

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: P917837

Luminaire Tested: DFN2DIP-SQ4F0-140D080US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917837
REPORT IS A COMBINATION OF REPORTS P901629 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-140D080US930-FLLONL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

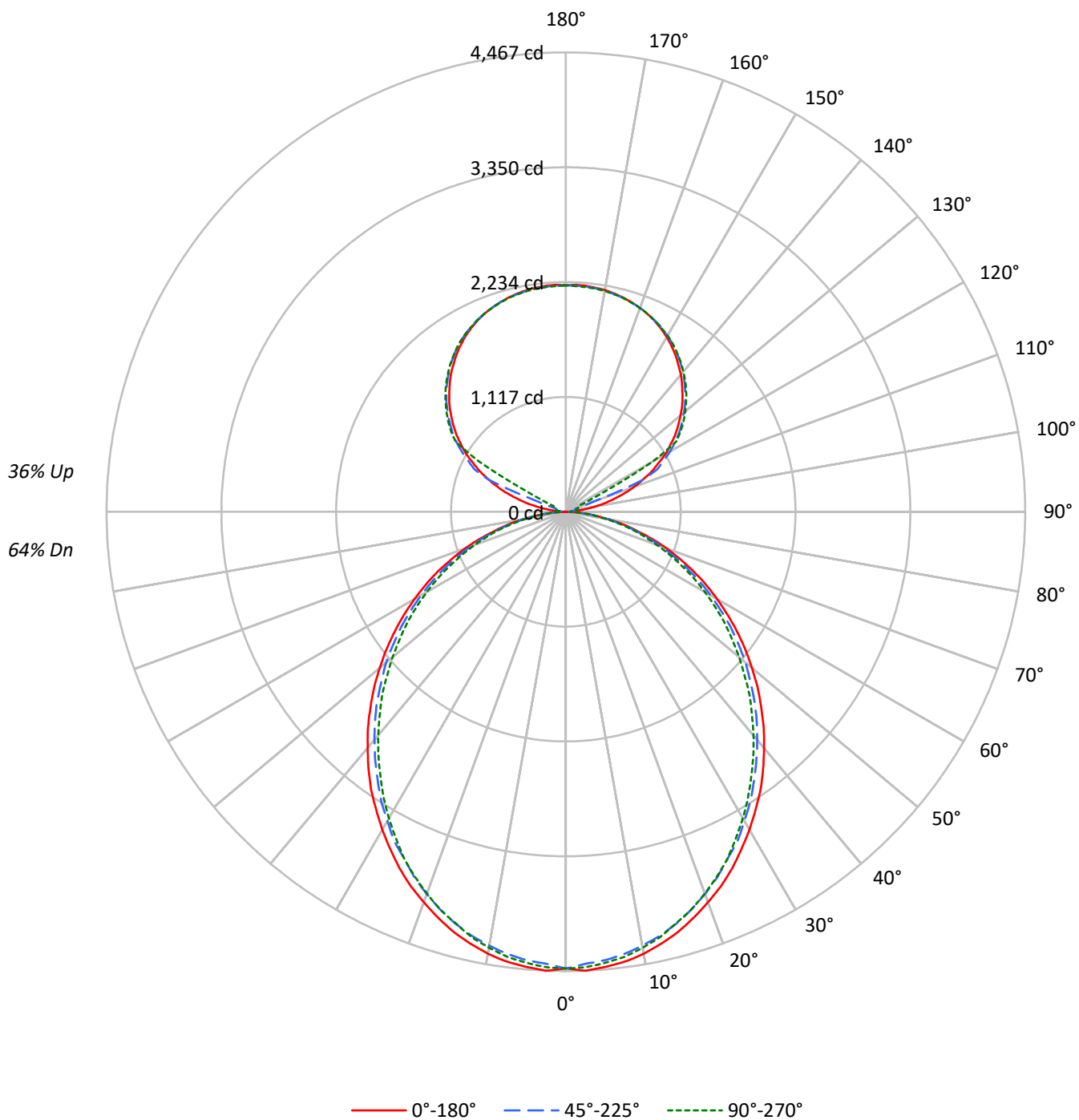
Lumens per Lamp: N/A
Luminaire Lumens: 17757.2 lumens
Efficiency: N/A
Efficacy: 87.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 203.3
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
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	104	104	104	104	91	91	91	79	79	79	69	69	69
1	101	96	92	89	94	91	87	84	80	77	75	70	68	66	61	59	58
2	92	84	78	73	86	79	74	69	70	66	62	61	58	55	53	51	49
3	84	74	67	61	78	70	63	58	62	57	52	54	50	47	47	44	42
4	77	66	58	51	72	62	55	49	55	49	45	48	44	40	42	39	36
5	71	59	50	44	66	55	48	42	49	43	39	44	39	35	38	34	31
6	65	53	44	38	61	50	42	37	44	38	34	39	34	31	35	31	28
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	32	28	25
8	56	43	35	30	52	41	34	29	37	31	27	33	28	24	29	25	22
9	52	40	32	27	49	38	31	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	35	28	23	31	26	22	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3116	3116	3116
5°	3121	3074	3095
10°	3096	3033	3053
15°	3050	2983	2989
20°	2989	2915	2923
25°	2928	2832	2846
30°	2851	2756	2748
35°	2778	2665	2645
40°	2689	2574	2547
45°	2599	2483	2446
50°	2502	2387	2330
55°	2400	2276	2223
60°	2284	2144	2101
65°	2158	2007	1956
70°	1998	1841	1801
75°	1775	1642	1660
80°	1508	1389	1386
85°	1090	950	932

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2599 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	418.0	2.4
10°-20°	1176.1	6.6
20°-30°	1728.5	9.7
30°-40°	2007.5	11.3
40°-50°	2005.0	11.3
50°-60°	1748.3	9.8
60°-70°	1292.4	7.3
70°-80°	731.2	4.1
80°-90°	196.8	1.1
90°-100°	72.6	0.4
100°-110°	270.6	1.5
110°-120°	717.6	4.0
120°-130°	1190.2	6.7
130°-140°	1264.3	7.1
140°-150°	1175.0	6.6
150°-160°	944.7	5.3
160°-170°	608.7	3.4
170°-180°	209.5	1.2
0°-30°	3322.6	18.7
0°-40°	5330.1	30.0
0°-60°	9083.5	51.2
0°-90°	11303.9	63.7
90°-120°	1060.8	6.0
90°-150°	4690.4	26.4
90°-180°	6453.0	36.3
0°-180°	17757.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4441	4441	4441	4441	4441	
5°	4441	4424	4377	4411	4403	422
15°	4228	4202	4147	4164	4143	1191
25°	3826	3792	3720	3728	3720	1761
35°	3301	3259	3190	3164	3143	2062
45°	2686	2657	2592	2546	2528	2073
55°	2033	2007	1956	1905	1884	1818
65°	1371	1345	1303	1264	1243	1356
75°	717	709	687	662	671	766
85°	175	171	167	154	150	195
90°	2	19	32	40	43	16
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	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4441.3	4441.3	4441.3	4441.3	4441.3
2.5°	4467.1	4445.8	4398.7	4441.3	4433.2
5°	4441.3	4424.5	4377.4	4411.4	4403.3
7.5°	4411.4	4386.1	4338.9	4373.3	4364.7
10°	4364.7	4334.9	4283.7	4317.7	4304.9
12.5°	4300.4	4275.0	4223.8	4245.1	4236.5
15°	4227.9	4202.5	4146.8	4164.1	4142.7
17.5°	4138.2	4112.9	4057.1	4078.4	4057.1
20°	4039.9	4014.5	3954.7	3967.4	3950.6
22.5°	3942.0	3903.5	3847.7	3847.7	3839.2
25°	3826.4	3792.4	3720.0	3728.1	3720.0
27.5°	3698.2	3668.4	3613.1	3600.4	3579.1
30°	3570.4	3536.0	3472.1	3459.5	3442.2
32.5°	3433.6	3408.3	3339.8	3314.0	3296.7
35°	3301.3	3258.7	3190.3	3164.5	3143.1
37.5°	3151.8	3113.3	3044.8	3015.0	2993.6
40°	2998.2	2963.8	2895.3	2857.3	2840.0
42.5°	2848.7	2814.2	2746.3	2703.2	2677.8
45°	2686.4	2656.6	2592.2	2545.5	2528.3
47.5°	2528.3	2498.4	2430.0	2382.9	2357.5
50°	2361.6	2340.3	2280.5	2220.6	2199.3
52.5°	2199.3	2169.4	2114.1	2067.0	2037.2
55°	2033.1	2007.3	1956.1	1904.9	1883.6
57.5°	1866.3	1845.0	1789.3	1738.1	1720.9
60°	1699.6	1682.9	1623.0	1575.9	1563.2
62.5°	1537.4	1507.5	1464.8	1422.3	1405.1
65°	1371.1	1345.2	1302.7	1264.1	1242.8
67.5°	1200.3	1178.5	1140.4	1110.5	1093.3
70°	1042.1	1024.9	986.4	956.5	939.7
72.5°	880.0	862.7	841.4	811.5	798.8
75°	717.3	709.1	687.4	662.0	670.6
77.5°	572.3	555.1	546.4	533.8	521.1
80°	427.3	422.7	414.2	401.5	392.8
82.5°	290.4	290.4	286.3	269.1	269.1
85°	174.9	170.8	166.7	153.6	149.5
87.5°	77.0	68.4	59.8	47.1	42.6
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

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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	12.41	13.41	13.24	14.26	15.32	11.96	12.96	12.79	13.81	14.88
	3H	14.08	14.98	14.92	15.84	16.93	13.59	14.49	14.43	15.35	16.44
	4H	14.68	15.53	15.54	16.40	17.49	14.18	15.03	15.04	15.90	17.00
	6H	15.09	15.87	15.96	16.75	17.86	14.59	15.37	15.46	16.25	17.36
	8H	15.20	15.94	16.08	16.84	17.95	14.70	15.44	15.58	16.34	17.45
	12H	15.25	15.96	16.14	16.85	17.99	14.74	15.45	15.63	16.34	17.48
4H	2H	12.88	13.73	13.75	14.60	15.70	12.53	13.38	13.39	14.25	15.35
	3H	14.77	15.48	15.64	16.38	17.49	14.36	15.07	15.24	15.97	17.08
	4H	15.49	16.14	16.38	17.03	18.18	15.07	15.71	15.95	16.61	17.75
	6H	16.02	16.58	16.92	17.50	18.64	15.59	16.14	16.49	17.07	18.21
	8H	16.17	16.69	17.08	17.61	18.77	15.74	16.26	16.64	17.17	18.33
	12H	16.26	16.72	17.18	17.66	18.82	15.81	16.28	16.73	17.21	18.37
8H	4H	15.70	16.22	16.60	17.14	18.29	15.32	15.84	16.23	16.76	17.92
	6H	16.34	16.77	17.27	17.73	18.89	15.96	16.39	16.89	17.35	18.50
	8H	16.57	16.95	17.51	17.90	19.07	16.17	16.56	17.12	17.50	18.68
	12H	16.71	17.04	17.65	17.99	19.21	16.30	16.63	17.24	17.57	18.80
12H	4H	15.69	16.16	16.62	17.10	18.26	15.32	15.79	16.25	16.73	17.89
	6H	16.37	16.75	17.31	17.70	18.88	16.00	16.38	16.94	17.33	18.51
	8H	16.62	16.96	17.57	17.90	19.13	16.24	16.58	17.19	17.52	18.75