

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: P931156

Luminaire Tested: DFN2DS-SQ4F0-110DS830-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931156
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-SQ4F0-110DS830-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

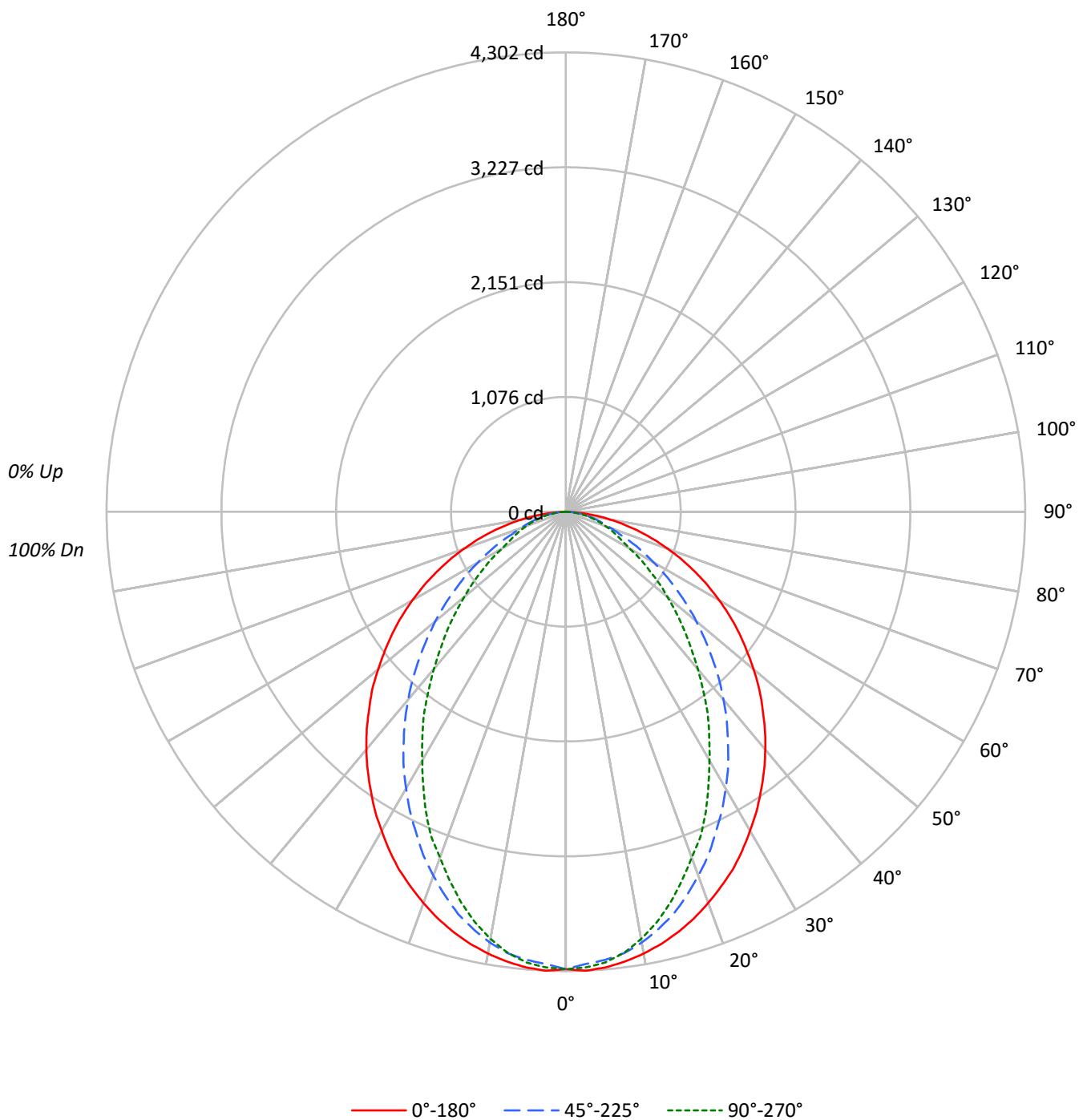
Lumens per Lamp: N/A
Luminaire Lumens: 8807.7 lumens
Efficiency: N/A
Efficacy: 77.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 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

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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	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°	3005	3005	3005
5°	3016	2967	2984
10°	2993	2919	2894
15°	2959	2832	2751
20°	2911	2709	2573
25°	2863	2568	2400
30°	2795	2424	2179
35°	2729	2268	1985
40°	2662	2105	1761
45°	2584	1923	1558
50°	2505	1739	1358
55°	2423	1541	1167
60°	2328	1332	968
65°	2220	1120	881
70°	2091	922	811
75°	1933	840	757
80°	1706	751	690
85°	1340	593	593

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2584 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	401.4	4.6
10°-20°	1101.8	12.5
20°-30°	1546.9	17.6
30°-40°	1686.3	19.1
40°-50°	1549.9	17.6
50°-60°	1217.2	13.8
60°-70°	792.3	9.0
70°-80°	407.8	4.6
80°-90°	104.1	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°	3050.2	34.6
0°-40°	4736.4	53.8
0°-60°	7503.5	85.2
0°-90°	8807.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8807.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4283	4283	4283	4283	4283	
5°	4283	4263	4213	4248	4236	406
15°	4073	4030	3899	3825	3787	1148
25°	3697	3573	3318	3159	3100	1700
35°	3186	2988	2647	2403	2318	1994
45°	2604	2345	1938	1662	1570	2011
55°	1980	1678	1260	1027	954	1770
65°	1337	1023	674	543	531	1326
75°	713	442	310	283	279	754
85°	166	85	74	74	74	200
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4282.6	4282.6	4282.6	4282.6	4282.6
2.5°	4301.9	4282.6	4239.8	4278.9	4271.1
5°	4282.6	4263.3	4212.7	4247.7	4236.2
7.5°	4247.7	4224.6	4170.3	4185.6	4166.2
10°	4201.2	4174.0	4096.8	4084.8	4061.8
12.5°	4143.2	4108.3	4003.4	3980.3	3937.6
15°	4073.3	4030.5	3898.9	3825.4	3786.7
17.5°	3991.9	3929.8	3767.0	3681.8	3619.7
20°	3898.9	3821.2	3627.5	3530.9	3445.4
22.5°	3798.2	3708.9	3484.1	3352.5	3294.5
25°	3697.4	3573.3	3317.5	3158.8	3100.4
27.5°	3577.4	3445.4	3162.5	2980.3	2891.1
30°	3449.5	3301.9	2991.9	2794.4	2689.6
32.5°	3325.4	3146.8	2829.4	2596.7	2499.7
35°	3185.9	2988.1	2647.3	2403.0	2317.5
37.5°	3050.3	2836.8	2476.6	2208.9	2112.3
40°	2906.7	2674.4	2298.2	2023.0	1922.3
42.5°	2759.5	2511.6	2120.2	1833.1	1736.5
45°	2604.5	2344.6	1938.0	1662.4	1569.6
47.5°	2457.3	2182.2	1763.6	1488.1	1403.0
50°	2294.4	2019.4	1593.0	1325.3	1244.3
52.5°	2135.3	1844.6	1430.1	1174.4	1100.7
55°	1980.3	1678.1	1259.5	1027.2	953.6
57.5°	1821.6	1511.5	1108.5	891.5	829.3
60°	1658.8	1348.8	949.4	752.1	690.0
62.5°	1500.0	1190.0	813.8	627.9	597.0
65°	1337.2	1023.0	674.4	542.8	530.8
67.5°	1182.2	868.1	542.8	476.6	465.1
70°	1019.3	717.1	449.4	410.8	395.2
72.5°	864.3	577.4	375.9	345.0	337.1
75°	713.0	441.6	310.0	282.9	279.2
77.5°	562.1	313.8	244.3	228.6	220.8
80°	422.3	224.9	185.9	170.7	170.7
82.5°	294.4	151.3	127.9	120.1	120.1
85°	166.5	85.2	73.6	73.6	73.6
87.5°	62.1	30.8	30.8	27.1	27.1
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	15.06	16.58	15.42	16.89	17.21	11.02	12.54	11.38	12.85	13.17
	3H	16.82	18.19	17.20	18.52	18.88	12.28	13.65	12.66	13.98	14.34
	4H	17.49	18.77	17.89	19.12	19.50	12.79	14.07	13.18	14.41	14.79
	6H	17.98	19.16	18.39	19.53	19.92	13.17	14.35	13.58	14.72	15.11
	8H	18.14	19.27	18.57	19.66	20.06	13.29	14.42	13.72	14.81	15.21
	12H	18.25	19.32	18.68	19.71	20.14	13.37	14.45	13.80	14.83	15.26
4H	2H	15.16	16.44	15.56	16.79	17.17	11.71	12.99	12.11	13.34	13.72
	3H	17.09	18.16	17.51	18.56	18.96	13.16	14.22	13.57	14.62	15.02
	4H	17.84	18.80	18.28	19.22	19.65	13.76	14.71	14.19	15.13	15.57
	6H	18.44	19.27	18.89	19.71	20.17	14.24	15.08	14.70	15.52	15.98
	8H	18.65	19.43	19.11	19.87	20.34	14.41	15.18	14.87	15.63	16.10
	12H	18.80	19.50	19.29	19.98	20.45	14.52	15.22	15.01	15.70	16.17
8H	4H	17.87	18.65	18.33	19.09	19.56	14.11	14.89	14.57	15.33	15.80
	6H	18.51	19.15	19.00	19.64	20.12	14.70	15.34	15.19	15.83	16.31
	8H	18.76	19.33	19.27	19.84	20.33	14.92	15.49	15.43	16.00	16.49
	12H	18.96	19.47	19.47	19.96	20.53	15.10	15.61	15.61	16.10	16.66
12H	4H	17.85	18.55	18.33	19.03	19.50	14.15	14.85	14.64	15.33	15.80
	6H	18.49	19.06	19.00	19.57	20.06	14.76	15.34	15.27	15.85	16.34
	8H	18.77	19.28	19.28	19.77	20.34	15.03	15.54	15.54	16.04	16.60