

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: P918417

Luminaire Tested: DFN2DIP-TR4F0-100D080US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918417
REPORT IS A COMBINATION OF REPORTS P901974 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-100D080US930-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

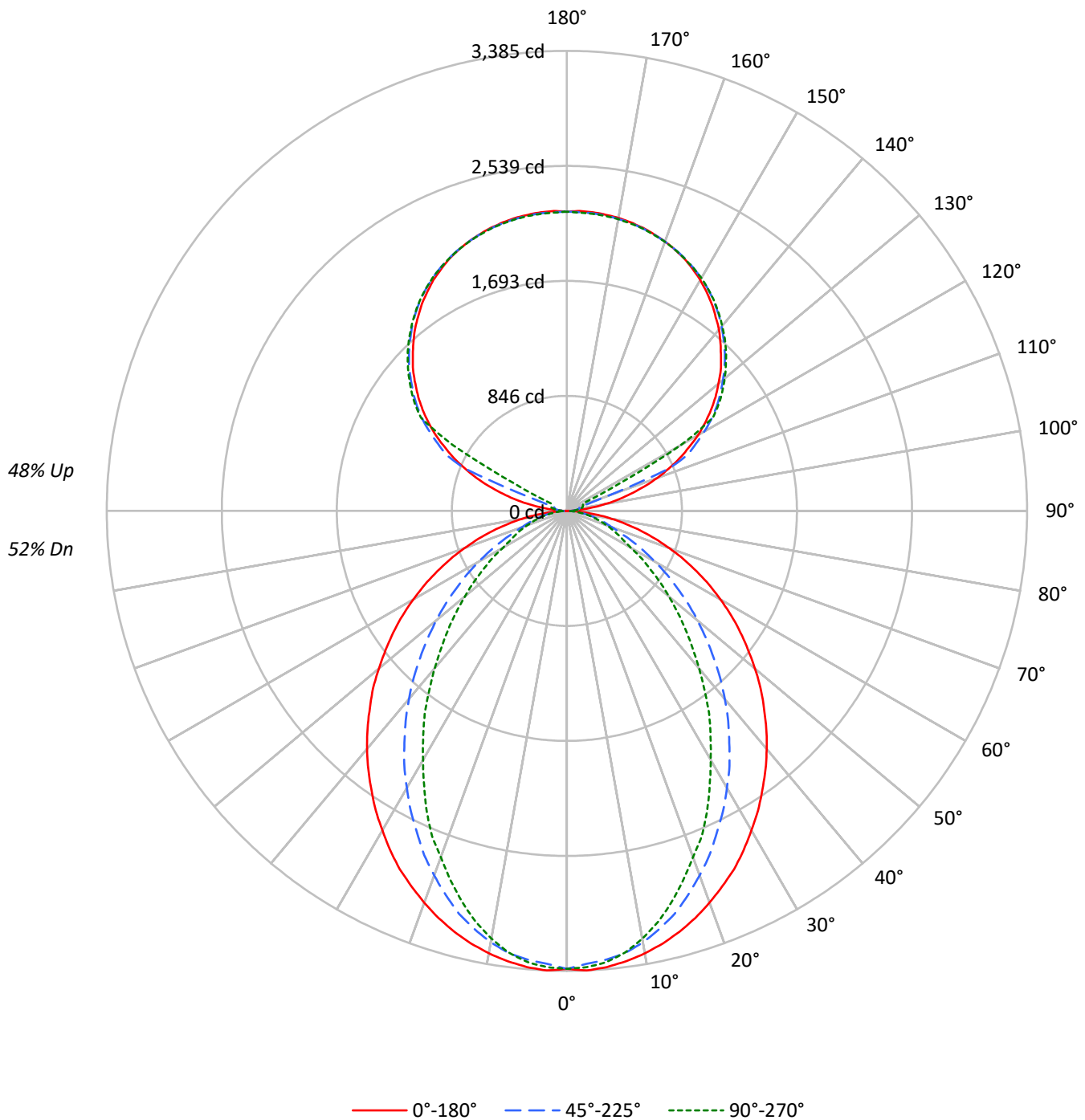
Lumens per Lamp: N/A
Luminaire Lumens: 13387.2 lumens
Efficiency: N/A
Efficacy: 83.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 160.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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	108	108	108	108	99	99	99	99	84	84	84	70	70	70	58	58	58
1	99	95	91	87	91	88	84	82	75	72	70	63	61	60	52	51	50
2	90	83	77	72	83	77	72	68	66	62	59	56	53	51	46	44	43
3	83	74	66	61	76	68	62	57	59	54	50	50	46	43	41	39	37
4	76	65	58	52	70	61	54	49	52	47	43	45	41	38	37	35	32
5	70	59	51	45	64	55	48	42	47	42	38	40	36	33	34	31	28
6	65	53	45	39	60	49	42	37	43	37	33	37	32	29	31	28	25
7	60	48	40	35	55	45	38	33	39	33	29	33	29	26	28	25	23
8	56	44	36	31	51	41	34	29	36	30	26	31	26	23	26	23	20
9	52	40	32	28	48	37	31	26	33	27	24	28	24	21	24	21	19
10	48	37	30	25	45	34	28	24	30	25	21	26	22	19	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2677	2677	2677
5°	2681	2634	2651
10°	2655	2583	2565
15°	2618	2497	2431
20°	2570	2380	2268
25°	2520	2248	2110
30°	2454	2112	1909
35°	2389	1967	1733
40°	2323	1816	1531
45°	2246	1650	1348
50°	2166	1481	1169
55°	2083	1301	997
60°	1987	1113	821
65°	1876	921	739
70°	1742	743	669
75°	1573	655	608
80°	1329	549	527
85°	926	366	396

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2246 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	315.8	2.4
10°-20°	866.9	6.5
20°-30°	1217.2	9.1
30°-40°	1326.8	9.9
40°-50°	1219.5	9.1
50°-60°	957.7	7.2
60°-70°	623.4	4.7
70°-80°	320.9	2.4
80°-90°	85.8	0.6
90°-100°	72.6	0.5
100°-110°	270.6	2.0
110°-120°	717.6	5.4
120°-130°	1190.2	8.9
130°-140°	1264.3	9.4
140°-150°	1175.0	8.8
150°-160°	944.7	7.1
160°-170°	608.7	4.5
170°-180°	209.5	1.6
0°-30°	2399.9	17.9
0°-40°	3726.7	27.8
0°-60°	5903.9	44.1
0°-90°	6933.9	51.8
90°-120°	1060.8	7.9
90°-150°	4690.4	35.0
90°-180°	6453.0	48.2
0°-180°	13387.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3370	3370	3370	3370	3370	
5°	3370	3354	3315	3342	3333	320
15°	3205	3171	3068	3010	2979	903
25°	2909	2812	2610	2485	2440	1338
35°	2507	2351	2083	1891	1823	1569
45°	2049	1845	1525	1308	1235	1583
55°	1558	1320	991	808	750	1392
65°	1052	805	531	427	418	1043
75°	561	348	244	223	220	593
85°	131	67	58	58	58	150
90°	2	19	32	40	43	13
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°	3369.6	3369.6	3369.6	3369.6	3369.6
2.5°	3384.8	3369.6	3336.0	3366.7	3360.6
5°	3369.6	3354.4	3314.6	3342.2	3333.0
7.5°	3342.2	3324.0	3281.2	3293.2	3278.1
10°	3305.5	3284.2	3223.4	3214.0	3195.9
12.5°	3260.0	3232.4	3149.9	3131.8	3098.1
15°	3204.9	3171.3	3067.7	3009.8	2979.4
17.5°	3140.9	3092.0	2963.9	2896.9	2848.1
20°	3067.7	3006.6	2854.2	2778.2	2710.9
22.5°	2988.5	2918.3	2741.3	2637.8	2592.2
25°	2909.2	2811.6	2610.3	2485.4	2439.5
27.5°	2814.7	2710.9	2488.3	2345.0	2274.8
30°	2714.1	2597.9	2354.0	2198.8	2116.3
32.5°	2616.5	2476.0	2226.3	2043.1	1966.7
35°	2506.7	2351.2	2082.9	1890.8	1823.4
37.5°	2400.0	2232.0	1948.6	1738.1	1662.0
40°	2287.1	2104.3	1808.2	1591.8	1512.5
42.5°	2171.2	1976.1	1668.2	1442.3	1366.3
45°	2049.3	1844.8	1524.9	1308.1	1234.9
47.5°	1933.5	1717.0	1387.6	1170.8	1103.9
50°	1805.3	1588.9	1253.4	1042.8	979.0
52.5°	1680.1	1451.4	1125.3	924.0	866.1
55°	1558.1	1320.4	991.0	808.2	750.2
57.5°	1433.3	1189.3	872.3	701.4	652.6
60°	1305.1	1061.2	747.1	591.7	542.9
62.5°	1180.2	936.3	640.3	494.1	469.8
65°	1052.1	804.9	530.6	427.1	417.7
67.5°	930.2	683.0	427.1	375.0	365.9
70°	802.0	564.3	353.6	323.2	311.0
72.5°	680.0	454.2	295.7	271.4	265.3
75°	561.0	347.5	243.9	222.6	219.6
77.5°	442.3	246.9	192.2	179.9	173.7
80°	332.2	177.0	146.3	134.3	134.3
82.5°	231.6	119.0	100.6	94.5	94.5
85°	131.0	66.9	57.9	57.9	57.9
87.5°	48.8	24.3	24.3	21.4	21.4
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	10.73	11.57	11.68	12.53	13.78	6.70	7.55	7.65	8.51	9.76
	3H	12.41	13.16	13.37	14.13	15.40	7.89	8.65	8.85	9.62	10.89
	4H	13.02	13.73	13.99	14.70	15.98	8.35	9.06	9.32	10.03	11.31
	6H	13.44	14.10	14.42	15.08	16.37	8.67	9.33	9.65	10.30	11.60
	8H	13.57	14.19	14.56	15.19	16.48	8.76	9.38	9.75	10.38	11.67
	12H	13.63	14.22	14.62	15.21	16.52	8.80	9.40	9.80	10.39	11.70
4H	2H	10.75	11.46	11.73	12.44	13.72	7.30	8.01	8.28	8.99	10.27
	3H	12.58	13.17	13.57	14.18	15.47	8.65	9.25	9.64	10.25	11.54
	4H	13.27	13.81	14.27	14.81	16.13	9.20	9.74	10.20	10.74	12.06
	6H	13.79	14.25	14.80	15.27	16.59	9.62	10.09	10.63	11.11	12.42
	8H	13.96	14.40	14.97	15.41	16.74	9.75	10.19	10.76	11.20	12.53
	12H	14.06	14.45	15.09	15.48	16.81	9.82	10.21	10.85	11.24	12.57
8H	4H	13.24	13.68	14.25	14.69	16.02	9.48	9.92	10.49	10.93	12.26
	6H	13.81	14.17	14.84	15.22	16.55	10.00	10.36	11.04	11.42	12.74
	8H	14.02	14.34	15.07	15.38	16.73	10.20	10.51	11.24	11.55	12.90
	12H	14.16	14.44	15.21	15.48	16.87	10.32	10.59	11.36	11.63	13.02
12H	4H	13.19	13.59	14.22	14.61	15.95	9.49	9.88	10.52	10.91	12.24
	6H	13.78	14.10	14.83	15.14	16.49	10.05	10.37	11.09	11.41	12.76
	8H	14.01	14.28	15.05	15.32	16.71	10.26	10.54	11.31	11.58	12.97

END OF REPORT