

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: P914588

Luminaire Tested: DFN2DIP-SQ3F0-050D110US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914588
REPORT IS A COMBINATION OF REPORTS P899989 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D110US927-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

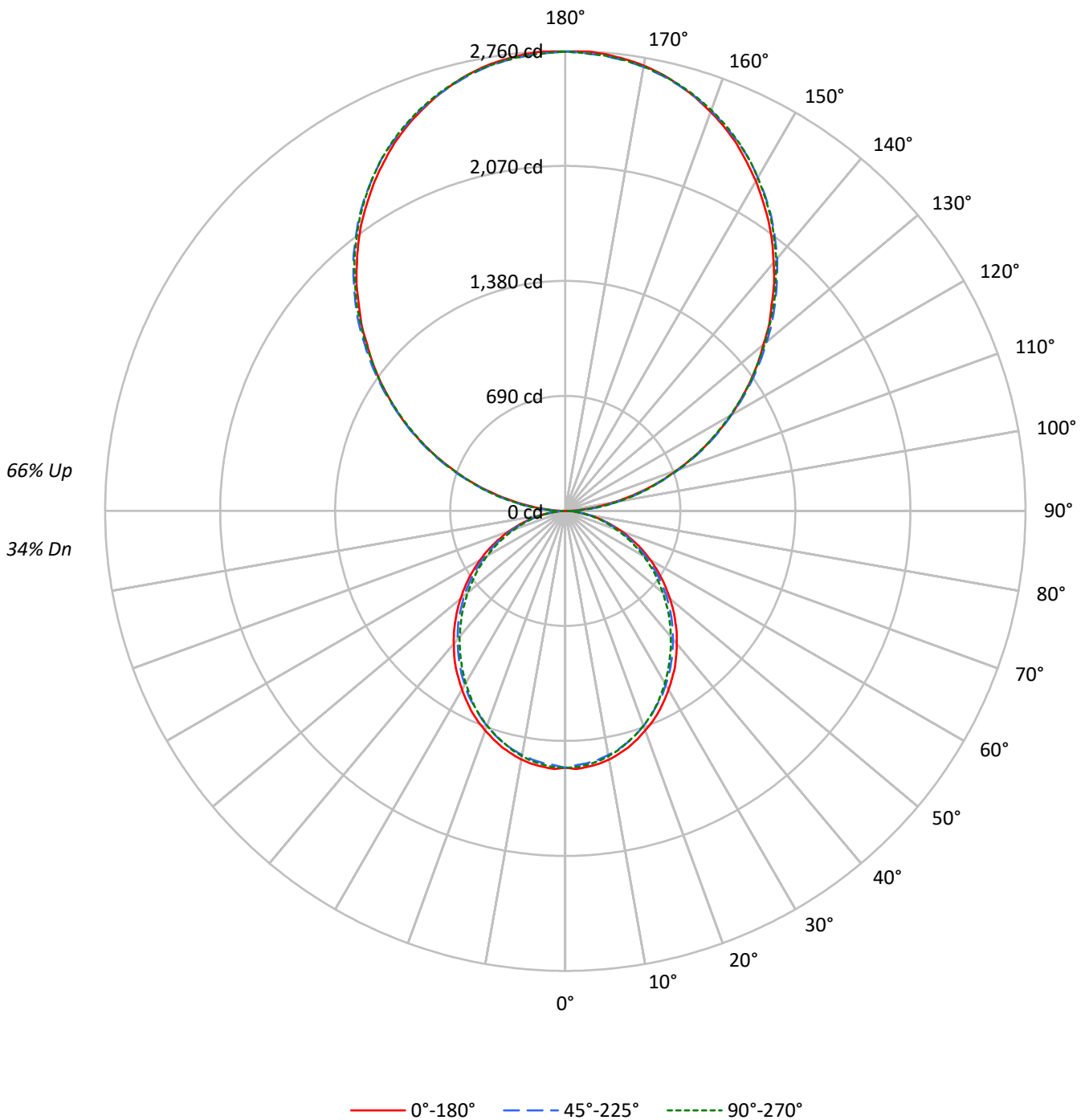
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11633.2 lumens
Efficiency: N/A
Efficacy: 90.8 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: Semi-Indirect

Input Watts (W): 128.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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				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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41	34				34
1	94	90	86	83	85	81	78	75	65	63	61	50	49	47	36	36	35	28				28
2	86	78	73	67	77	71	66	62	57	53	50	44	42	40	32	31	29	24				24
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25	20				20
4	71	61	53	47	64	55	49	44	45	40	36	35	31	29	25	23	21	17				17
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	19	15				15
6	60	48	41	35	54	44	37	32	36	31	27	28	24	22	21	18	16	13				13
7	56	44	36	31	50	40	33	28	32	27	24	25	22	19	19	16	15	12				12
8	52	40	32	27	46	36	29	25	29	24	21	23	20	17	17	15	13	10				10
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	14	12	9				9
10	45	33	26	21	40	30	24	20	25	20	17	20	16	14	15	12	11	9				9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1766	1766	1766
5°	1768	1740	1752
10°	1752	1716	1728
15°	1725	1686	1691
20°	1689	1646	1652
25°	1654	1598	1608
30°	1609	1553	1551
35°	1567	1500	1492
40°	1515	1447	1435
45°	1463	1393	1377
50°	1406	1337	1310
55°	1347	1272	1248
60°	1279	1195	1177
65°	1206	1115	1093
70°	1112	1018	1003
75°	982	901	918
80°	826	752	759
85°	581	497	497

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2771 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	145.1	1.2
10°-20°	408.1	3.5
20°-30°	599.8	5.2
30°-40°	696.6	6.0
40°-50°	695.8	6.0
50°-60°	606.7	5.2
60°-70°	448.5	3.9
70°-80°	253.7	2.2
80°-90°	74.8	0.6
90°-100°	170.5	1.5
100°-110°	541.8	4.7
110°-120°	927.3	8.0
120°-130°	1219.5	10.5
130°-140°	1368.8	11.8
140°-150°	1342.3	11.5
150°-160°	1126.0	9.7
160°-170°	746.7	6.4
170°-180°	261.0	2.2
0°-30°	1153.0	9.9
0°-40°	1849.6	15.9
0°-60°	3152.1	27.1
0°-90°	3929.1	33.8
90°-120°	1639.7	14.1
90°-150°	5570.3	47.9
90°-180°	7704.0	66.2
0°-180°	11633.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1541	1541	1541	1541	1541	
5°	1541	1535	1519	1531	1528	146
15°	1467	1458	1439	1445	1438	413
25°	1328	1316	1291	1294	1291	611
35°	1146	1131	1107	1098	1091	715
45°	932	922	900	883	877	719
55°	706	697	679	661	654	631
65°	476	467	452	439	431	470
75°	249	246	238	230	233	266
85°	61	59	58	53	52	68
90°	2	30	81	76	79	11
95°	121	145	149	149	145	135
105°	500	507	512	516	516	528
115°	931	944	940	937	931	920
125°	1353	1374	1368	1360	1358	1209
135°	1751	1776	1781	1779	1772	1353
145°	2125	2142	2155	2158	2149	1328
155°	2430	2437	2444	2456	2448	1119
165°	2644	2641	2641	2658	2646	746
175°	2751	2744	2739	2756	2742	261
180°	2756	2756	2756	2756	2756	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1541.2	1541.2	1541.2	1541.2	1541.2
2.5°	1550.1	1542.8	1526.5	1541.2	1538.4
5°	1541.2	1535.4	1519.0	1530.8	1528.0
7.5°	1530.8	1522.0	1505.7	1517.7	1514.7
10°	1514.7	1504.3	1486.5	1498.3	1493.9
12.5°	1492.3	1483.5	1465.8	1473.1	1470.1
15°	1467.1	1458.3	1439.0	1445.0	1437.6
17.5°	1436.0	1427.2	1407.9	1415.2	1407.9
20°	1401.9	1393.1	1372.4	1376.7	1370.9
22.5°	1367.9	1354.6	1335.2	1335.2	1332.2
25°	1327.9	1316.1	1290.9	1293.7	1290.9
27.5°	1283.3	1273.0	1253.8	1249.3	1242.0
30°	1239.0	1227.1	1204.9	1200.5	1194.5
32.5°	1191.5	1182.7	1159.0	1150.0	1144.1
35°	1145.6	1130.8	1107.1	1098.1	1090.8
37.5°	1093.7	1080.4	1056.6	1046.2	1038.9
40°	1040.5	1028.5	1004.7	991.5	985.6
42.5°	988.6	976.6	953.0	938.0	929.2
45°	932.2	921.9	899.5	883.4	877.3
47.5°	877.3	867.0	843.3	826.9	818.1
50°	819.5	812.1	791.4	770.6	763.2
52.5°	763.2	752.8	733.6	717.3	706.9
55°	705.5	696.6	678.7	661.0	653.6
57.5°	647.6	640.2	620.9	603.2	597.1
60°	589.8	584.0	563.2	546.8	542.5
62.5°	533.5	523.2	508.3	493.5	487.6
65°	475.8	466.8	452.0	438.7	431.3
67.5°	416.5	409.0	395.8	385.4	379.4
70°	361.6	355.7	342.3	331.9	326.1
72.5°	305.4	299.4	292.0	281.6	277.2
75°	248.9	246.1	238.5	229.7	232.7
77.5°	198.6	192.6	189.6	185.2	180.9
80°	148.3	146.7	143.7	139.3	136.3
82.5°	100.8	100.8	99.3	93.4	93.4
85°	60.7	59.3	57.8	53.3	51.9
87.5°	26.7	23.8	20.8	16.3	14.8
90°	2.5	29.9	81.4	76.4	78.9
92.5°	51.5	69.8	72.2	74.8	74.8
95°	121.3	144.6	148.7	148.7	144.6
97.5°	201.9	223.5	232.7	232.7	232.7
100°	294.9	314.0	320.7	320.7	318.2
102.5°	393.0	407.1	416.3	418.7	416.3
105°	500.2	506.8	511.8	515.9	515.9
107.5°	606.5	616.5	616.5	618.1	606.5
110°	709.6	722.9	722.9	722.9	716.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	820.9	835.0	832.5	825.8	820.9
115°	930.6	943.8	939.7	937.2	930.6
117.5°	1039.4	1057.6	1046.0	1039.4	1032.8
120°	1149.1	1167.4	1149.1	1149.1	1141.6
122.5°	1248.8	1272.0	1260.4	1253.7	1248.8
125°	1353.4	1374.2	1367.5	1360.1	1357.6
127.5°	1455.6	1481.4	1472.3	1462.3	1455.6
130°	1551.2	1581.1	1576.9	1571.9	1562.8
132.5°	1658.4	1681.6	1683.3	1671.7	1665.0
135°	1750.6	1776.3	1781.3	1778.8	1772.2
137.5°	1853.6	1874.4	1878.5	1876.8	1866.9
140°	1944.2	1964.9	1976.6	1976.6	1967.5
142.5°	2037.3	2058.0	2064.7	2067.1	2058.0
145°	2125.3	2141.9	2155.2	2157.7	2148.6
147.5°	2204.2	2225.0	2235.0	2239.1	2230.0
150°	2285.7	2299.8	2308.9	2316.4	2308.9
152.5°	2357.9	2372.0	2383.7	2392.9	2383.7
155°	2430.3	2436.8	2444.4	2456.0	2448.5
157.5°	2492.5	2497.5	2501.6	2518.3	2506.6
160°	2548.2	2553.2	2555.7	2569.8	2559.9
162.5°	2599.7	2599.7	2602.2	2618.0	2606.4
165°	2643.7	2641.2	2641.2	2657.8	2646.2
167.5°	2683.6	2676.1	2676.1	2692.8	2681.1
170°	2713.5	2706.9	2704.4	2721.0	2706.9
172.5°	2734.3	2727.6	2725.2	2741.8	2727.6
175°	2750.9	2744.3	2739.3	2755.9	2741.8
177.5°	2760.0	2753.4	2748.4	2762.6	2748.4
180°	2755.9	2755.9	2755.9	2755.9	2755.9



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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	7.49	8.22	8.57	9.30	10.79	7.04	7.78	8.13	8.86	10.35
	3H	9.13	9.79	10.23	10.88	12.39	8.64	9.30	9.74	10.39	11.90
	4H	9.71	10.33	10.82	11.43	12.94	9.22	9.84	10.32	10.94	12.44
	6H	10.10	10.68	11.22	11.77	13.29	9.60	10.18	10.72	11.27	12.79
	8H	10.20	10.75	11.32	11.86	13.37	9.70	10.25	10.82	11.36	12.87
	12H	10.24	10.76	11.36	11.87	13.41	9.73	10.25	10.86	11.36	12.90
4H	2H	7.93	8.55	9.04	9.65	11.15	7.57	8.20	8.69	9.29	10.80
	3H	9.78	10.30	10.90	11.42	12.94	9.37	9.89	10.49	11.01	12.53
	4H	10.48	10.96	11.60	12.07	13.61	10.06	10.54	11.18	11.65	13.19
	6H	10.99	11.40	12.12	12.53	14.06	10.55	10.96	11.68	12.10	13.63
	8H	11.13	11.51	12.26	12.64	14.19	10.69	11.08	11.82	12.20	13.75
	12H	11.20	11.54	12.34	12.68	14.23	10.75	11.09	11.89	12.23	13.78
8H	4H	10.66	11.05	11.79	12.17	13.72	10.29	10.67	11.42	11.79	13.35
	6H	11.28	11.60	12.43	12.77	14.31	10.90	11.22	12.05	12.38	13.93
	8H	11.50	11.78	12.66	12.92	14.49	11.11	11.38	12.26	12.53	14.10
	12H	11.62	11.87	12.78	13.01	14.61	11.21	11.45	12.37	12.60	14.20
12H	4H	10.64	10.99	11.79	12.13	13.68	10.27	10.62	11.42	11.76	13.31
	6H	11.31	11.59	12.47	12.73	14.30	10.94	11.22	12.09	12.36	13.93
	8H	11.54	11.79	12.70	12.93	14.53	11.16	11.41	12.32	12.55	14.15