

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: P922824

Luminaire Tested: DFN2DIP-SQ3F0-070D060US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922824
REPORT IS A COMBINATION OF REPORTS P899903 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-070D060US940-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

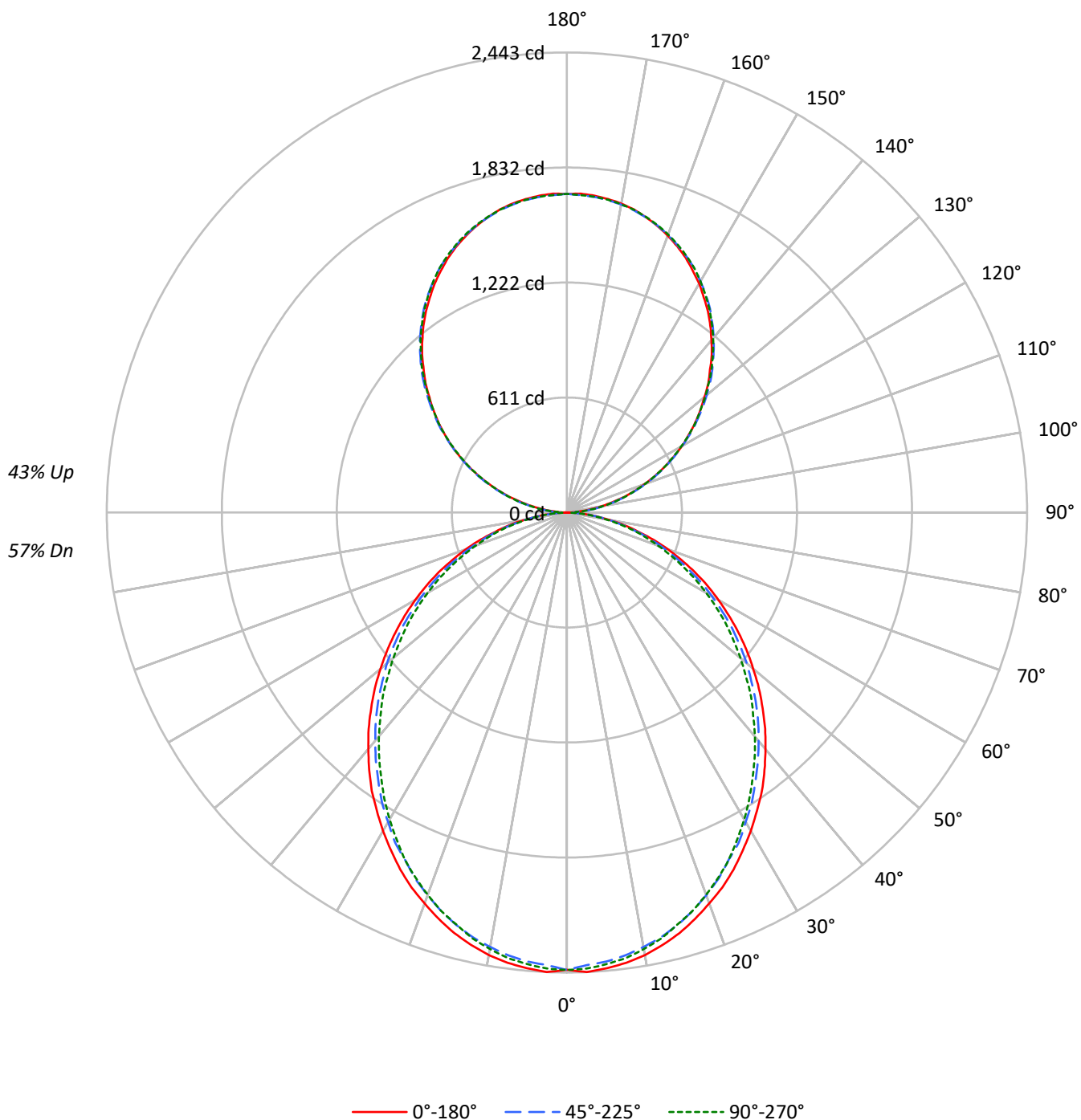
Lumens per Lamp: N/A
Luminaire Lumens: 10914.6 lumens
Efficiency: N/A
Efficacy: 98.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 110.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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
RCR																	
0	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62
1	99	95	91	87	92	88	85	82	76	74	72	65	63	62	55	54	53
2	90	83	77	71	84	77	72	67	67	63	59	57	54	52	48	46	44
3	82	73	65	60	76	68	62	56	59	54	50	51	47	44	43	40	38
4	75	65	57	50	70	60	53	48	53	47	43	45	41	37	38	35	33
5	69	58	49	43	64	54	47	41	47	41	37	41	36	32	35	31	28
6	64	52	43	38	59	48	41	36	42	36	32	37	32	28	31	28	25
7	59	47	39	33	55	44	37	31	38	33	28	33	29	25	29	25	22
8	55	42	35	29	51	40	33	28	35	29	25	31	26	23	26	23	20
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	24	21	18
10	48	36	28	23	45	34	27	22	30	24	20	26	22	18	23	19	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2783	2783	2783
5°	2786	2742	2762
10°	2761	2703	2723
15°	2719	2657	2664
20°	2662	2594	2603
25°	2606	2518	2533
30°	2536	2447	2444
35°	2469	2364	2351
40°	2387	2280	2261
45°	2305	2196	2170
50°	2216	2107	2064
55°	2122	2005	1966
60°	2016	1884	1854
65°	1900	1758	1722
70°	1752	1604	1580
75°	1548	1420	1448
80°	1301	1185	1196
85°	916	785	783

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2305 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	228.6	2.1
10°-20°	643.2	5.9
20°-30°	945.2	8.7
30°-40°	1097.8	10.1
40°-50°	1096.5	10.0
50°-60°	956.1	8.8
60°-70°	706.8	6.5
70°-80°	399.9	3.7
80°-90°	110.4	1.0
90°-100°	104.7	1.0
100°-110°	332.7	3.0
110°-120°	569.3	5.2
120°-130°	748.8	6.9
130°-140°	840.5	7.7
140°-150°	824.2	7.6
150°-160°	691.4	6.3
160°-170°	458.5	4.2
170°-180°	160.3	1.5
0°-30°	1817.0	16.6
0°-40°	2914.9	26.7
0°-60°	4967.4	45.5
0°-90°	6184.4	56.7
90°-120°	1006.7	9.2
90°-150°	3420.1	31.3
90°-180°	4730.0	43.3
0°-180°	10914.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2429	2429	2429	2429	2429	
5°	2429	2420	2394	2412	2408	231
15°	2312	2298	2268	2277	2266	651
25°	2093	2074	2034	2039	2034	963
35°	1805	1782	1745	1730	1719	1127
45°	1469	1453	1418	1392	1383	1134
55°	1112	1098	1070	1042	1030	994
65°	750	736	712	691	680	741
75°	392	388	376	362	367	419
85°	96	94	91	84	82	107
90°	2	18	50	47	48	11
95°	74	89	91	91	89	83
105°	307	311	314	317	317	324
115°	571	580	577	575	571	565
125°	831	844	840	835	834	743
135°	1075	1091	1094	1092	1088	831
145°	1305	1315	1323	1325	1319	815
155°	1492	1496	1501	1508	1503	687
165°	1623	1622	1622	1632	1625	458
175°	1689	1685	1682	1692	1683	160
180°	1692	1692	1692	1692	1692	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2428.8	2428.8	2428.8	2428.8	2428.8
2.5°	2442.9	2431.2	2405.5	2428.8	2424.3
5°	2428.8	2419.7	2393.9	2412.4	2408.0
7.5°	2412.4	2398.5	2372.8	2391.7	2386.9
10°	2386.9	2370.5	2342.5	2361.2	2354.2
12.5°	2351.7	2337.9	2309.9	2321.5	2316.8
15°	2312.1	2298.2	2267.7	2277.2	2265.5
17.5°	2263.0	2249.2	2218.7	2230.3	2218.7
20°	2209.2	2195.4	2162.7	2169.6	2160.4
22.5°	2155.7	2134.7	2104.2	2104.2	2099.4
25°	2092.6	2073.9	2034.3	2038.8	2034.3
27.5°	2022.4	2006.1	1975.9	1968.9	1957.2
30°	1952.6	1933.7	1898.8	1891.9	1882.4
32.5°	1877.7	1863.9	1826.4	1812.3	1802.9
35°	1805.4	1782.1	1744.6	1730.5	1718.9
37.5°	1723.6	1702.5	1665.1	1648.8	1637.1
40°	1639.6	1620.8	1583.3	1562.5	1553.1
42.5°	1557.8	1539.0	1501.8	1478.3	1464.4
45°	1469.1	1452.8	1417.6	1392.0	1382.6
47.5°	1382.6	1366.3	1328.8	1303.1	1289.2
50°	1291.5	1279.8	1247.1	1214.4	1202.7
52.5°	1202.7	1186.4	1156.2	1130.4	1114.0
55°	1111.8	1097.7	1069.7	1041.7	1030.0
57.5°	1020.7	1009.0	978.5	950.5	941.1
60°	929.4	920.2	887.6	861.8	854.9
62.5°	840.7	824.4	801.1	777.8	768.4
65°	749.8	735.7	712.4	691.3	679.7
67.5°	656.4	644.5	623.7	607.3	597.9
70°	569.9	560.5	539.4	523.1	513.9
72.5°	481.2	471.8	460.1	443.8	436.8
75°	392.3	387.8	375.9	362.0	366.8
77.5°	313.0	303.5	298.8	291.9	285.0
80°	233.6	231.2	226.5	219.5	214.8
82.5°	158.8	158.8	156.6	147.2	147.2
85°	95.7	93.5	91.2	84.0	81.8
87.5°	42.1	37.5	32.7	25.8	23.3
90°	1.5	18.4	50.0	46.9	48.4
92.5°	31.7	42.9	44.4	45.9	45.9
95°	74.5	88.7	91.3	91.3	88.7
97.5°	123.9	137.2	142.9	142.9	142.9
100°	181.1	192.8	196.9	196.9	195.4
102.5°	241.3	249.9	255.6	257.1	255.6
105°	307.1	311.2	314.2	316.8	316.8
107.5°	372.4	378.5	378.5	379.5	372.4
110°	435.7	443.8	443.8	443.8	439.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	504.0	512.6	511.1	507.0	504.0
115°	571.3	579.5	576.9	575.4	571.3
117.5°	638.2	649.4	642.2	638.2	634.1
120°	705.5	716.8	705.5	705.5	700.9
122.5°	766.7	781.0	773.8	769.8	766.7
125°	831.0	843.7	839.6	835.1	833.6
127.5°	893.8	909.5	903.9	897.9	893.8
130°	952.4	970.8	968.2	965.2	959.6
132.5°	1018.2	1032.5	1033.5	1026.4	1022.3
135°	1074.9	1090.7	1093.7	1092.2	1088.1
137.5°	1138.1	1150.8	1153.4	1152.4	1146.3
140°	1193.7	1206.5	1213.6	1213.6	1208.0
142.5°	1250.8	1263.6	1267.7	1269.2	1263.6
145°	1304.9	1315.1	1323.3	1324.8	1319.2
147.5°	1353.3	1366.1	1372.3	1374.7	1369.1
150°	1403.4	1412.0	1417.6	1422.2	1417.6
152.5°	1447.7	1456.4	1463.6	1469.2	1463.6
155°	1492.1	1496.2	1500.7	1508.0	1503.3
157.5°	1530.4	1533.5	1536.0	1546.2	1539.1
160°	1564.6	1567.6	1569.1	1577.8	1571.7
162.5°	1596.2	1596.2	1597.7	1607.4	1600.3
165°	1623.2	1621.7	1621.7	1631.9	1624.8
167.5°	1647.7	1643.2	1643.2	1653.3	1646.2
170°	1666.1	1662.0	1660.5	1670.6	1662.0
172.5°	1678.8	1674.7	1673.2	1683.4	1674.7
175°	1689.0	1685.0	1681.9	1692.1	1683.4
177.5°	1694.6	1690.6	1687.5	1696.1	1687.5
180°	1692.1	1692.1	1692.1	1692.1	1692.1

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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	11.39	12.31	12.28	13.23	14.40	10.94	11.87	11.84	12.78	13.96
	3H	13.05	13.88	13.96	14.80	16.00	12.56	13.39	13.47	14.31	15.51
	4H	13.63	14.42	14.56	15.35	16.56	13.14	13.92	14.07	14.86	16.06
	6H	14.03	14.76	14.97	15.70	16.92	13.53	14.26	14.47	15.20	16.42
	8H	14.14	14.83	15.08	15.78	17.00	13.64	14.33	14.58	15.28	16.50
	12H	14.19	14.84	15.14	15.79	17.04	13.68	14.33	14.63	15.28	16.53
4H	2H	11.85	12.64	12.78	13.57	14.78	11.50	12.28	12.43	13.21	14.42
	3H	13.72	14.37	14.66	15.34	16.56	13.31	13.96	14.25	14.93	16.15
	4H	14.43	15.03	15.38	15.99	17.23	14.01	14.60	14.96	15.56	16.81
	6H	14.94	15.46	15.91	16.44	17.69	14.51	15.03	15.48	16.01	17.26
	8H	15.09	15.58	16.06	16.55	17.81	14.66	15.14	15.62	16.11	17.37
	12H	15.17	15.60	16.15	16.59	17.86	14.72	15.15	15.70	16.15	17.41
8H	4H	14.63	15.11	15.59	16.08	17.34	14.25	14.73	15.22	15.71	16.97
	6H	15.26	15.65	16.25	16.67	17.93	14.87	15.27	15.86	16.29	17.55
	8H	15.47	15.83	16.47	16.83	18.11	15.08	15.43	16.08	16.44	17.71
	12H	15.60	15.92	16.61	16.91	18.24	15.19	15.50	16.20	16.50	17.83
12H	4H	14.62	15.05	15.60	16.04	17.31	14.25	14.68	15.23	15.67	16.94
	6H	15.28	15.64	16.28	16.64	17.92	14.91	15.26	15.91	16.27	17.55
	8H	15.53	15.84	16.53	16.83	18.16	15.14	15.45	16.15	16.45	17.78

END OF REPORT