

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: P931080

Luminaire Tested: DFN2DS-SQ4F0-060DS940-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931080
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-SQ4F0-060DS940-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

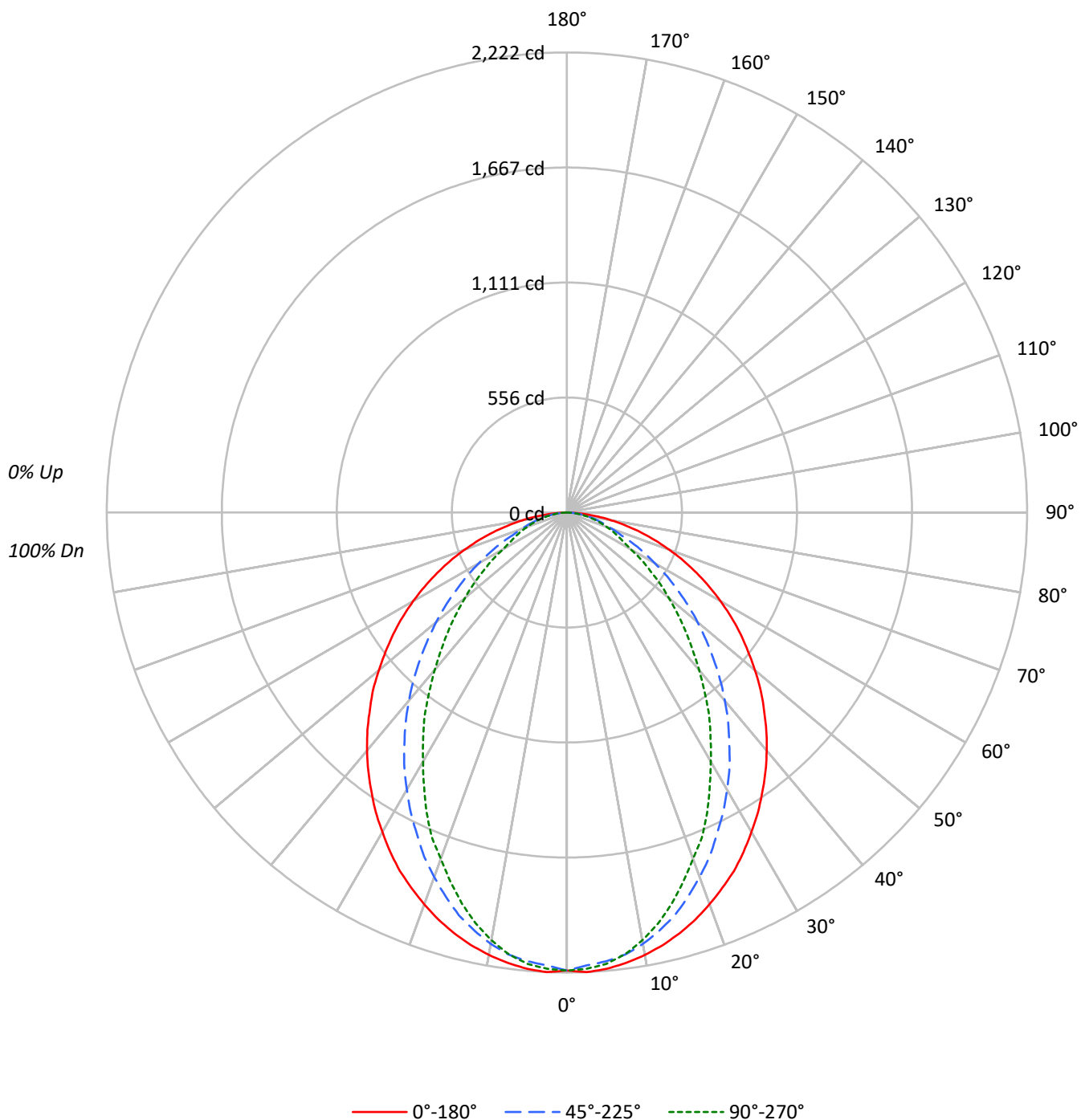
Lumens per Lamp: N/A
Luminaire Lumens: 4549.2 lumens
Efficiency: N/A
Efficacy: 78.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 57.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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°	1552	1552	1552
5°	1558	1533	1541
10°	1546	1508	1495
15°	1528	1463	1421
20°	1504	1399	1329
25°	1479	1327	1240
30°	1444	1252	1126
35°	1410	1171	1025
40°	1375	1087	909
45°	1335	993	804
50°	1294	898	702
55°	1251	796	602
60°	1202	688	500
65°	1147	578	455
70°	1080	476	419
75°	998	434	391
80°	881	388	356
85°	692	306	306

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1335 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.3	4.6
10°-20°	569.1	12.5
20°-30°	799.0	17.6
30°-40°	871.0	19.1
40°-50°	800.5	17.6
50°-60°	628.7	13.8
60°-70°	409.2	9.0
70°-80°	210.6	4.6
80°-90°	53.8	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°	1575.4	34.6
0°-40°	2446.4	53.8
0°-60°	3875.6	85.2
0°-90°	4549.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4549.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2212	2212	2212	2212	2212	
5°	2212	2202	2176	2194	2188	210
15°	2104	2082	2014	1976	1956	593
25°	1910	1846	1714	1632	1601	878
35°	1646	1543	1367	1241	1197	1030
45°	1345	1211	1001	859	811	1039
55°	1023	867	650	531	492	914
65°	691	528	348	280	274	685
75°	368	228	160	146	144	390
85°	86	44	38	38	38	103
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2212.0	2212.0	2212.0	2212.0	2212.0
2.5°	2222.0	2212.0	2189.9	2210.0	2206.0
5°	2212.0	2202.0	2175.9	2194.0	2188.0
7.5°	2194.0	2182.0	2154.0	2161.9	2151.9
10°	2169.9	2155.9	2116.0	2109.8	2097.9
12.5°	2140.0	2121.9	2067.7	2055.9	2033.8
15°	2103.9	2081.7	2013.8	1975.8	1955.8
17.5°	2061.9	2029.7	1945.6	1901.7	1869.6
20°	2013.8	1973.6	1873.6	1823.7	1779.5
22.5°	1961.8	1915.7	1799.5	1731.6	1701.6
25°	1909.8	1845.6	1713.5	1631.6	1601.4
27.5°	1847.8	1779.5	1633.4	1539.3	1493.3
30°	1781.7	1705.4	1545.3	1443.3	1389.2
32.5°	1717.5	1625.4	1461.5	1341.2	1291.1
35°	1645.6	1543.4	1367.3	1241.1	1197.0
37.5°	1575.5	1465.2	1279.2	1141.0	1091.0
40°	1501.3	1381.4	1187.0	1044.9	992.9
42.5°	1425.3	1297.2	1095.0	946.8	896.9
45°	1345.2	1211.0	1001.0	858.6	810.6
47.5°	1269.2	1127.1	910.9	768.6	724.7
50°	1185.1	1043.0	822.8	684.5	642.7
52.5°	1102.9	952.7	738.7	606.6	568.6
55°	1022.9	866.8	650.5	530.6	492.5
57.5°	940.9	780.7	572.6	460.5	428.3
60°	856.8	696.7	490.4	388.5	356.4
62.5°	774.8	614.7	420.3	324.3	308.4
65°	690.7	528.4	348.3	280.4	274.2
67.5°	610.6	448.3	280.4	246.2	240.2
70°	526.5	370.4	232.1	212.2	204.1
72.5°	446.4	298.2	194.1	178.2	174.1
75°	368.3	228.1	160.1	146.1	144.2
77.5°	290.3	162.1	126.1	118.1	114.1
80°	218.1	116.1	96.0	88.1	88.1
82.5°	152.1	78.1	66.0	62.0	62.0
85°	86.0	44.0	38.0	38.0	38.0
87.5°	32.1	16.0	16.0	14.0	14.0
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	12.76	14.28	13.13	14.60	14.91	8.72	10.24	9.09	10.56	10.87
	3H	14.53	15.89	14.91	16.22	16.58	9.99	11.35	10.37	11.68	12.04
	4H	15.19	16.47	15.59	16.82	17.20	10.49	11.77	10.89	12.12	12.50
	6H	15.68	16.87	16.09	17.23	17.62	10.87	12.05	11.28	12.42	12.81
	8H	15.85	16.97	16.27	17.36	17.76	11.00	12.12	11.42	12.51	12.91
	12H	15.95	17.03	16.38	17.41	17.84	11.08	12.15	11.51	12.54	12.97
4H	2H	12.87	14.15	13.27	14.50	14.87	9.42	10.70	9.82	11.05	11.43
	3H	14.80	15.86	15.21	16.26	16.66	10.86	11.92	11.27	12.32	12.73
	4H	15.55	16.51	15.98	16.92	17.36	11.46	12.42	11.89	12.83	13.27
	6H	16.14	16.97	16.60	17.41	17.87	11.95	12.78	12.41	13.22	13.68
	8H	16.35	17.13	16.82	17.58	18.04	12.11	12.89	12.57	13.33	13.80
	12H	16.51	17.20	16.99	17.68	18.15	12.23	12.92	12.71	13.40	13.87
8H	4H	15.57	16.35	16.04	16.79	17.26	11.81	12.59	12.28	13.04	13.50
	6H	16.21	16.85	16.71	17.34	17.82	12.40	13.04	12.90	13.53	14.01
	8H	16.46	17.04	16.97	17.55	18.03	12.62	13.20	13.14	13.71	14.20
	12H	16.66	17.17	17.17	17.67	18.23	12.80	13.31	13.31	13.80	14.37
12H	4H	15.56	16.25	16.04	16.73	17.20	11.86	12.55	12.34	13.03	13.50
	6H	16.19	16.77	16.70	17.28	17.77	12.46	13.04	12.98	13.55	14.04
	8H	16.48	16.99	16.98	17.48	18.04	12.74	13.25	13.25	13.74	14.30