

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: P931130

Luminaire Tested: DFN2DS-SQ4F0-090DS930-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931130
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-SQ4F0-090DS930-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

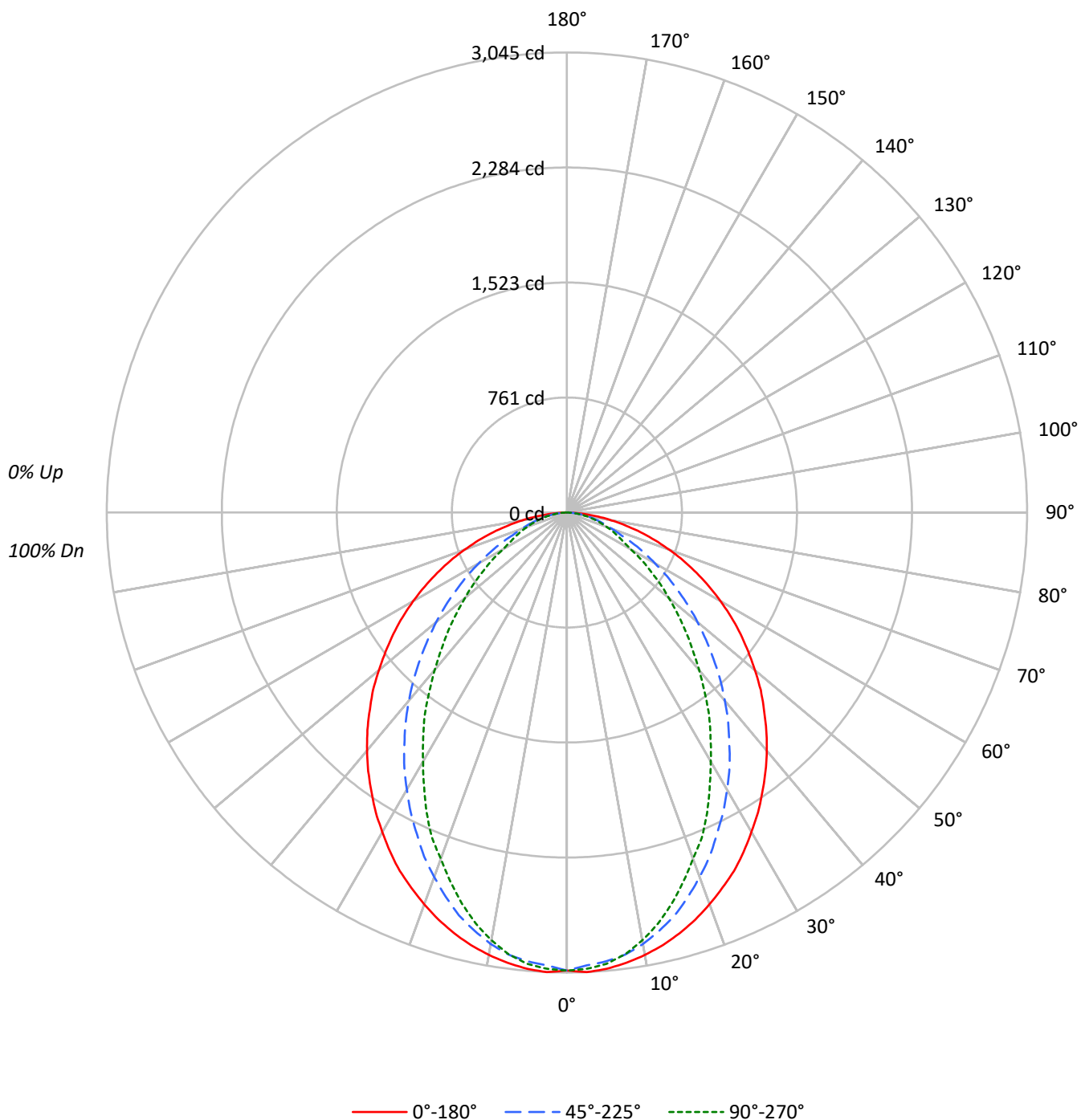
Lumens per Lamp: N/A
Luminaire Lumens: 6234.7 lumens
Efficiency: N/A
Efficacy: 68.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 90.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86		
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74		
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	64		
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	55		
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49		
6	74	61	53	47	72	60	52	46	58	51	46	57	50	46	55	50	45	43		
7	68	56	47	42	67	55	47	42	53	46	41	52	46	41	51	45	41	39		
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35		
9	60	47	39	34	59	47	39	34	46	39	34	44	38	34	44	38	34	32		
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2127	2127	2127
5°	2135	2100	2112
10°	2119	2066	2049
15°	2095	2005	1947
20°	2061	1917	1821
25°	2026	1818	1699
30°	1978	1716	1543
35°	1932	1605	1405
40°	1885	1490	1246
45°	1830	1361	1102
50°	1773	1231	961
55°	1715	1091	826
60°	1648	943	685
65°	1571	792	624
70°	1480	653	574
75°	1368	595	536
80°	1208	531	488
85°	948	419	419

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1830 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	284.1	4.6
10°-20°	780.0	12.5
20°-30°	1095.0	17.6
30°-40°	1193.7	19.1
40°-50°	1097.1	17.6
50°-60°	861.6	13.8
60°-70°	560.8	9.0
70°-80°	288.7	4.6
80°-90°	73.7	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°	2159.1	34.6
0°-40°	3352.8	53.8
0°-60°	5311.5	85.2
0°-90°	6234.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6234.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3032	3032	3032	3032	3032	
5°	3032	3018	2982	3007	2999	287
15°	2883	2853	2760	2708	2680	813
25°	2617	2529	2348	2236	2195	1204
35°	2255	2115	1874	1701	1640	1412
45°	1844	1660	1372	1177	1111	1424
55°	1402	1188	892	727	675	1253
65°	946	724	477	384	376	938
75°	505	313	220	200	198	534
85°	118	60	52	52	52	141
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3031.6	3031.6	3031.6	3031.6	3031.6
2.5°	3045.2	3031.6	3001.2	3028.9	3023.4
5°	3031.6	3017.9	2982.1	3006.8	2998.6
7.5°	3006.8	2990.5	2952.1	2962.9	2949.2
10°	2973.9	2954.7	2900.0	2891.5	2875.2
12.5°	2932.9	2908.2	2833.9	2817.6	2787.3
15°	2883.4	2853.2	2760.0	2707.8	2680.5
17.5°	2825.8	2781.8	2666.5	2606.3	2562.4
20°	2760.0	2705.0	2567.8	2499.4	2438.9
22.5°	2688.7	2625.5	2466.3	2373.1	2332.1
25°	2617.4	2529.4	2348.4	2236.0	2194.7
27.5°	2532.4	2438.9	2238.6	2109.7	2046.5
30°	2441.8	2337.3	2117.9	1978.2	1903.9
32.5°	2353.9	2227.6	2002.9	1838.2	1769.4
35°	2255.3	2115.3	1873.9	1701.1	1640.5
37.5°	2159.2	2008.2	1753.1	1563.7	1495.3
40°	2057.6	1893.2	1626.8	1432.1	1360.8
42.5°	1953.4	1777.9	1500.7	1297.6	1229.2
45°	1843.7	1659.7	1371.8	1176.8	1111.0
47.5°	1739.5	1544.8	1248.4	1053.4	993.2
50°	1624.2	1429.4	1127.6	938.1	880.8
52.5°	1511.6	1305.8	1012.4	831.3	779.2
55°	1401.8	1187.9	891.5	727.1	675.0
57.5°	1289.5	1070.0	784.8	631.1	587.1
60°	1174.2	954.7	672.1	532.4	488.4
62.5°	1061.9	842.4	576.0	444.5	422.7
65°	946.5	724.2	477.3	384.2	375.8
67.5°	836.8	614.4	384.2	337.3	329.2
70°	721.6	507.7	318.2	290.8	279.7
72.5°	611.8	408.6	266.0	244.2	238.7
75°	504.7	312.6	219.5	200.2	197.6
77.5°	397.9	222.1	172.9	161.9	156.3
80°	298.9	159.3	131.5	120.8	120.8
82.5°	208.4	107.1	90.5	85.0	85.0
85°	117.8	60.2	52.1	52.1	52.1
87.5°	43.9	21.8	21.8	19.2	19.2
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	13.86	15.38	14.22	15.69	16.01	9.82	11.34	10.18	11.65	11.97
	3H	15.62	16.99	16.00	17.32	17.68	11.08	12.45	11.46	12.78	13.14
	4H	16.29	17.57	16.69	17.92	18.30	11.58	12.87	11.98	13.21	13.59
	6H	16.78	17.96	17.19	18.33	18.72	11.97	13.15	12.38	13.51	13.91
	8H	16.94	18.07	17.37	18.46	18.86	12.09	13.22	12.52	13.61	14.01
	12H	17.05	18.12	17.48	18.51	18.94	12.17	13.25	12.60	13.63	14.06
4H	2H	13.96	15.24	14.36	15.59	15.97	10.51	11.79	10.91	12.14	12.52
	3H	15.89	16.96	16.31	17.36	17.76	11.96	13.02	12.37	13.42	13.82
	4H	16.64	17.60	17.08	18.02	18.45	12.56	13.51	12.99	13.93	14.37
	6H	17.24	18.07	17.69	18.51	18.97	13.04	13.88	13.50	14.32	14.78
	8H	17.45	18.23	17.91	18.67	19.14	13.21	13.98	13.67	14.43	14.89
	12H	17.60	18.30	18.09	18.78	19.25	13.32	14.02	13.81	14.50	14.97
8H	4H	16.67	17.45	17.13	17.89	18.36	12.91	13.69	13.37	14.13	14.60
	6H	17.31	17.95	17.80	18.44	18.92	13.50	14.14	13.99	14.63	15.11
	8H	17.56	18.13	18.07	18.64	19.13	13.72	14.29	14.23	14.80	15.29
	12H	17.76	18.27	18.27	18.76	19.33	13.90	14.41	14.41	14.90	15.46
12H	4H	16.65	17.35	17.13	17.83	18.30	12.95	13.65	13.43	14.13	14.60
	6H	17.29	17.86	17.80	18.37	18.86	13.56	14.14	14.07	14.65	15.13
	8H	17.57	18.08	18.08	18.57	19.14	13.83	14.34	14.34	14.83	15.40