

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: P931133

Luminaire Tested: DFN2DS-SQ4F0-090DS940-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931133
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-SQ4F0-090DS940-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

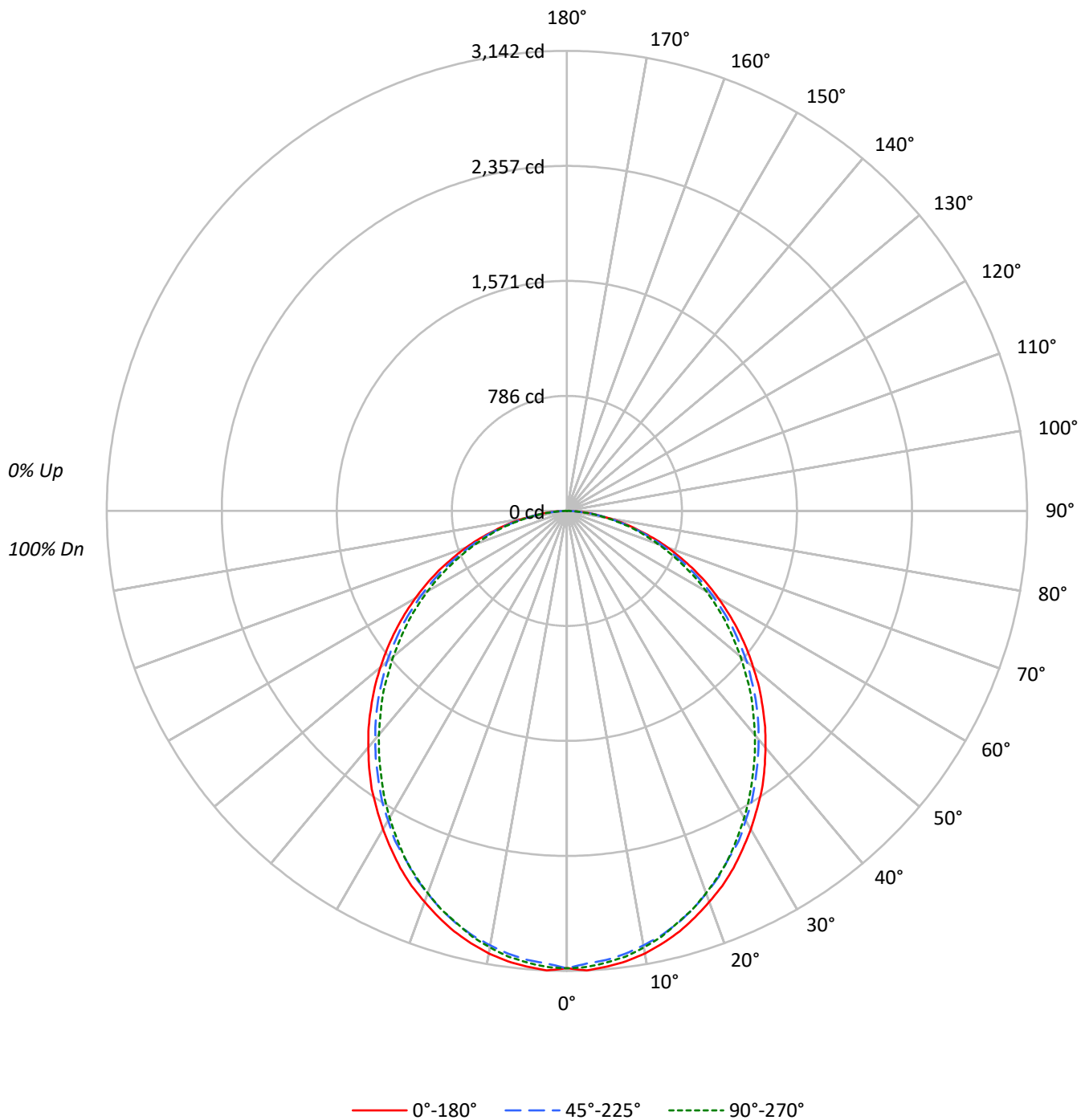
Lumens per Lamp: N/A
Luminaire Lumens: 7947.7 lumens
Efficiency: N/A
Efficacy: 87.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 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

TEST NUMBER: P931133

CATALOG NUMBER: DFN2DS-SQ4F0-090DS940-FLL

Luminous Intensity Polar Plot



TEST NUMBER: P931133

CATALOG NUMBER: DFN2DS-SQ4F0-090DS940-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°	2192	2192	2192
5°	2200	2169	2181
10°	2187	2147	2157
15°	2160	2119	2117
20°	2122	2077	2075
25°	2084	2026	2026
30°	2035	1979	1962
35°	1989	1922	1894
40°	1932	1865	1830
45°	1875	1809	1765
50°	1813	1751	1689
55°	1749	1683	1621
60°	1678	1602	1543
65°	1601	1521	1451
70°	1504	1423	1356
75°	1368	1311	1279
80°	1214	1177	1116
85°	990	944	847

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1875 cd/sqm

TEST NUMBER: P931133

CATALOG NUMBER: DFN2DS-SQ4F0-090DS940-FLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	294.0	3.7
10°-20°	827.2	10.4
20°-30°	1215.7	15.3
30°-40°	1412.0	17.8
40°-50°	1410.2	17.7
50°-60°	1229.7	15.5
60°-70°	909.0	11.4
70°-80°	514.3	6.5
80°-90°	135.7	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°	2336.9	29.4
0°-40°	3748.9	47.2
0°-60°	6388.7	80.4
0°-90°	7947.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7947.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3124	3124	3124	3124	3124	
5°	3124	3112	3079	3103	3097	297
15°	2974	2956	2917	2929	2914	837
25°	2691	2667	2616	2622	2616	1238
35°	2322	2292	2244	2226	2211	1450
45°	1889	1868	1823	1790	1778	1458
55°	1430	1412	1376	1340	1325	1278
65°	964	946	916	889	874	953
75°	504	499	484	466	472	539
85°	123	120	117	108	105	145
90°	0	0	0	0	0	

TEST NUMBER: P931133

CATALOG NUMBER: DFN2DS-SQ4F0-090DS940-FLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3123.7	3123.7	3123.7	3123.7	3123.7
2.5°	3141.9	3126.9	3093.8	3123.7	3118.0
5°	3123.7	3111.9	3078.8	3102.7	3096.9
7.5°	3102.7	3084.9	3051.7	3076.0	3069.9
10°	3069.9	3048.9	3012.8	3036.7	3027.8
12.5°	3024.6	3006.8	2970.8	2985.7	2979.7
15°	2973.7	2955.8	2916.6	2928.7	2913.7
17.5°	2910.5	2892.7	2853.5	2868.5	2853.5
20°	2841.4	2823.5	2781.4	2790.4	2778.6
22.5°	2772.5	2745.5	2706.2	2706.2	2700.2
25°	2691.3	2667.3	2616.4	2622.1	2616.4
27.5°	2601.1	2580.0	2541.2	2532.3	2517.3
30°	2511.2	2487.0	2442.0	2433.1	2421.1
32.5°	2415.0	2397.2	2349.0	2330.9	2318.8
35°	2322.0	2292.0	2243.8	2225.7	2210.7
37.5°	2216.8	2189.7	2141.5	2120.6	2105.6
40°	2108.7	2084.5	2036.3	2009.6	1997.5
42.5°	2003.5	1979.3	1931.5	1901.3	1883.5
45°	1889.4	1868.5	1823.2	1790.3	1778.3
47.5°	1778.3	1757.2	1709.1	1676.0	1658.1
50°	1661.0	1646.0	1603.9	1561.9	1546.9
52.5°	1546.9	1525.9	1487.0	1453.9	1432.8
55°	1430.0	1411.8	1375.7	1339.8	1324.8
57.5°	1312.7	1297.7	1258.5	1222.5	1210.4
60°	1195.4	1183.6	1141.5	1108.4	1099.5
62.5°	1081.3	1060.2	1030.3	1000.4	988.2
65°	964.3	946.1	916.2	889.1	874.2
67.5°	844.2	828.9	802.1	781.1	769.0
70°	733.0	720.8	693.8	672.7	661.0
72.5°	618.9	606.7	591.8	570.8	561.9
75°	504.5	498.7	483.5	465.6	471.7
77.5°	402.5	390.4	384.4	375.4	366.5
80°	300.5	297.3	291.2	282.3	276.3
82.5°	204.3	204.3	201.4	189.3	189.3
85°	123.0	120.2	117.3	108.0	105.2
87.5°	54.1	48.1	42.1	33.2	30.0
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P931133

CATALOG NUMBER: DFN2DS-SQ4F0-090DS940-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	14.01	15.62	14.37	15.93	16.25	13.56	15.18	13.93	15.49	15.80
	3H	15.76	17.21	16.14	17.54	17.90	15.27	16.72	15.65	17.05	17.41
	4H	16.41	17.77	16.80	18.12	18.50	15.91	17.28	16.31	17.63	18.00
	6H	16.87	18.14	17.29	18.51	18.90	16.37	17.64	16.78	18.01	18.40
	8H	17.02	18.23	17.44	18.62	19.02	16.51	17.73	16.94	18.11	18.51
	12H	17.11	18.27	17.54	18.65	19.08	16.60	17.76	17.03	18.14	18.57
4H	2H	14.57	15.94	14.97	16.29	16.66	14.22	15.59	14.62	15.93	16.31
	3H	16.54	17.69	16.95	18.09	18.49	16.14	17.28	16.55	17.68	18.08
	4H	17.32	18.36	17.75	18.77	19.21	16.90	17.93	17.33	18.35	18.78
	6H	17.92	18.82	18.37	19.26	19.72	17.49	18.39	17.94	18.83	19.29
	8H	18.11	18.95	18.57	19.40	19.86	17.67	18.52	18.13	18.96	19.42
	12H	18.24	19.00	18.72	19.47	19.94	17.79	18.55	18.27	19.02	19.49
8H	4H	17.59	18.44	18.06	18.88	19.35	17.22	18.07	17.68	18.51	18.97
	6H	18.31	19.01	18.80	19.50	19.98	17.93	18.63	18.42	19.12	19.59
	8H	18.57	19.20	19.08	19.71	20.19	18.18	18.81	18.69	19.31	19.80
	12H	18.77	19.33	19.27	19.82	20.38	18.35	18.91	18.86	19.40	19.96
12H	4H	17.62	18.38	18.10	18.86	19.33	17.26	18.02	17.74	18.49	18.96
	6H	18.35	18.99	18.86	19.49	19.98	17.99	18.62	18.50	19.12	19.61
	8H	18.67	19.23	19.17	19.72	20.28	18.29	18.85	18.80	19.34	19.90