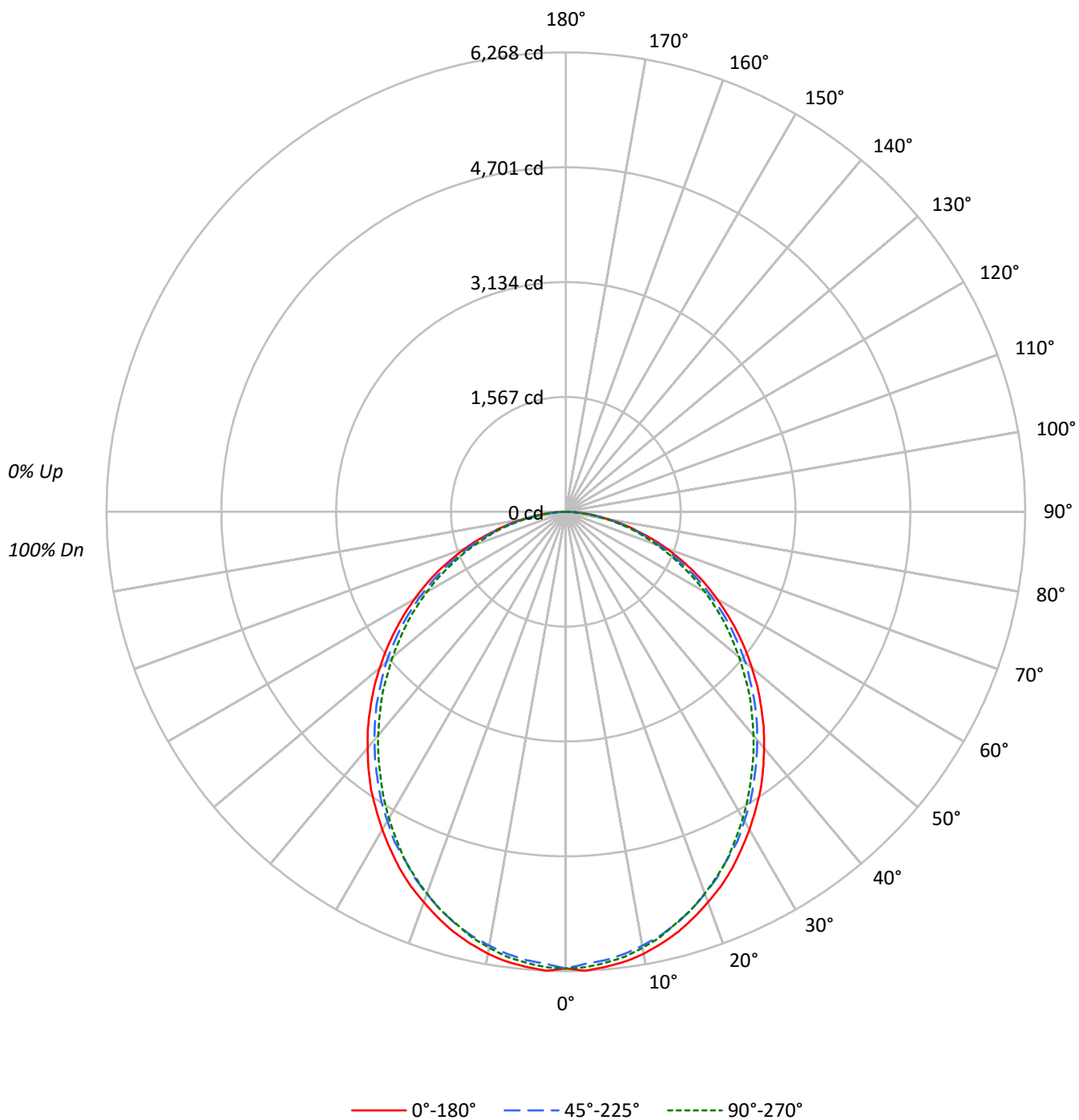
Lumens per Lamp: N/A
Luminaire Lumens: 15855.8 lumens
Efficiency: N/A
Efficacy: 90.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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°	4373	4373	4373
5°	4389	4326	4352
10°	4364	4283	4304
15°	4309	4227	4223
20°	4233	4143	4139
25°	4157	4041	4041
30°	4059	3947	3913
35°	3968	3835	3778
40°	3853	3721	3650
45°	3741	3609	3520
50°	3617	3493	3369
55°	3490	3358	3233
60°	3347	3196	3078
65°	3194	3035	2895
70°	3000	2840	2705
75°	2728	2615	2551
80°	2422	2348	2228
85°	1976	1883	1689

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3741 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	586.5	3.7
10°-20°	1650.3	10.4
20°-30°	2425.3	15.3
30°-40°	2816.9	17.8
40°-50°	2813.4	17.7
50°-60°	2453.2	15.5
60°-70°	1813.4	11.4
70°-80°	1026.0	6.5
80°-90°	270.8	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°	4662.2	29.4
0°-40°	7479.1	47.2
0°-60°	12745.6	80.4
0°-90°	15855.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15855.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6232	6232	6232	6232	6232	
5°	6232	6208	6142	6190	6178	592
15°	5932	5897	5819	5843	5813	1671
25°	5369	5322	5220	5231	5220	2471
35°	4632	4573	4476	4440	4410	2893
45°	3770	3728	3637	3572	3548	2909
55°	2853	2816	2745	2673	2643	2550
65°	1924	1888	1828	1774	1744	1902
75°	1006	995	964	929	941	1074
85°	245	240	234	216	210	289
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	6231.9	6231.9	6231.9	6231.9	6231.9
2.5°	6268.2	6238.2	6172.2	6231.9	6220.4
5°	6231.9	6208.4	6142.2	6190.0	6178.5
7.5°	6190.0	6154.3	6088.2	6136.5	6124.4
10°	6124.4	6082.5	6010.7	6058.4	6040.5
12.5°	6034.2	5998.6	5926.7	5956.7	5944.5
15°	5932.4	5896.9	5818.6	5842.8	5812.9
17.5°	5806.6	5771.0	5692.8	5722.6	5692.8
20°	5668.6	5633.0	5549.0	5566.9	5543.3
22.5°	5531.3	5477.3	5399.0	5399.0	5387.0
25°	5369.2	5321.5	5219.7	5231.2	5219.7
27.5°	5189.2	5147.2	5069.7	5051.9	5022.0
30°	5009.9	4961.7	4872.0	4854.1	4830.0
32.5°	4817.9	4782.4	4686.3	4650.0	4625.9
35°	4632.3	4572.6	4476.5	4440.2	4410.4
37.5°	4422.5	4368.5	4272.5	4230.4	4200.6
40°	4206.9	4158.7	4062.7	4009.2	3985.1
42.5°	3997.2	3948.8	3853.4	3793.1	3757.5
45°	3769.6	3727.5	3637.3	3571.8	3547.6
47.5°	3547.6	3505.7	3409.7	3343.5	3308.0
50°	3313.7	3283.8	3199.9	3115.9	3086.1
52.5°	3086.1	3044.1	2966.6	2900.4	2858.5
55°	2852.7	2816.5	2744.6	2672.8	2642.9
57.5°	2618.8	2588.9	2510.7	2438.8	2414.7
60°	2384.8	2361.3	2277.4	2211.2	2193.4
62.5°	2157.2	2115.2	2055.5	1995.7	1971.6
65°	1923.8	1887.6	1827.8	1773.9	1743.9
67.5°	1684.2	1653.7	1600.3	1558.3	1534.1
70°	1462.3	1438.1	1384.1	1342.1	1318.6
72.5°	1234.6	1210.5	1180.7	1138.6	1120.9
75°	1006.4	995.0	964.5	928.8	940.9
77.5°	803.0	778.9	766.8	748.9	731.1
80°	599.5	593.2	581.1	563.3	551.3
82.5°	407.5	407.5	401.8	377.7	377.7
85°	245.4	239.6	233.9	215.5	209.8
87.5°	108.1	96.0	83.9	66.2	59.8
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	16.41	18.02	16.77	18.33	18.65	15.96	17.57	16.33	17.89	18.20
	3H	18.16	19.61	18.54	19.94	20.30	17.67	19.12	18.04	19.45	19.81
	4H	18.80	20.17	19.20	20.52	20.90	18.31	19.68	18.71	20.03	20.40
	6H	19.27	20.54	19.69	20.91	21.30	18.77	20.04	19.18	20.41	20.80
	8H	19.42	20.63	19.84	21.02	21.42	18.91	20.13	19.34	20.51	20.91
	12H	19.51	20.67	19.94	21.05	21.48	19.00	20.16	19.42	20.54	20.97
4H	2H	16.97	18.34	17.37	18.69	19.06	16.62	17.99	17.01	18.33	18.71
	3H	18.94	20.09	19.35	20.49	20.89	18.54	19.68	18.95	20.08	20.48
	4H	19.72	20.76	20.15	21.17	21.61	19.30	20.33	19.73	20.75	21.18
	6H	20.32	21.22	20.77	21.66	22.12	19.88	20.79	20.34	21.23	21.69
	8H	20.51	21.35	20.97	21.80	22.26	20.07	20.92	20.53	21.36	21.82
	12H	20.64	21.40	21.12	21.87	22.34	20.19	20.95	20.67	21.42	21.89
8H	4H	19.99	20.84	20.45	21.28	21.75	19.62	20.47	20.08	20.91	21.37
	6H	20.71	21.41	21.20	21.90	22.38	20.33	21.03	20.82	21.52	21.99
	8H	20.97	21.60	21.48	22.11	22.59	20.58	21.21	21.09	21.71	22.20
	12H	21.17	21.73	21.67	22.22	22.78	20.75	21.31	21.26	21.80	22.36
12H	4H	20.02	20.78	20.50	21.26	21.73	19.66	20.42	20.14	20.89	21.36
	6H	20.75	21.39	21.26	21.89	22.38	20.38	21.02	20.89	21.52	22.01
	8H	21.07	21.63	21.57	22.12	22.68	20.69	21.25	21.20	21.74	22.30