

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: P917557

Luminaire Tested: DFN2DIP-SQ3F0-120D080US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917557
REPORT IS A COMBINATION OF REPORTS P901469 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D080US930-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

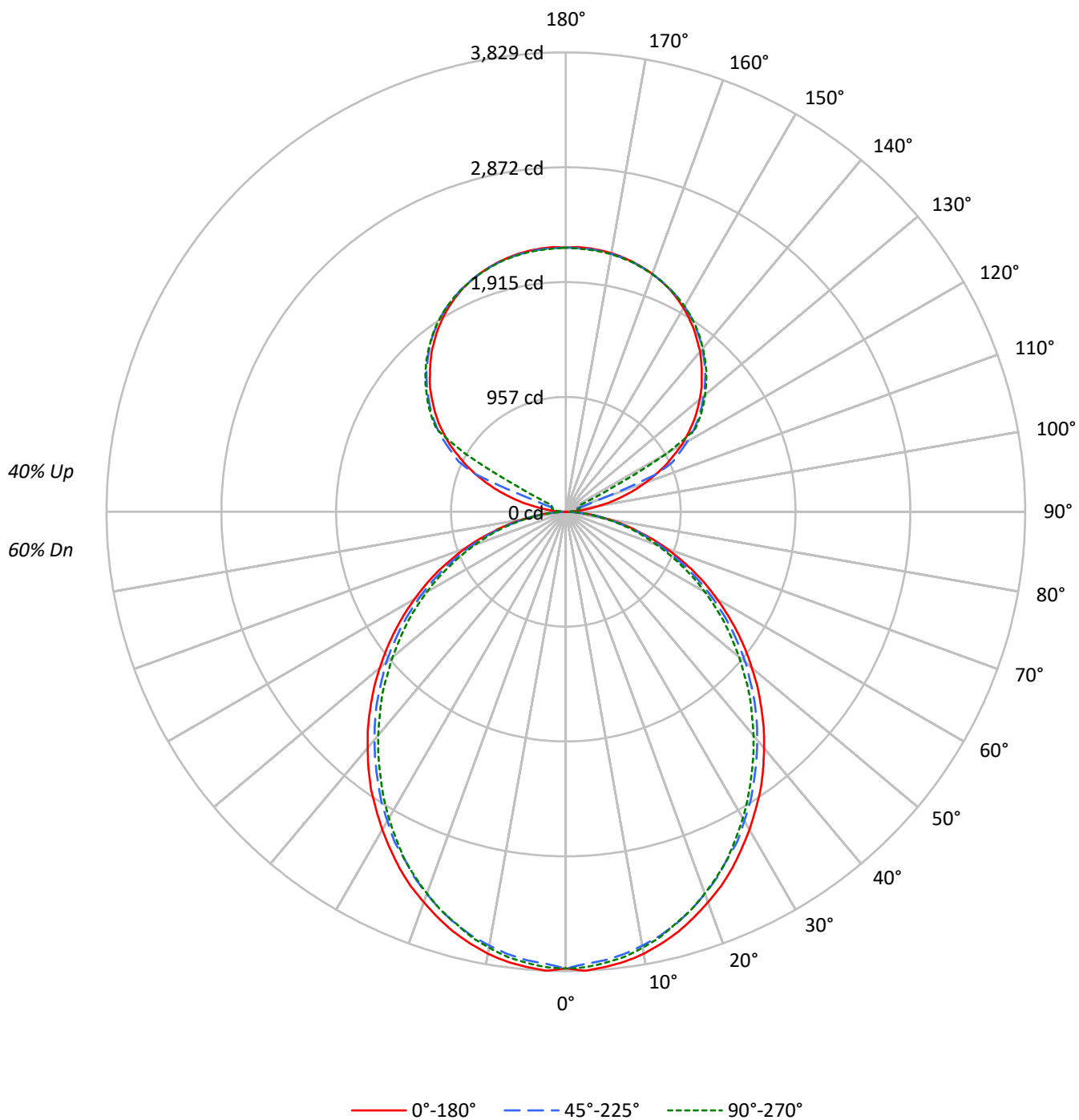
Lumens per Lamp: N/A
Luminaire Lumens: 16142.9 lumens
Efficiency: N/A
Efficacy: 86.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 186.2
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

TEST NUMBER: P917557

CATALOG NUMBER: DFN2DIP-SQ3F0-120D080US930-FLLONL

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	110	110	110	110	102	102	102	102	89	89	89	77	77	77	65	65	65
1	100	96	92	88	93	90	86	83	78	75	73	67	66	64	58	56	55
2	91	84	77	72	85	78	73	68	68	64	61	59	56	53	51	49	47
3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	45	42	40
4	76	65	57	51	71	61	54	48	54	48	44	47	42	39	40	37	34
5	70	58	50	44	65	55	47	42	48	42	38	42	37	34	36	33	30
6	64	52	44	38	60	49	42	36	43	37	33	38	33	30	33	29	26
7	60	47	39	33	56	44	37	32	39	33	29	35	30	26	30	26	23
8	55	43	35	30	52	40	33	28	36	30	26	32	27	23	28	24	21
9	52	39	32	26	48	37	30	25	33	27	23	29	24	21	26	22	19
10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	24	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4362	4362	4362
5°	4366	4298	4329
10°	4328	4237	4269
15°	4261	4165	4176
20°	4173	4065	4081
25°	4084	3946	3971
30°	3974	3835	3832
35°	3870	3705	3684
40°	3741	3574	3544
45°	3613	3442	3401
50°	3473	3303	3235
55°	3326	3142	3082
60°	3160	2952	2906
65°	2978	2755	2700
70°	2746	2514	2477
75°	2426	2225	2268
80°	2039	1857	1875
85°	1435	1230	1228

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3613 cd/sqm

TEST NUMBER: P917557

CATALOG NUMBER: DFN2DIP-SQ3F0-120D080US930-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	358.3	2.2
10°-20°	1008.1	6.2
20°-30°	1481.5	9.2
30°-40°	1720.7	10.7
40°-50°	1718.6	10.6
50°-60°	1498.5	9.3
60°-70°	1107.8	6.9
70°-80°	626.7	3.9
80°-90°	169.3	1.0
90°-100°	72.6	0.4
100°-110°	270.6	1.7
110°-120°	717.6	4.4
120°-130°	1190.2	7.4
130°-140°	1264.3	7.8
140°-150°	1175.0	7.3
150°-160°	944.7	5.9
160°-170°	608.7	3.8
170°-180°	209.5	1.3
0°-30°	2848.0	17.6
0°-40°	4568.7	28.3
0°-60°	7785.8	48.2
0°-90°	9689.6	60.0
90°-120°	1060.8	6.6
90°-150°	4690.4	29.1
90°-180°	6453.0	40.0
0°-180°	16142.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3807	3807	3807	3807	3807	
5°	3807	3792	3752	3781	3774	361
15°	3624	3602	3554	3569	3551	1021
25°	3280	3251	3188	3196	3188	1509
35°	2830	2793	2734	2712	2694	1767
45°	2303	2277	2222	2182	2167	1777
55°	1743	1720	1677	1633	1614	1558
65°	1175	1153	1117	1084	1065	1162
75°	615	608	589	567	575	656
85°	150	146	143	132	128	167
90°	2	19	32	40	43	15
95°	104	51	62	70	68	123
105°	484	532	97	115	121	517
115°	916	943	983	245	131	902
125°	1295	1316	1346	1357	1362	1155
135°	1602	1628	1642	1658	1655	1238
145°	1859	1857	1884	1895	1887	1163
155°	2047	2032	2052	2061	2048	943
165°	2157	2147	2152	2163	2152	609
175°	2206	2195	2198	2209	2193	210
180°	2201	2201	2201	2201	2201	

TEST NUMBER: P917557

CATALOG NUMBER: DFN2DIP-SQ3F0-120D080US930-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3806.9	3806.9	3806.9	3806.9	3806.9
2.5°	3829.0	3810.7	3770.3	3806.9	3799.9
5°	3806.9	3792.4	3752.1	3781.2	3774.2
7.5°	3781.2	3759.4	3719.1	3748.6	3741.2
10°	3741.2	3715.6	3671.7	3700.8	3690.0
12.5°	3686.0	3664.3	3620.4	3638.7	3631.3
15°	3623.9	3602.2	3554.4	3569.1	3550.9
17.5°	3547.0	3525.3	3477.5	3495.8	3477.5
20°	3462.7	3441.0	3389.8	3400.6	3386.3
22.5°	3378.8	3345.8	3298.0	3298.0	3290.7
25°	3279.8	3250.7	3188.5	3195.6	3188.5
27.5°	3169.9	3144.3	3096.9	3086.0	3067.8
30°	3060.4	3030.9	2976.1	2965.2	2950.5
32.5°	2943.1	2921.4	2862.7	2840.6	2825.8
35°	2829.7	2793.2	2734.5	2712.4	2694.2
37.5°	2701.5	2668.6	2609.9	2584.3	2566.0
40°	2569.9	2540.4	2481.7	2449.1	2434.3
42.5°	2441.7	2412.2	2353.9	2317.1	2295.3
45°	2302.6	2277.0	2221.9	2181.9	2167.1
47.5°	2167.1	2141.5	2082.8	2042.5	2020.7
50°	2024.2	2006.0	1954.7	1903.4	1885.1
52.5°	1885.1	1859.5	1812.2	1771.7	1746.1
55°	1742.6	1720.5	1676.6	1632.7	1614.5
57.5°	1599.7	1581.4	1533.7	1489.8	1475.0
60°	1456.8	1442.4	1391.1	1350.8	1339.9
62.5°	1317.8	1292.1	1255.6	1219.1	1204.4
65°	1175.3	1153.1	1116.6	1083.5	1065.4
67.5°	1028.8	1010.2	977.5	951.9	937.2
70°	893.2	878.5	845.5	819.9	805.5
72.5°	754.2	739.5	721.2	695.6	684.7
75°	614.8	607.8	589.1	567.4	574.8
77.5°	490.5	475.7	468.4	457.5	446.6
80°	366.2	362.3	355.0	344.1	336.7
82.5°	248.9	248.9	245.5	230.7	230.7
85°	149.9	146.4	142.9	131.7	128.2
87.5°	66.0	58.6	51.3	40.4	36.5
90°	1.5	19.1	31.8	39.9	43.0
92.5°	39.9	33.5	38.2	41.4	43.0
95°	103.5	50.9	62.0	70.2	68.5
97.5°	186.3	55.8	81.1	86.1	87.6
100°	282.0	63.8	90.8	103.5	106.6
102.5°	387.0	383.9	94.0	111.4	116.3
105°	484.2	532.1	97.2	114.6	121.1
107.5°	597.3	637.0	100.4	117.8	124.3
110°	705.7	739.0	278.8	119.5	125.8

TEST NUMBER: P917557

CATALOG NUMBER: DFN2DIP-SQ3F0-120D080US930-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	807.6	836.2	809.2	122.5	127.5
115°	915.8	942.9	982.8	245.3	130.7
117.5°	1009.8	1041.6	1068.9	840.9	423.7
120°	1115.0	1138.8	1167.6	1186.7	971.6
122.5°	1204.0	1229.6	1261.6	1271.0	1272.8
125°	1294.9	1315.6	1345.9	1357.1	1361.8
127.5°	1377.7	1400.0	1424.1	1439.9	1441.4
130°	1455.8	1481.3	1498.8	1516.4	1514.8
132.5°	1535.5	1556.2	1573.7	1588.0	1586.5
135°	1602.4	1627.9	1642.1	1658.2	1655.0
137.5°	1672.4	1691.5	1707.6	1723.5	1718.7
140°	1740.8	1753.7	1771.2	1785.5	1777.5
142.5°	1798.4	1809.5	1830.1	1842.8	1834.8
145°	1858.9	1857.2	1884.2	1895.4	1887.4
147.5°	1911.3	1906.6	1933.6	1941.6	1935.3
150°	1962.3	1951.2	1976.7	1986.1	1978.2
152.5°	2005.3	1992.6	2016.4	2026.1	2014.9
155°	2046.7	2032.5	2051.6	2061.1	2048.4
157.5°	2080.2	2067.5	2081.9	2093.0	2080.2
160°	2108.9	2099.3	2108.9	2118.4	2107.2
162.5°	2134.3	2124.8	2132.7	2143.9	2129.6
165°	2156.6	2147.2	2151.9	2163.0	2151.9
167.5°	2174.2	2164.5	2169.4	2180.6	2166.2
170°	2188.6	2178.9	2182.1	2193.3	2178.9
172.5°	2198.0	2188.6	2191.8	2202.9	2188.6
175°	2206.0	2194.8	2198.0	2209.1	2193.3
177.5°	2209.1	2198.0	2199.7	2210.8	2196.5
180°	2201.2	2201.2	2201.2	2201.2	2201.2

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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	13.23	14.19	14.10	15.08	16.20	12.79	13.75	13.65	14.63	15.75
	3H	14.90	15.76	15.77	16.65	17.80	14.41	15.27	15.28	16.16	17.31
	4H	15.48	16.30	16.38	17.20	18.36	14.99	15.80	15.88	16.71	17.86
	6H	15.89	16.64	16.79	17.55	18.72	15.39	16.14	16.29	17.05	18.22
	8H	15.99	16.71	16.91	17.63	18.80	15.49	16.20	16.40	17.13	18.30
	12H	16.04	16.72	16.96	17.64	18.84	15.53	16.21	16.45	17.13	18.33
4H	2H	13.70	14.51	14.60	15.42	16.57	13.35	14.16	14.25	15.06	16.22
	3H	15.57	16.25	16.48	17.18	18.36	15.16	15.84	16.07	16.78	17.95
	4H	16.28	16.90	17.21	17.83	19.03	15.86	16.48	16.78	17.41	18.61
	6H	16.80	17.34	17.74	18.29	19.49	16.37	16.90	17.30	17.86	19.06
	8H	16.95	17.45	17.89	18.40	19.61	16.51	17.01	17.45	17.96	19.17
	12H	17.03	17.48	17.98	18.44	19.66	16.58	17.03	17.53	17.99	19.21
8H	4H	16.49	16.99	17.42	17.93	19.14	16.11	16.61	17.05	17.56	18.77
	6H	17.11	17.53	18.08	18.52	19.73	16.73	17.14	17.69	18.13	19.34
	8H	17.33	17.70	18.31	18.68	19.91	16.94	17.31	17.91	18.28	19.51
	12H	17.47	17.79	18.44	18.76	20.04	17.05	17.38	18.03	18.35	19.63
12H	4H	16.47	16.93	17.43	17.89	19.11	16.11	16.56	17.06	17.52	18.74
	6H	17.14	17.51	18.12	18.49	19.72	16.77	17.14	17.74	18.12	19.34
	8H	17.39	17.71	18.36	18.68	19.96	17.01	17.33	17.98	18.30	19.58