

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: P931171

Luminaire Tested: DFN2DS-SQ4F0-110DS950-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931171
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-SQ4F0-110DS950-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

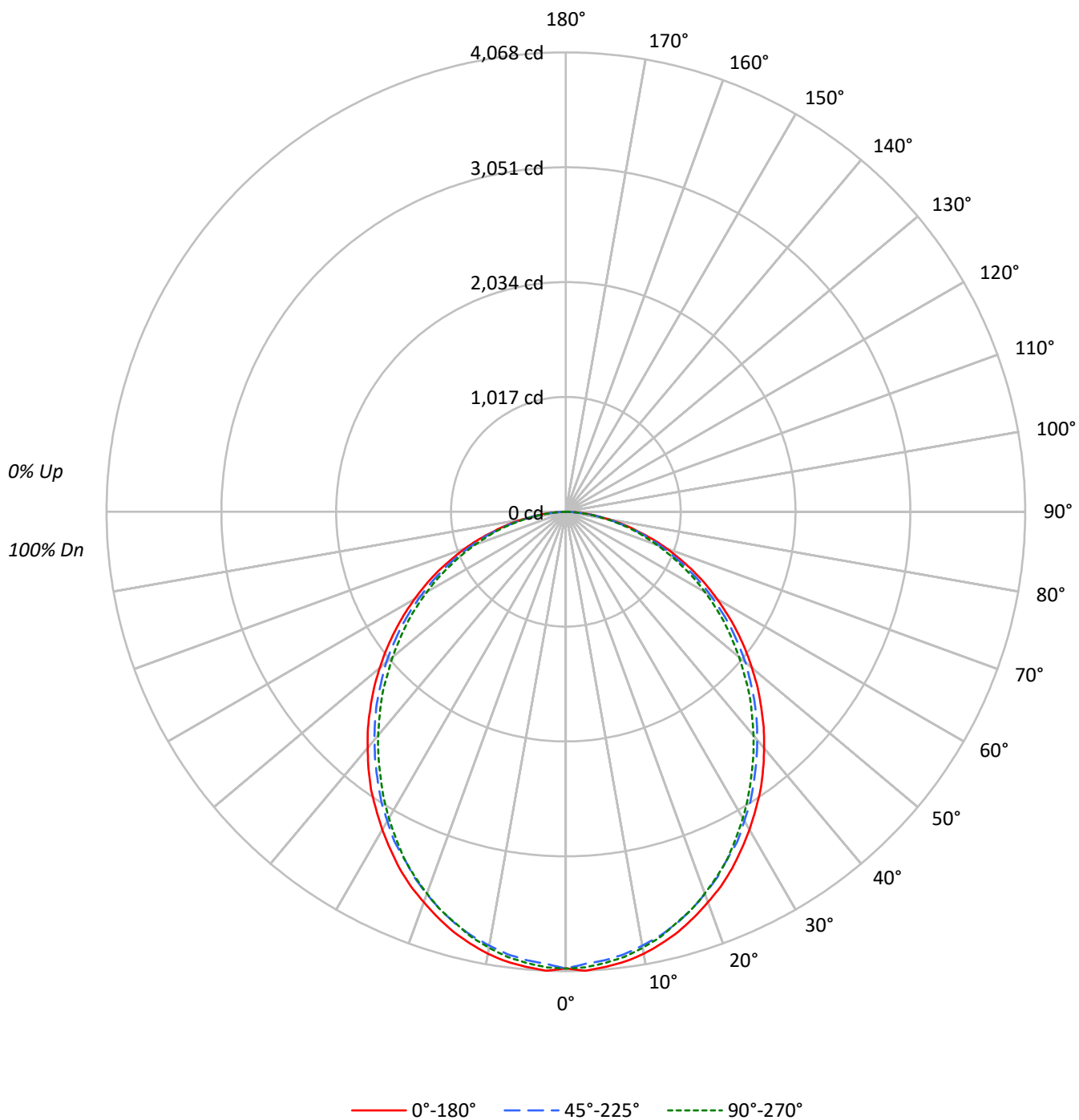
Lumens per Lamp: N/A
Luminaire Lumens: 10291.0 lumens
Efficiency: N/A
Efficacy: 91.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 113
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P931171

CATALOG NUMBER: DFN2DS-SQ4F0-110DS950-FLL

Luminous Intensity Polar Plot



TEST NUMBER: P931171

CATALOG NUMBER: DFN2DS-SQ4F0-110DS950-FLL

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°	2838	2838	2838
5°	2849	2808	2825
10°	2832	2780	2793
15°	2797	2743	2741
20°	2747	2689	2687
25°	2698	2623	2623
30°	2635	2562	2540
35°	2575	2489	2452
40°	2501	2415	2369
45°	2428	2343	2285
50°	2348	2267	2187
55°	2265	2179	2099
60°	2172	2074	1998
65°	2073	1970	1879
70°	1947	1843	1756
75°	1771	1697	1656
80°	1573	1524	1446
85°	1282	1223	1097

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2428 cd/sqm

TEST NUMBER: P931171

CATALOG NUMBER: DFN2DS-SQ4F0-110DS950-FLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	380.7	3.7
10°-20°	1071.1	10.4
20°-30°	1574.1	15.3
30°-40°	1828.2	17.8
40°-50°	1826.0	17.7
50°-60°	1592.2	15.5
60°-70°	1177.0	11.4
70°-80°	665.9	6.5
80°-90°	175.8	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°	3025.9	29.4
0°-40°	4854.2	47.2
0°-60°	8272.4	80.4
0°-90°	10291.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10291.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4045	4045	4045	4045	4045	
5°	4045	4030	3987	4018	4010	384
15°	3850	3827	3776	3792	3773	1084
25°	3485	3454	3388	3395	3388	1604
35°	3006	2968	2905	2882	2862	1877
45°	2447	2419	2361	2318	2303	1888
55°	1852	1828	1781	1735	1715	1655
65°	1249	1225	1186	1151	1132	1235
75°	653	646	626	603	611	697
85°	159	156	152	140	136	187
90°	0	0	0	0	0	

TEST NUMBER: P931171

CATALOG NUMBER: DFN2DS-SQ4F0-110DS950-FLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4044.8	4044.8	4044.8	4044.8	4044.8
2.5°	4068.2	4048.9	4005.9	4044.8	4037.3
5°	4044.8	4029.5	3986.6	4017.5	4010.1
7.5°	4017.5	3994.4	3951.5	3982.9	3975.0
10°	3975.0	3947.7	3901.1	3932.1	3920.5
12.5°	3916.5	3893.3	3846.7	3866.1	3858.2
15°	3850.4	3827.2	3776.5	3792.2	3772.8
17.5°	3768.7	3745.6	3694.9	3714.2	3694.9
20°	3679.2	3656.0	3601.6	3613.1	3597.9
22.5°	3590.1	3554.9	3504.2	3504.2	3496.3
25°	3484.8	3453.9	3387.8	3395.3	3387.8
27.5°	3368.0	3340.8	3290.4	3278.9	3259.5
30°	3251.7	3220.3	3162.1	3150.5	3134.8
32.5°	3127.0	3103.9	3041.6	3018.0	3002.4
35°	3006.5	2967.8	2905.4	2881.9	2862.5
37.5°	2870.3	2835.3	2773.0	2745.7	2726.3
40°	2730.5	2699.1	2636.8	2602.2	2586.5
42.5°	2594.3	2562.9	2501.0	2461.8	2438.8
45°	2446.6	2419.3	2360.7	2318.3	2302.6
47.5°	2302.6	2275.4	2213.0	2170.1	2146.9
50°	2150.7	2131.4	2076.8	2022.4	2003.0
52.5°	2003.0	1975.7	1925.4	1882.4	1855.2
55°	1851.5	1828.0	1781.4	1734.7	1715.4
57.5°	1699.7	1680.3	1629.6	1582.9	1567.2
60°	1547.8	1532.6	1478.1	1435.2	1423.6
62.5°	1400.1	1372.9	1334.1	1295.3	1279.6
65°	1248.6	1225.1	1186.4	1151.3	1131.9
67.5°	1093.1	1073.3	1038.6	1011.4	995.7
70°	949.1	933.4	898.3	871.1	855.8
72.5°	801.4	785.7	766.3	739.1	727.5
75°	653.2	645.8	626.0	602.9	610.8
77.5°	521.2	505.5	497.6	486.1	474.6
80°	389.2	385.0	377.1	365.6	357.8
82.5°	264.5	264.5	260.8	245.1	245.1
85°	159.3	155.5	151.9	139.9	136.2
87.5°	70.1	62.3	54.4	42.9	38.7
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P931171

CATALOG NUMBER: DFN2DS-SQ4F0-110DS950-FLL

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	14.91	16.52	15.27	16.83	17.15	14.46	16.07	14.83	16.39	16.70
	3H	16.66	18.11	17.03	18.44	18.80	16.17	17.62	16.54	17.95	18.31
	4H	17.30	18.67	17.70	19.02	19.40	16.81	18.18	17.21	18.53	18.90
	6H	17.77	19.04	18.18	19.41	19.80	17.27	18.54	17.68	18.90	19.30
	8H	17.92	19.13	18.34	19.52	19.91	17.41	18.62	17.84	19.01	19.41
	12H	18.01	19.17	18.44	19.55	19.98	17.49	18.65	17.92	19.04	19.46
4H	2H	15.47	16.84	15.87	17.18	17.56	15.11	16.48	15.51	16.83	17.21
	3H	17.44	18.59	17.85	18.99	19.39	17.04	18.18	17.45	18.58	18.98
	4H	18.22	19.25	18.65	19.67	20.10	17.80	18.83	18.23	19.24	19.68
	6H	18.82	19.72	19.27	20.16	20.62	18.38	19.29	18.84	19.73	20.18
	8H	19.00	19.85	19.47	20.29	20.76	18.57	19.41	19.03	19.86	20.32
	12H	19.14	19.90	19.62	20.37	20.84	18.68	19.44	19.16	19.92	20.39
8H	4H	18.49	19.34	18.95	19.78	20.25	18.12	18.96	18.58	19.41	19.87
	6H	19.21	19.91	19.70	20.40	20.87	18.83	19.53	19.32	20.02	20.49
	8H	19.47	20.10	19.98	20.60	21.09	19.07	19.70	19.58	20.21	20.70
	12H	19.67	20.22	20.17	20.71	21.28	19.25	19.81	19.76	20.30	20.86
12H	4H	18.52	19.28	19.00	19.75	20.22	18.15	18.91	18.63	19.39	19.86
	6H	19.25	19.88	19.76	20.39	20.88	18.88	19.52	19.39	20.02	20.51
	8H	19.57	20.12	20.07	20.61	21.18	19.19	19.75	19.69	20.24	20.80