

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: P925422

Luminaire Tested: DFN2DIP-SQ2F0-080D050US950-RLLFLL

Issue Date: 11/21/2024

**Test Information**

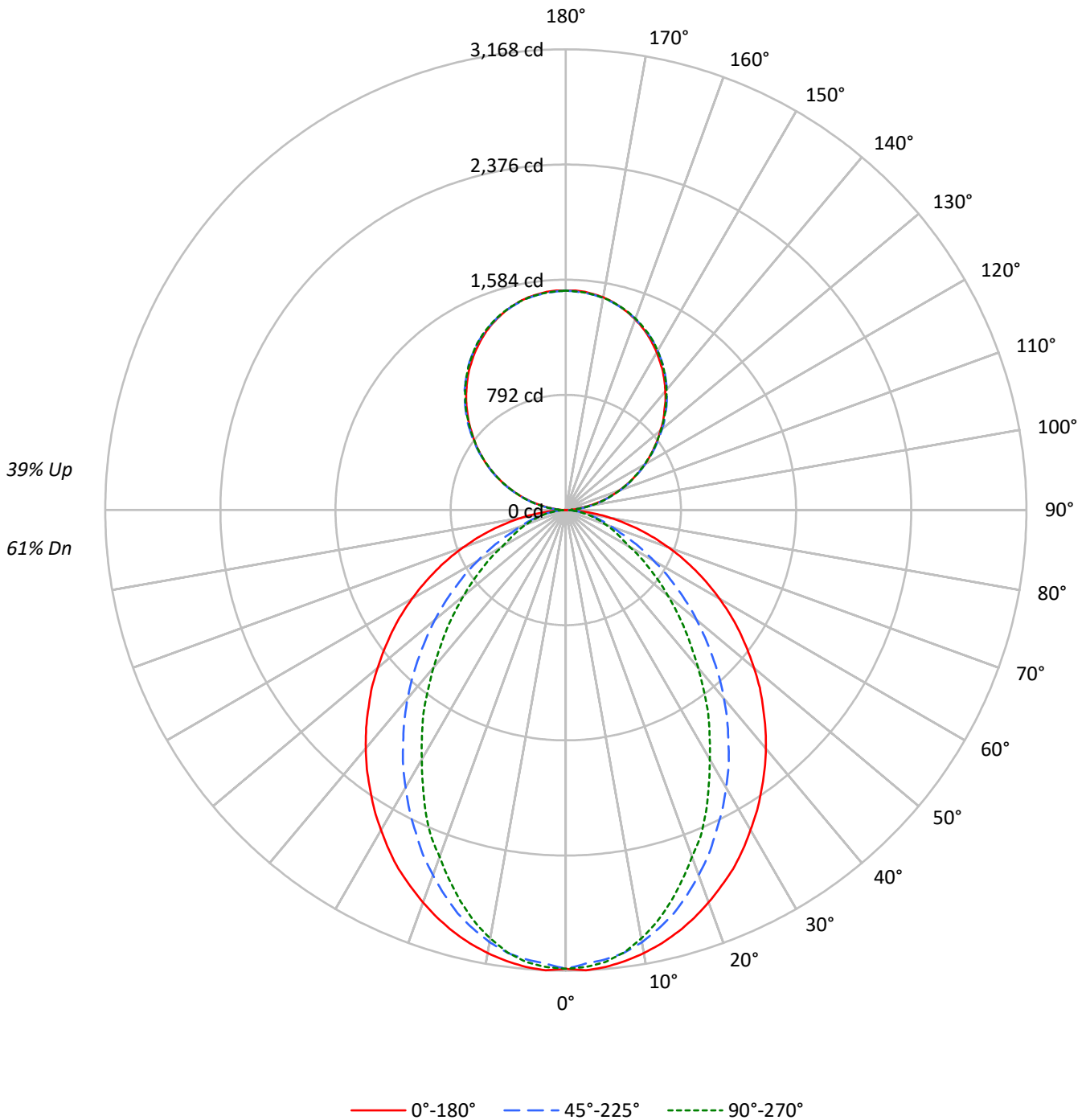
Test Method: LM-79-2019  
Report Number: P925422  
REPORT IS A COMBINATION OF REPORTS P899806 AND P896659  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ2F0-080D050US950-RLLFLL  
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10708.7 lumens  
Efficiency: N/A  
Efficacy: 92.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')  
CIE Type: Semi-Direct  
  
Input Watts (W): 116.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9957  
Total Harmonic Distortion (THDi): 0.049  
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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66	66	66	66	61
1	101	97	93	89	94	91	87	84	79	77	75	69	67	65	59	58	57	59	58	57	52
2	92	85	79	74	86	80	75	70	70	66	63	61	58	56	53	51	49	53	51	49	45
3	85	75	68	62	79	71	64	59	62	57	53	55	51	48	47	45	42	47	45	42	39
4	78	67	59	53	72	63	56	51	56	50	46	49	45	41	43	39	37	43	39	37	34
5	72	60	52	46	67	57	50	44	50	45	40	44	40	36	39	35	32	39	35	32	30
6	66	54	46	41	62	51	44	39	46	40	35	40	36	32	35	32	29	35	32	29	26
7	61	49	41	36	57	47	39	34	42	36	32	37	32	29	32	29	26	32	29	26	24
8	57	45	37	32	53	43	36	31	38	32	28	34	29	26	30	26	23	30	26	23	21
9	53	41	34	29	50	39	32	28	35	29	26	31	27	23	28	24	21	28	24	21	19
10	50	38	31	26	47	36	29	25	32	27	23	29	25	21	26	22	20	26	22	20	18

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	6936	6936	6936
5°	6935	6811	6860
10°	6854	6662	6627
15°	6748	6427	6273
20°	6611	6110	5842
25°	6471	5757	5426
30°	6287	5396	4902
35°	6106	5010	4441
40°	5921	4611	3915
45°	5707	4172	3440
50°	5485	3730	2975
55°	5253	3259	2529
60°	4983	2769	2073
65°	4672	2273	1854
70°	4294	1810	1665
75°	3818	1567	1495
80°	3135	1272	1266
85°	2041	790	902

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5707 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	295.6	2.8
10°-20°	811.5	7.6
20°-30°	1139.4	10.6
30°-40°	1242.0	11.6
40°-50°	1141.5	10.7
50°-60°	896.5	8.4
60°-70°	583.5	5.4
70°-80°	300.4	2.8
80°-90°	81.0	0.8
90°-100°	93.4	0.9
100°-110°	296.6	2.8
110°-120°	507.6	4.7
120°-130°	667.5	6.2
130°-140°	749.3	7.0
140°-150°	734.8	6.9
150°-160°	616.4	5.8
160°-170°	408.8	3.8
170°-180°	142.9	1.3
0°-30°	2246.6	21.0
0°-40°	3488.6	32.6
0°-60°	5526.6	51.6
0°-90°	6491.5	60.6
90°-120°	897.5	8.4
90°-150°	3049.2	28.5
90°-180°	4217.0	39.4
0°-180°	10708.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3154	3154	3154	3154	3154	
5°	3154	3140	3103	3128	3120	299
15°	3000	2969	2872	2818	2789	845
25°	2723	2632	2444	2327	2284	1252
35°	2347	2201	1950	1770	1707	1469
45°	1918	1727	1427	1224	1156	1481
55°	1459	1236	928	756	702	1303
65°	985	754	497	400	391	976
75°	525	325	228	208	206	555
85°	123	63	54	54	54	141
90°	1	16	45	42	43	10
95°	66	79	81	81	79	74
105°	274	277	280	282	282	289
115°	509	517	514	513	509	504
125°	741	752	749	744	743	662
135°	958	972	975	974	970	741
145°	1163	1172	1180	1181	1176	727
155°	1330	1334	1338	1344	1340	612
165°	1447	1446	1446	1455	1449	408
175°	1506	1502	1500	1509	1501	143
180°	1509	1509	1509	1509	1509	



TEST NUMBER: P925422

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3154.3	3154.3	3154.3	3154.3	3154.3
2.5°	3168.5	3154.3	3122.8	3151.5	3145.8
5°	3154.3	3140.1	3102.8	3128.5	3120.1
7.5°	3128.5	3111.6	3071.6	3082.9	3068.5
10°	3094.3	3074.4	3017.4	3008.6	2991.6
12.5°	3051.7	3025.9	2948.6	2931.6	2900.2
15°	3000.1	2968.7	2871.7	2817.5	2789.0
17.5°	2940.1	2894.4	2774.5	2711.8	2666.0
20°	2871.7	2814.5	2671.9	2600.7	2537.6
22.5°	2797.5	2731.8	2566.2	2469.2	2426.5
25°	2723.3	2631.9	2443.5	2326.6	2283.6
27.5°	2634.9	2537.6	2329.3	2195.2	2129.4
30°	2540.7	2431.9	2203.6	2058.3	1981.0
32.5°	2449.2	2317.8	2084.0	1912.6	1841.1
35°	2346.6	2200.9	1949.8	1770.0	1706.9
37.5°	2246.6	2089.5	1824.1	1627.0	1555.8
40°	2141.0	1969.8	1692.7	1490.1	1415.8
42.5°	2032.5	1849.9	1561.5	1350.2	1278.9
45°	1918.3	1726.9	1427.4	1224.5	1156.1
47.5°	1809.9	1607.3	1299.0	1096.1	1033.4
50°	1689.9	1487.4	1173.3	976.1	916.4
52.5°	1572.8	1358.6	1053.3	865.0	810.8
55°	1458.6	1236.0	927.7	756.5	702.3
57.5°	1341.7	1113.3	816.5	656.6	610.8
60°	1221.7	993.4	699.3	553.9	508.2
62.5°	1104.8	876.4	599.4	462.5	439.8
65°	984.9	753.5	496.7	399.8	390.9
67.5°	870.7	639.4	399.8	351.0	342.6
70°	750.8	528.2	331.0	302.5	291.1
72.5°	636.6	425.2	276.9	254.1	248.3
75°	525.2	325.3	228.4	208.4	205.7
77.5°	414.0	231.1	179.9	168.4	162.7
80°	311.0	165.7	136.9	125.6	125.6
82.5°	216.8	111.4	94.2	88.4	88.4
85°	122.7	62.7	54.2	54.2	54.2
87.5°	45.7	22.7	22.7	20.0	20.0
90°	1.3	16.4	44.6	41.9	43.2
92.5°	28.2	38.2	39.6	40.9	40.9
95°	66.4	79.2	81.4	81.4	79.2
97.5°	110.5	122.3	127.4	127.4	127.4
100°	161.4	171.9	175.5	175.5	174.2
102.5°	215.1	222.9	227.8	229.2	227.8
105°	273.8	277.4	280.2	282.4	282.4
107.5°	332.0	337.4	337.4	338.4	332.0
110°	388.4	395.7	395.7	395.7	392.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	449.3	457.1	455.7	452.1	449.3
115°	509.3	516.7	514.4	513.1	509.3
117.5°	569.0	579.0	572.6	569.0	565.3
120°	629.0	639.0	629.0	629.0	624.9
122.5°	683.5	696.3	689.9	686.3	683.5
125°	740.9	752.2	748.6	744.5	743.2
127.5°	796.8	810.9	805.9	800.4	796.8
130°	849.2	865.5	863.2	860.5	855.5
132.5°	907.8	920.5	921.5	915.1	911.5
135°	958.3	972.3	975.1	973.7	970.1
137.5°	1014.7	1026.0	1028.3	1027.4	1021.9
140°	1064.2	1075.6	1081.9	1081.9	1077.0
142.5°	1115.1	1126.6	1130.2	1131.5	1126.6
145°	1163.4	1172.5	1179.7	1181.1	1176.1
147.5°	1206.6	1218.0	1223.4	1225.7	1220.6
150°	1251.2	1258.9	1263.9	1268.0	1263.9
152.5°	1290.8	1298.5	1304.8	1309.8	1304.8
155°	1330.3	1333.9	1338.0	1344.4	1340.3
157.5°	1364.4	1367.1	1369.4	1378.5	1372.1
160°	1394.8	1397.6	1398.9	1406.7	1401.2
162.5°	1423.1	1423.1	1424.4	1433.1	1426.7
165°	1447.2	1445.8	1445.8	1454.9	1448.6
167.5°	1469.0	1464.9	1464.9	1474.0	1467.6
170°	1485.4	1481.8	1480.4	1489.5	1481.8
172.5°	1496.7	1493.1	1491.8	1500.8	1493.1
175°	1505.9	1502.2	1499.5	1508.6	1500.8
177.5°	1510.8	1507.2	1504.5	1512.2	1504.5
180°	1508.6	1508.6	1508.6	1508.6	1508.6



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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	14.70	15.62	15.56	16.51	17.62	10.66	11.58	11.53	12.47	13.58
	3H	16.36	17.19	17.24	18.08	19.22	11.84	12.66	12.72	13.56	14.70
	4H	16.96	17.74	17.86	18.64	19.79	12.28	13.06	13.17	13.96	15.11
	6H	17.37	18.09	18.28	19.00	20.16	12.59	13.31	13.49	14.21	15.38
	8H	17.49	18.18	18.41	19.10	20.26	12.67	13.36	13.59	14.28	15.44
	12H	17.55	18.20	18.47	19.12	20.31	12.71	13.36	13.63	14.28	15.46
4H	2H	14.72	15.50	15.62	16.40	17.55	11.25	12.04	12.16	12.93	14.09
	3H	16.54	17.19	17.45	18.12	19.28	12.59	13.24	13.50	14.17	15.34
	4H	17.22	17.81	18.14	18.74	19.93	13.13	13.72	14.05	14.65	15.84
	6H	17.72	18.23	18.66	19.18	20.37	13.53	14.04	14.47	14.99	16.18
	8H	17.89	18.36	18.82	19.30	20.51	13.65	14.13	14.59	15.07	16.28
	12H	17.97	18.40	18.93	19.36	20.57	13.71	14.14	14.67	15.10	16.31
8H	4H	17.19	17.66	18.13	18.61	19.81	13.40	13.88	14.34	14.82	16.03
	6H	17.74	18.13	18.70	19.11	20.32	13.90	14.29	14.87	15.28	16.48
	8H	17.94	18.29	18.91	19.26	20.48	14.08	14.42	15.05	15.40	16.62
	12H	18.07	18.37	19.04	19.34	20.61	14.19	14.49	15.16	15.46	16.73
12H	4H	17.14	17.57	18.10	18.53	19.74	13.41	13.84	14.37	14.80	16.01
	6H	17.71	18.06	18.68	19.03	20.26	13.94	14.29	14.92	15.27	16.49
	8H	17.92	18.23	18.90	19.19	20.47	14.14	14.45	15.12	15.42	16.69