

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: P931180

Luminaire Tested: DFN2DS-SQ4F0-120DS850-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931180
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-SQ4F0-120DS850-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

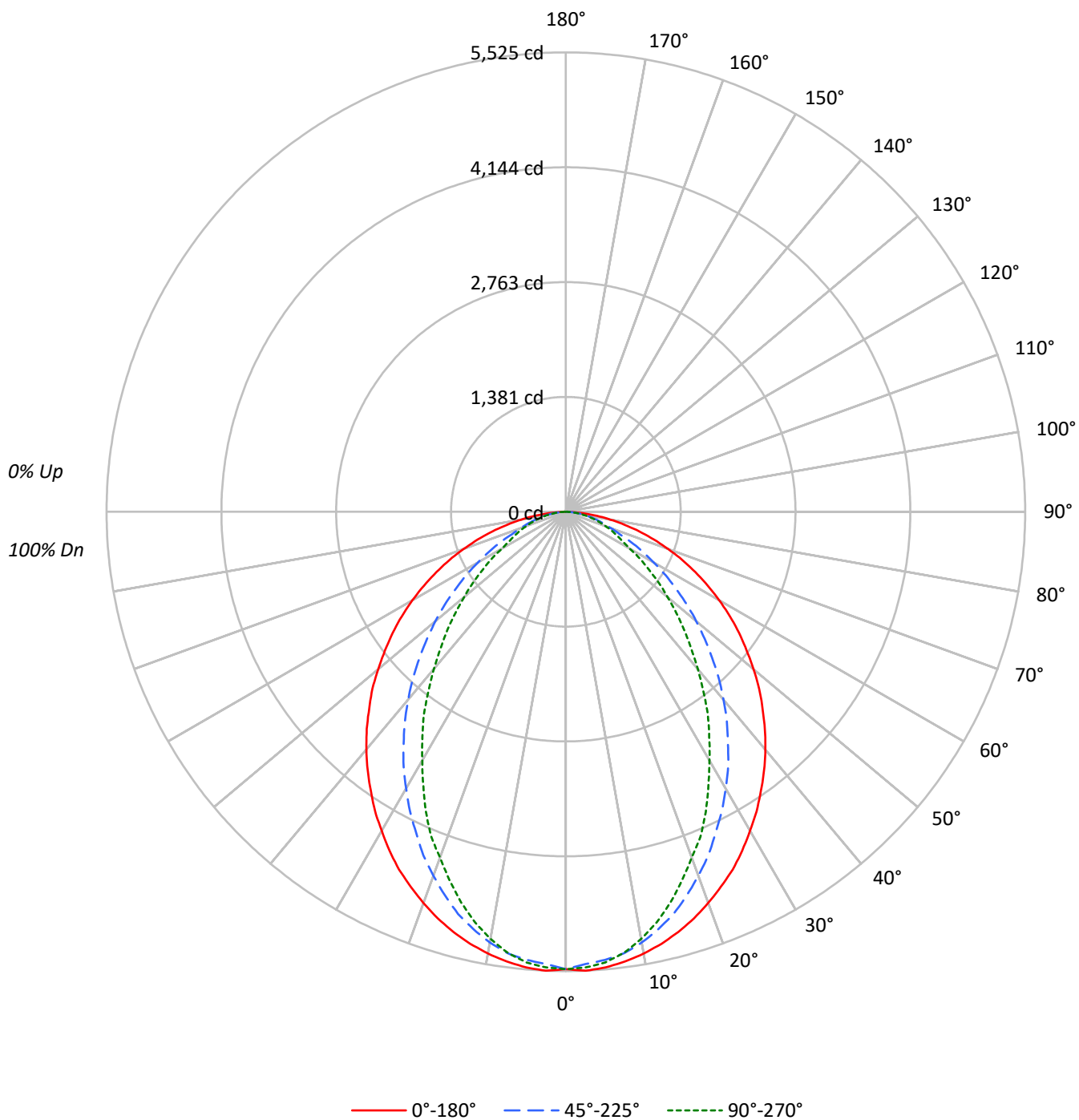
Lumens per Lamp: N/A
Luminaire Lumens: 11311.8 lumens
Efficiency: N/A
Efficacy: 90.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 125.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P931180

CATALOG NUMBER: DFN2DS-SQ4F0-120DS850-RLL

Luminous Intensity Polar Plot



TEST NUMBER: P931180

CATALOG NUMBER: DFN2DS-SQ4F0-120DS850-RLL

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°	3859	3859	3859
5°	3874	3811	3832
10°	3844	3749	3717
15°	3800	3638	3533
20°	3739	3479	3304
25°	3677	3299	3083
30°	3589	3113	2799
35°	3505	2912	2549
40°	3419	2704	2261
45°	3319	2470	2000
50°	3217	2233	1745
55°	3111	1979	1498
60°	2990	1711	1244
65°	2851	1438	1132
70°	2686	1184	1041
75°	2483	1080	972
80°	2192	965	885
85°	1722	761	761

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3319 cd/sqm

TEST NUMBER: P931180

CATALOG NUMBER: DFN2DS-SQ4F0-120DS850-RLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	515.5	4.6
10°-20°	1415.1	12.5
20°-30°	1986.8	17.6
30°-40°	2165.7	19.1
40°-50°	1990.5	17.6
50°-60°	1563.2	13.8
60°-70°	1017.5	9.0
70°-80°	523.8	4.6
80°-90°	133.7	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°	3917.3	34.6
0°-40°	6083.0	53.8
0°-60°	9636.8	85.2
0°-90°	11311.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11311.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5500	5500	5500	5500	5500	
5°	5500	5475	5410	5455	5440	522
15°	5231	5176	5008	4913	4863	1474
25°	4749	4589	4261	4057	3982	2184
35°	4092	3838	3400	3086	2976	2561
45°	3345	3011	2489	2135	2016	2583
55°	2543	2155	1618	1319	1225	2273
65°	1717	1314	866	697	682	1703
75°	916	567	398	363	358	969
85°	214	109	94	94	94	256
90°	0	0	0	0	0	

TEST NUMBER: P931180

CATALOG NUMBER: DFN2DS-SQ4F0-120DS850-RLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5500.2	5500.2	5500.2	5500.2	5500.2
2.5°	5525.0	5500.2	5445.3	5495.4	5485.3
5°	5500.2	5475.4	5410.4	5455.3	5440.5
7.5°	5455.3	5425.7	5356.0	5375.5	5350.7
10°	5395.6	5360.8	5261.4	5246.1	5216.6
12.5°	5321.1	5276.3	5141.5	5112.0	5057.2
15°	5231.4	5176.5	5007.5	4912.9	4863.3
17.5°	5126.8	5047.1	4837.9	4728.7	4648.9
20°	5007.5	4907.7	4658.9	4534.8	4424.9
22.5°	4878.0	4763.5	4474.6	4305.6	4231.2
25°	4748.7	4589.2	4260.7	4056.8	3981.9
27.5°	4594.5	4424.9	4061.6	3827.7	3713.0
30°	4430.2	4240.7	3842.5	3588.9	3454.3
32.5°	4270.8	4041.5	3633.9	3335.0	3210.3
35°	4091.8	3837.7	3399.9	3086.2	2976.3
37.5°	3917.4	3643.4	3180.7	2836.9	2712.8
40°	3733.1	3434.8	2951.6	2598.3	2468.9
42.5°	3544.0	3225.6	2722.9	2354.3	2230.2
45°	3345.0	3011.3	2488.9	2135.2	2015.7
47.5°	3155.9	2802.7	2265.0	1911.3	1801.9
50°	2946.8	2593.5	2045.9	1702.1	1598.1
52.5°	2742.4	2369.0	1836.7	1508.2	1413.8
55°	2543.4	2155.2	1617.6	1319.2	1224.7
57.5°	2339.4	1941.3	1423.7	1144.9	1065.2
60°	2130.4	1732.1	1219.3	965.9	886.2
62.5°	1926.6	1528.3	1045.1	806.5	766.8
65°	1717.4	1313.9	866.1	697.1	681.8
67.5°	1518.3	1114.8	697.1	612.1	597.3
70°	1309.2	921.0	577.2	527.6	507.5
72.5°	1110.1	741.5	482.6	443.0	433.1
75°	915.7	567.1	398.2	363.3	358.5
77.5°	722.0	402.9	313.7	293.7	283.6
80°	542.4	288.9	238.7	219.1	219.1
82.5°	378.2	194.3	164.2	154.2	154.2
85°	213.9	109.3	94.5	94.5	94.5
87.5°	79.7	39.6	39.6	34.8	34.8
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P931180

CATALOG NUMBER: DFN2DS-SQ4F0-120DS850-RLL

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	15.93	17.45	16.29	17.76	18.08	11.89	13.41	12.25	13.72	14.04
	3H	17.69	19.06	18.07	19.39	19.75	13.15	14.52	13.53	14.85	15.21
	4H	18.36	19.64	18.76	19.99	20.37	13.65	14.93	14.05	15.28	15.66
	6H	18.85	20.03	19.26	20.40	20.79	14.03	15.22	14.45	15.58	15.98
	8H	19.01	20.14	19.44	20.53	20.93	14.16	15.29	14.59	15.68	16.08
	12H	19.12	20.19	19.55	20.58	21.01	14.24	15.32	14.67	15.70	16.13
4H	2H	16.03	17.31	16.43	17.66	18.04	12.58	13.86	12.98	14.21	14.59
	3H	17.96	19.03	18.37	19.43	19.83	14.03	15.09	14.44	15.49	15.89
	4H	18.71	19.67	19.15	20.09	20.52	14.63	15.58	15.06	16.00	16.44
	6H	19.31	20.14	19.76	20.58	21.04	15.11	15.95	15.57	16.39	16.85
	8H	19.52	20.30	19.98	20.74	21.21	15.28	16.05	15.74	16.50	16.96
	12H	19.67	20.37	20.16	20.85	21.32	15.39	16.09	15.87	16.57	17.04
8H	4H	18.74	19.51	19.20	19.96	20.43	14.98	15.76	15.44	16.20	16.67
	6H	19.38	20.02	19.87	20.51	20.99	15.57	16.21	16.06	16.70	17.18
	8H	19.63	20.20	20.14	20.71	21.20	15.79	16.36	16.30	16.87	17.36
	12H	19.83	20.34	20.34	20.83	21.40	15.97	16.48	16.48	16.97	17.53
12H	4H	18.72	19.42	19.20	19.89	20.37	15.02	15.72	15.50	16.20	16.67
	6H	19.36	19.93	19.87	20.44	20.93	15.63	16.21	16.14	16.72	17.20
	8H	19.64	20.15	20.15	20.64	21.21	15.90	16.41	16.41	16.90	17.47