

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: P914911

Luminaire Tested: DFN2DIP-SQ4F0-070D120US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914911
REPORT IS A COMBINATION OF REPORTS P901690 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-070D120US927-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

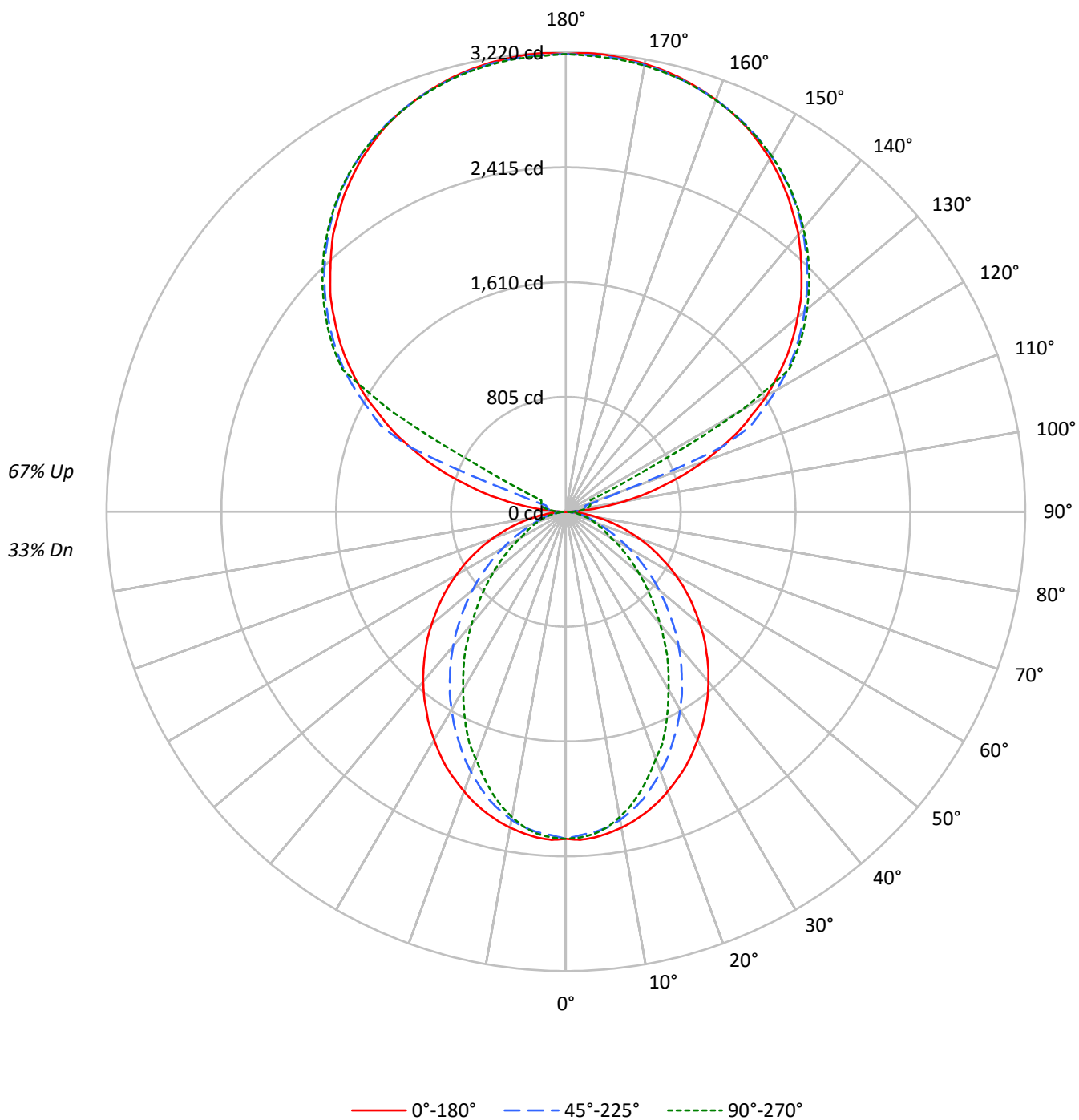
Lumens per Lamp: N/A
Luminaire Lumens: 14124.5 lumens
Efficiency: N/A
Efficacy: 93.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 151.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
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	103	103	103	103	93	93	93	93	74	74	74		57	57	57		41
1	94	90	87	83	85	82	79	76	65	63	61		50	49	48		37
2	86	79	73	69	78	72	67	63	58	54	51		45	42	40		33
3	79	70	63	57	71	63	57	53	51	47	43		40	37	35		29
4	72	62	54	49	65	56	50	45	45	41	37		36	32	30		26
5	66	55	48	42	60	50	44	39	41	36	32		32	29	26		24
6	61	50	42	36	55	45	38	34	37	32	28		29	25	23		22
7	56	45	37	32	51	41	34	29	33	28	25		26	23	20		20
8	52	41	33	28	47	37	31	26	30	26	22		24	21	18		18
9	49	37	30	25	44	34	28	23	28	23	20		22	19	16		17
10	45	34	27	22	41	31	25	21	26	21	18		21	17	15		16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1608	1608	1608
5°	1611	1583	1593
10°	1595	1552	1542
15°	1573	1501	1462
20°	1544	1431	1364
25°	1514	1352	1269
30°	1474	1271	1149
35°	1435	1184	1044
40°	1395	1093	922
45°	1349	993	813
50°	1301	892	705
55°	1251	784	602
60°	1193	671	496
65°	1126	556	447
70°	1046	449	405
75°	945	396	370
80°	798	334	322
85°	555	225	246

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1720 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	1.5
10°-20°	589.7	4.2
20°-30°	827.9	5.9
30°-40°	902.4	6.4
40°-50°	829.4	5.9
50°-60°	651.4	4.6
60°-70°	424.0	3.0
70°-80°	218.2	1.5
80°-90°	61.4	0.4
90°-100°	105.8	0.7
100°-110°	394.4	2.8
110°-120°	1045.9	7.4
120°-130°	1734.7	12.3
130°-140°	1842.7	13.0
140°-150°	1712.6	12.1
150°-160°	1376.9	9.7
160°-170°	887.2	6.3
170°-180°	305.4	2.2
0°-30°	1632.3	11.6
0°-40°	2534.7	17.9
0°-60°	4015.5	28.4
0°-90°	4719.1	33.4
90°-120°	1546.1	10.9
90°-150°	6836.0	48.4
90°-180°	9405.0	66.6
0°-180°	14124.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2282	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	2	28	46	58	63	13
95°	151	74	90	102	100	179
105°	706	776	142	167	176	754
115°	1335	1374	1432	358	190	1314
125°	1887	1918	1962	1978	1985	1683
135°	2335	2373	2393	2417	2412	1804
145°	2709	2707	2746	2762	2751	1694
155°	2983	2962	2990	3004	2986	1375
165°	3143	3129	3136	3153	3136	888
175°	3215	3199	3204	3220	3197	306
180°	3208	3208	3208	3208	3208	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.9	2291.9	2291.9	2291.9	2291.9
2.5°	2302.2	2291.9	2269.0	2289.9	2285.7
5°	2291.9	2281.5	2254.5	2273.2	2267.0
7.5°	2273.2	2260.8	2231.8	2239.9	2229.6
10°	2248.3	2233.8	2192.4	2186.0	2173.7
12.5°	2217.2	2198.5	2142.5	2130.1	2107.2
15°	2179.8	2157.0	2086.5	2047.2	2026.5
17.5°	2136.3	2103.1	2015.9	1970.3	1937.1
20°	2086.5	2044.9	1941.3	1889.6	1843.8
22.5°	2032.7	1984.9	1864.5	1794.1	1763.1
25°	1978.7	1912.2	1775.4	1690.4	1659.2
27.5°	1914.5	1843.8	1692.4	1595.0	1547.2
30°	1846.0	1767.0	1601.1	1495.5	1439.4
32.5°	1779.6	1684.1	1514.2	1389.6	1337.7
35°	1704.9	1599.1	1416.7	1286.0	1240.2
37.5°	1632.4	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.9	1082.7	1028.7
42.5°	1476.8	1344.1	1134.6	981.0	929.3
45°	1393.8	1254.7	1037.1	889.7	839.9
47.5°	1315.0	1167.8	943.8	796.4	750.8
50°	1227.9	1080.7	852.5	709.2	665.9
52.5°	1142.7	987.1	765.3	628.4	589.1
55°	1059.8	898.0	674.0	549.7	510.3
57.5°	974.9	808.9	593.3	477.1	443.9
60°	887.7	721.8	508.1	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.6	547.5	360.9	290.5	284.1
67.5°	632.6	464.5	290.5	255.0	248.9
70°	545.5	383.7	240.5	219.8	211.4
72.5°	462.6	309.0	201.1	184.7	180.5
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.7	122.3	118.2
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.1	45.6	39.4	39.4	39.4
87.5°	33.2	16.5	16.5	14.5	14.5
90°	2.2	27.8	46.3	58.1	62.6
92.5°	58.1	48.8	55.7	60.4	62.6
95°	150.8	74.1	90.4	102.3	99.8
97.5°	271.6	81.4	118.3	125.4	127.6
100°	411.0	92.9	132.3	150.8	155.5
102.5°	564.0	559.6	137.0	162.4	169.5
105°	705.7	775.5	141.7	167.1	176.4
107.5°	870.5	928.4	146.4	171.7	181.1
110°	1028.5	1077.0	406.3	174.2	183.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1177.1	1218.7	1179.3	178.6	185.8
115°	1334.7	1374.2	1432.3	357.5	190.5
117.5°	1471.8	1518.1	1557.8	1225.6	617.5
120°	1625.1	1659.8	1701.7	1729.6	1416.1
122.5°	1754.9	1792.2	1838.7	1852.5	1855.0
125°	1887.2	1917.6	1961.7	1977.9	1984.8
127.5°	2007.9	2040.5	2075.5	2098.6	2100.9
130°	2121.8	2159.0	2184.4	2210.0	2207.8
132.5°	2237.8	2268.2	2293.5	2314.5	2312.3
135°	2335.4	2372.7	2393.3	2416.8	2412.1
137.5°	2437.5	2465.3	2488.7	2511.8	2505.0
140°	2537.3	2556.0	2581.3	2602.3	2590.7
142.5°	2621.0	2637.3	2667.4	2685.8	2674.2
145°	2709.3	2706.8	2746.2	2762.5	2750.8
147.5°	2785.6	2778.7	2818.2	2829.8	2820.6
150°	2860.0	2843.8	2881.0	2894.8	2883.2
152.5°	2922.6	2904.1	2938.9	2952.9	2936.7
155°	2983.0	2962.3	2990.2	3004.0	2985.5
157.5°	3031.8	3013.3	3034.3	3050.5	3031.8
160°	3073.7	3059.6	3073.7	3087.4	3071.2
162.5°	3110.7	3096.9	3108.4	3124.7	3103.8
165°	3143.1	3129.4	3136.2	3152.6	3136.2
167.5°	3168.8	3154.7	3161.9	3178.2	3157.2
170°	3189.7	3175.7	3180.4	3196.6	3175.7
172.5°	3203.5	3189.7	3194.5	3210.7	3189.7
175°	3215.1	3198.8	3203.5	3219.8	3196.6
177.5°	3219.8	3203.5	3206.0	3222.3	3201.4
180°	3208.3	3208.3	3208.3	3208.3	3208.3

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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	7.03	7.74	8.12	8.82	10.32	2.99	3.70	4.08	4.79	6.28
	3H	8.70	9.33	9.80	10.43	11.94	4.17	4.80	5.27	5.90	7.41
	4H	9.31	9.91	10.42	11.01	12.52	4.61	5.22	5.72	6.31	7.83
	6H	9.72	10.28	10.84	11.38	12.91	4.93	5.48	6.05	6.58	8.11
	8H	9.85	10.38	10.97	11.49	13.01	5.02	5.54	6.14	6.66	8.18
	12H	9.91	10.41	11.04	11.52	13.06	5.06	5.56	6.18	6.66	8.21
4H	2H	7.03	7.63	8.15	8.73	10.25	3.57	4.17	4.69	5.27	6.79
	3H	8.85	9.35	9.98	10.48	12.01	4.91	5.41	6.04	6.54	8.06
	4H	9.54	10.00	10.67	11.12	12.67	5.45	5.92	6.58	7.03	8.58
	6H	10.06	10.45	11.19	11.59	13.13	5.87	6.26	7.00	7.40	8.94
	8H	10.23	10.60	11.37	11.73	13.28	5.99	6.36	7.13	7.49	9.05
	12H	10.32	10.66	11.48	11.80	13.36	6.05	6.39	7.21	7.53	9.09
8H	4H	9.50	9.87	10.64	11.00	12.55	5.73	6.10	6.86	7.22	8.78
	6H	10.07	10.37	11.22	11.54	13.10	6.24	6.55	7.40	7.72	9.27
	8H	10.29	10.55	11.45	11.70	13.28	6.43	6.70	7.60	7.85	9.42
	12H	10.43	10.66	11.59	11.80	13.41	6.55	6.78	7.71	7.93	9.54
12H	4H	9.45	9.78	10.60	10.92	12.48	5.73	6.06	6.88	7.20	8.76
	6H	10.04	10.31	11.21	11.46	13.03	6.29	6.56	7.45	7.71	9.28
	8H	10.26	10.50	11.43	11.64	13.25	6.50	6.73	7.66	7.88	9.49