

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: P931209

Luminaire Tested: DFN2DS-SQ4F0-160DS830-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931209
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-SQ4F0-160DS830-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

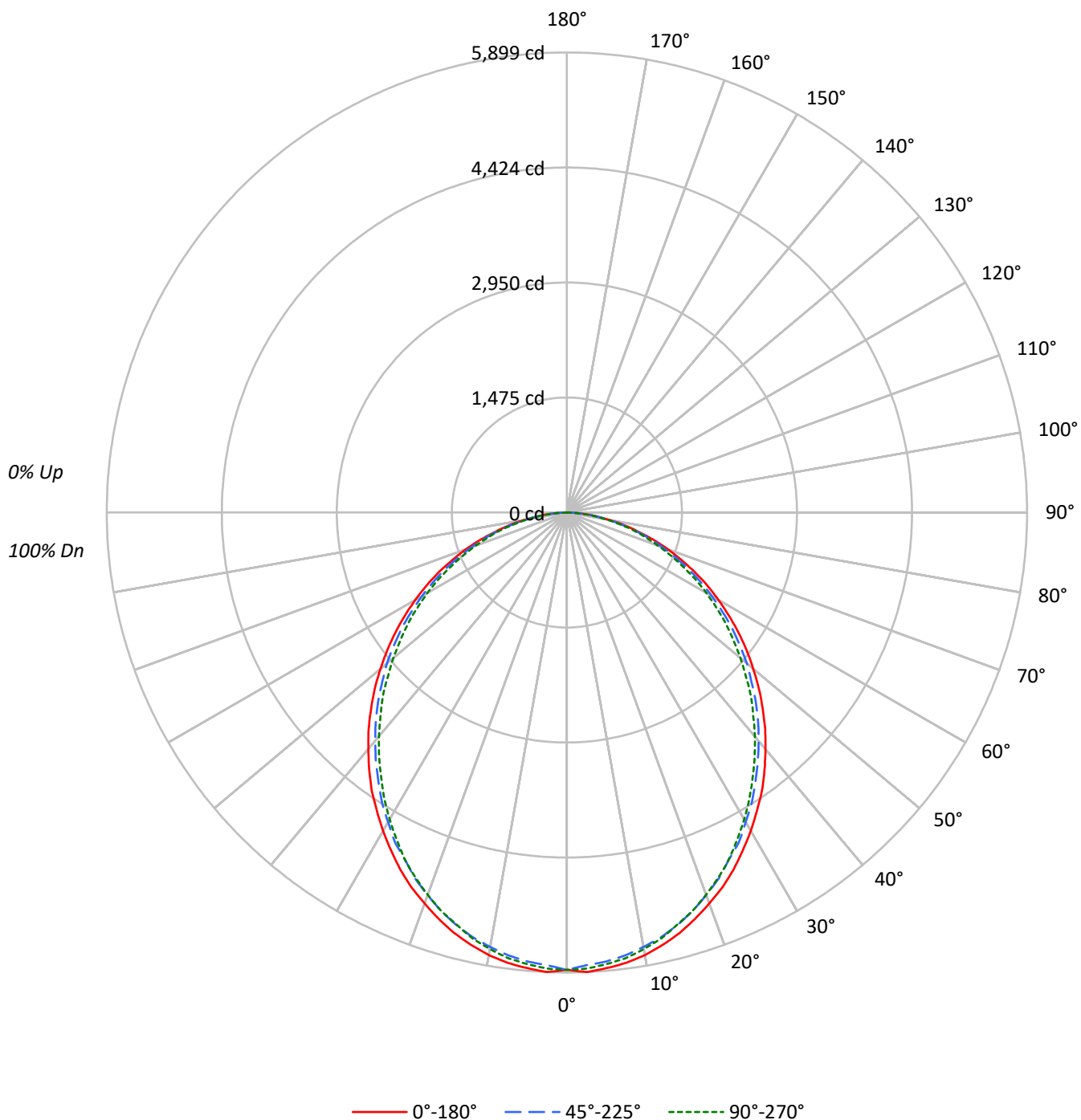
Lumens per Lamp: N/A
Luminaire Lumens: 14921.2 lumens
Efficiency: N/A
Efficacy: 85.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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°	4115	4115	4115
5°	4131	4071	4095
10°	4106	4030	4050
15°	4056	3978	3974
20°	3983	3899	3895
25°	3912	3803	3803
30°	3820	3715	3683
35°	3734	3608	3555
40°	3626	3502	3435
45°	3520	3397	3313
50°	3404	3287	3170
55°	3284	3160	3043
60°	3149	3008	2897
65°	3006	2856	2725
70°	2823	2672	2546
75°	2568	2461	2401
80°	2280	2210	2096
85°	1860	1772	1589

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3520 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	552.0	3.7
10°-20°	1553.1	10.4
20°-30°	2282.4	15.3
30°-40°	2650.8	17.8
40°-50°	2647.5	17.7
50°-60°	2308.6	15.5
60°-70°	1706.5	11.4
70°-80°	965.5	6.5
80°-90°	254.8	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°	4387.4	29.4
0°-40°	7038.2	47.2
0°-60°	11994.4	80.4
0°-90°	14921.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14921.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5865	5865	5865	5865	5865	
5°	5865	5842	5780	5825	5814	557
15°	5583	5549	5476	5498	5470	1572
25°	5053	5008	4912	4923	4912	2325
35°	4359	4303	4213	4178	4150	2722
45°	3547	3508	3423	3361	3338	2738
55°	2685	2650	2583	2515	2487	2400
65°	1810	1776	1720	1669	1641	1790
75°	947	936	908	874	886	1011
85°	231	226	220	203	197	272
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5864.6	5864.6	5864.6	5864.6	5864.6
2.5°	5898.7	5870.5	5808.4	5864.6	5853.8
5°	5864.6	5842.5	5780.2	5825.1	5814.3
7.5°	5825.1	5791.6	5729.3	5774.8	5763.4
10°	5763.4	5724.0	5656.4	5701.3	5684.5
12.5°	5678.6	5645.0	5577.4	5605.6	5594.2
15°	5582.8	5549.3	5475.7	5498.5	5470.3
17.5°	5464.4	5430.8	5357.2	5385.3	5357.2
20°	5334.5	5301.0	5222.0	5238.7	5216.6
22.5°	5205.3	5154.4	5080.8	5080.8	5069.5
25°	5052.7	5007.9	4912.1	4922.9	4912.1
27.5°	4883.3	4843.9	4770.9	4754.2	4726.0
30°	4714.6	4669.2	4584.8	4568.0	4545.3
32.5°	4533.9	4500.5	4410.1	4376.0	4353.3
35°	4359.3	4303.1	4212.6	4178.5	4150.5
37.5°	4161.9	4111.0	4020.6	3981.1	3953.0
40°	3958.9	3913.5	3823.2	3772.9	3750.2
42.5°	3761.6	3716.1	3626.3	3569.5	3536.0
45°	3547.4	3507.8	3422.9	3361.2	3338.5
47.5°	3338.5	3299.1	3208.7	3146.5	3113.0
50°	3118.4	3090.2	3011.3	2932.3	2904.2
52.5°	2904.2	2864.7	2791.7	2729.4	2690.0
55°	2684.6	2650.5	2582.9	2515.2	2487.2
57.5°	2464.5	2436.3	2362.7	2295.1	2272.4
60°	2244.2	2222.1	2143.1	2080.9	2064.1
62.5°	2030.0	1990.5	1934.3	1878.1	1855.4
65°	1810.4	1776.3	1720.1	1669.3	1641.2
67.5°	1584.9	1556.2	1506.0	1466.4	1443.7
70°	1376.1	1353.4	1302.5	1263.0	1240.9
72.5°	1161.9	1139.2	1111.1	1071.5	1054.9
75°	947.1	936.3	907.6	874.1	885.5
77.5°	755.7	733.0	721.6	704.8	688.0
80°	564.2	558.2	546.8	530.1	518.8
82.5°	383.5	383.5	378.1	355.4	355.4
85°	231.0	225.5	220.1	202.8	197.4
87.5°	101.7	90.3	78.9	62.3	56.2
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	16.20	17.81	16.56	18.12	18.44	15.75	17.36	16.12	17.68	17.99
	3H	17.95	19.40	18.32	19.73	20.09	17.46	18.91	17.83	19.24	19.60
	4H	18.59	19.96	18.99	20.31	20.69	18.10	19.47	18.50	19.82	20.19
	6H	19.06	20.33	19.47	20.70	21.09	18.56	19.83	18.97	20.19	20.59
	8H	19.21	20.42	19.63	20.81	21.21	18.70	19.91	19.13	20.30	20.70
	12H	19.30	20.46	19.73	20.84	21.27	18.78	19.94	19.21	20.33	20.75
4H	2H	16.76	18.13	17.16	18.47	18.85	16.41	17.77	16.80	18.12	18.50
	3H	18.73	19.88	19.14	20.28	20.68	18.33	19.47	18.74	19.87	20.27
	4H	19.51	20.55	19.94	20.96	21.40	19.09	20.12	19.52	20.54	20.97
	6H	20.11	21.01	20.56	21.45	21.91	19.67	20.58	20.13	21.02	21.48
	8H	20.30	21.14	20.76	21.58	22.05	19.86	20.70	20.32	21.15	21.61
	12H	20.43	21.19	20.91	21.66	22.13	19.98	20.74	20.46	21.21	21.68
8H	4H	19.78	20.63	20.24	21.07	21.54	19.41	20.26	19.87	20.70	21.16
	6H	20.50	21.20	20.99	21.69	22.16	20.12	20.82	20.61	21.31	21.78
	8H	20.76	21.39	21.27	21.89	22.38	20.36	21.00	20.87	21.50	21.99
	12H	20.96	21.51	21.46	22.00	22.57	20.54	21.10	21.05	21.59	22.15
12H	4H	19.81	20.57	20.29	21.04	21.51	19.44	20.20	19.92	20.68	21.15
	6H	20.54	21.17	21.05	21.68	22.17	20.17	20.81	20.68	21.31	21.80
	8H	20.86	21.41	21.36	21.90	22.47	20.48	21.04	20.99	21.53	22.09