

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: P917087

Luminaire Tested: DFN2DIP-PN4F0-120D070US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917087
REPORT IS A COMBINATION OF REPORTS P901200 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-120D070US930-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

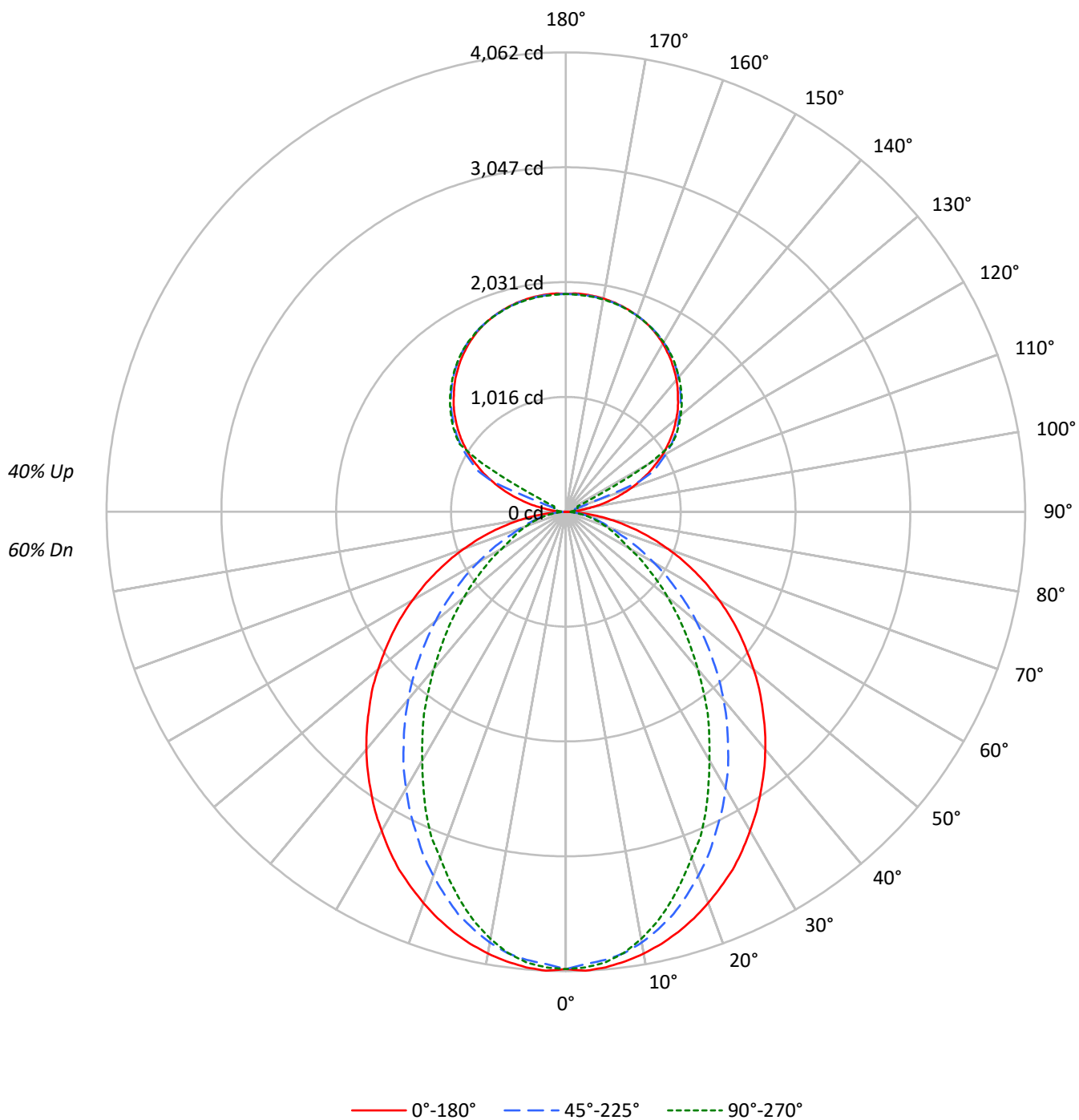
Lumens per Lamp: N/A
Luminaire Lumens: 13966.1 lumens
Efficiency: N/A
Efficacy: 78.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 178.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	109	109	109	109	102	102	102	102	89	89	89	76	76	76	65	65	65
1	101	96	93	89	94	90	87	84	79	76	74	68	66	65	58	57	56
2	92	85	79	74	86	80	74	70	70	66	62	60	58	55	52	50	48
3	84	75	68	62	79	71	64	59	62	57	53	54	50	47	47	44	42
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	67	56	49	44	50	44	40	44	39	36	38	35	32
6	66	54	46	40	62	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	26
8	57	45	37	32	53	42	35	31	38	32	28	34	29	26	30	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2952	2952	2952
5°	2956	2905	2924
10°	2927	2849	2829
15°	2887	2755	2683
20°	2833	2625	2503
25°	2779	2480	2329
30°	2706	2331	2108
35°	2634	2171	1914
40°	2561	2006	1692
45°	2476	1822	1490
50°	2388	1636	1293
55°	2296	1438	1104
60°	2190	1230	909
65°	2068	1019	819
70°	1920	823	742
75°	1734	726	676
80°	1465	610	588
85°	1021	410	446

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2476 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	379.0	2.7
10°-20°	1040.3	7.4
20°-30°	1460.6	10.5
30°-40°	1592.1	11.4
40°-50°	1463.4	10.5
50°-60°	1149.2	8.2
60°-70°	748.0	5.4
70°-80°	385.1	2.8
80°-90°	101.7	0.7
90°-100°	63.5	0.5
100°-110°	236.8	1.7
110°-120°	627.9	4.5
120°-130°	1041.5	7.5
130°-140°	1106.3	7.9
140°-150°	1028.1	7.4
150°-160°	826.6	5.9
160°-170°	532.6	3.8
170°-180°	183.3	1.3
0°-30°	2879.9	20.6
0°-40°	4472.0	32.0
0°-60°	7084.6	50.7
0°-90°	8319.4	59.6
90°-120°	928.2	6.6
90°-150°	4104.1	29.4
90°-180°	5647.0	40.4
0°-180°	13966.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4044	4044	4044	4044	4044	
5°	4044	4025	3978	4010	4000	383
15°	3846	3806	3681	3612	3575	1084
25°	3491	3374	3132	2982	2927	1606
35°	3008	2821	2500	2269	2188	1883
45°	2459	2214	1830	1570	1482	1899
55°	1870	1584	1189	970	900	1671
65°	1263	966	637	512	501	1252
75°	673	417	293	267	264	712
85°	157	80	70	70	70	181
90°	1	17	28	35	38	13
95°	90	44	54	61	60	107
105°	424	466	85	100	106	453
115°	801	825	860	215	114	789
125°	1133	1151	1178	1188	1192	1010
135°	1402	1424	1437	1451	1448	1083
145°	1626	1625	1649	1658	1652	1017
155°	1791	1778	1795	1803	1792	825
165°	1887	1879	1883	1893	1883	533
175°	1930	1920	1923	1933	1919	184
180°	1926	1926	1926	1926	1926	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4043.6	4043.6	4043.6	4043.6	4043.6
2.5°	4061.8	4043.6	4003.2	4040.0	4032.6
5°	4043.6	4025.3	3977.5	4010.5	3999.7
7.5°	4010.5	3988.8	3937.6	3951.9	3933.7
10°	3966.7	3941.1	3868.0	3856.8	3835.1
12.5°	3911.9	3878.9	3779.9	3758.2	3717.8
15°	3845.9	3805.6	3681.3	3611.8	3575.3
17.5°	3769.0	3710.4	3556.7	3476.4	3417.7
20°	3681.3	3607.9	3425.1	3333.8	3253.0
22.5°	3586.2	3502.0	3289.6	3165.3	3110.6
25°	3491.1	3373.8	3132.3	2982.4	2927.3
27.5°	3377.7	3253.0	2985.9	2814.0	2729.7
30°	3257.0	3117.6	2824.8	2638.5	2539.5
32.5°	3139.7	2971.2	2671.5	2451.8	2360.1
35°	3008.1	2821.3	2499.5	2268.9	2188.1
37.5°	2880.0	2678.5	2338.4	2085.6	1994.4
40°	2744.5	2525.1	2169.9	1910.2	1815.0
42.5°	2605.4	2371.4	2001.8	1730.8	1639.6
45°	2459.1	2213.8	1829.8	1569.7	1481.9
47.5°	2320.1	2060.4	1665.2	1405.1	1324.7
50°	2166.4	1906.7	1504.1	1251.3	1174.8
52.5°	2016.2	1741.6	1350.3	1108.8	1039.3
55°	1869.8	1584.5	1189.2	969.8	900.3
57.5°	1719.9	1427.2	1046.7	841.7	783.1
60°	1566.2	1273.4	896.4	710.1	651.5
62.5°	1416.3	1123.6	768.3	592.9	563.7
65°	1262.6	966.0	636.7	512.5	501.2
67.5°	1116.2	819.5	512.5	450.0	439.1
70°	962.5	677.1	424.4	387.8	373.1
72.5°	816.1	545.1	354.8	325.7	318.4
75°	673.2	416.9	292.8	267.1	263.6
77.5°	530.8	296.2	230.6	215.9	208.5
80°	398.8	212.4	175.5	161.1	161.1
82.5°	278.0	142.8	120.7	113.3	113.3
85°	157.3	80.4	69.5	69.5	69.5
87.5°	58.6	29.1	29.1	25.6	25.6
90°	1.3	16.7	27.8	34.9	37.6
92.5°	34.9	29.3	33.4	36.3	37.6
95°	90.5	44.5	54.3	61.4	59.9
97.5°	163.0	48.8	71.0	75.3	76.6
100°	246.8	55.8	79.4	90.5	93.4
102.5°	338.6	336.0	82.3	97.5	101.7
105°	423.7	465.5	85.0	100.3	105.9
107.5°	522.6	557.4	87.9	103.1	108.8
110°	617.5	646.6	243.9	104.6	110.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	706.7	731.6	708.0	107.2	111.5
115°	801.4	825.0	859.9	214.7	114.4
117.5°	883.6	911.4	935.2	735.8	370.7
120°	975.6	996.5	1021.7	1038.4	850.2
122.5°	1053.5	1075.9	1103.9	1112.1	1113.6
125°	1133.0	1151.2	1177.7	1187.5	1191.6
127.5°	1205.5	1225.0	1246.0	1260.0	1261.3
130°	1273.8	1296.2	1311.4	1326.8	1325.5
132.5°	1343.5	1361.7	1377.0	1389.5	1388.2
135°	1402.1	1424.4	1436.9	1450.9	1448.1
137.5°	1463.3	1480.1	1494.1	1508.1	1503.9
140°	1523.2	1534.5	1549.7	1562.3	1555.3
142.5°	1573.5	1583.3	1601.3	1612.4	1605.5
145°	1626.5	1625.1	1648.7	1658.5	1651.5
147.5°	1672.3	1668.3	1691.9	1698.8	1693.4
150°	1717.0	1707.3	1729.7	1737.9	1731.0
152.5°	1754.6	1743.5	1764.4	1772.8	1763.1
155°	1790.9	1778.4	1795.1	1803.4	1792.4
157.5°	1820.2	1809.1	1821.6	1831.4	1820.2
160°	1845.3	1836.9	1845.3	1853.6	1843.8
162.5°	1867.5	1859.2	1866.1	1875.9	1863.4
165°	1887.0	1878.8	1882.8	1892.6	1882.8
167.5°	1902.4	1893.9	1898.3	1908.0	1895.5
170°	1915.0	1906.6	1909.3	1919.1	1906.6
172.5°	1923.3	1915.0	1917.8	1927.5	1915.0
175°	1930.2	1920.4	1923.3	1933.0	1919.1
177.5°	1933.0	1923.3	1924.8	1934.5	1921.9
180°	1926.1	1926.1	1926.1	1926.1	1926.1

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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	11.76	12.68	12.64	13.57	14.70	7.73	8.64	8.61	9.54	10.67
	3H	13.45	14.27	14.34	15.17	16.33	8.92	9.74	9.81	10.65	11.80
	4H	14.07	14.84	14.97	15.75	16.91	9.38	10.15	10.29	11.06	12.23
	6H	14.49	15.20	15.41	16.12	17.30	9.71	10.42	10.62	11.33	12.51
	8H	14.62	15.30	15.55	16.23	17.41	9.80	10.48	10.72	11.41	12.59
	12H	14.69	15.33	15.62	16.26	17.46	9.85	10.49	10.78	11.42	12.62
4H	2H	11.79	12.56	12.70	13.47	14.64	8.34	9.11	9.25	10.02	11.18
	3H	13.63	14.27	14.55	15.21	16.40	9.70	10.34	10.62	11.28	12.46
	4H	14.33	14.91	15.26	15.85	17.06	10.25	10.83	11.18	11.77	12.97
	6H	14.85	15.36	15.80	16.31	17.52	10.67	11.17	11.62	12.13	13.34
	8H	15.03	15.50	15.98	16.45	17.67	10.80	11.27	11.75	12.23	13.45
	12H	15.13	15.55	16.10	16.53	17.75	10.87	11.30	11.84	12.27	13.49
8H	4H	14.30	14.77	15.25	15.73	16.95	10.54	11.00	11.48	11.96	13.18
	6H	14.88	15.26	15.85	16.26	17.48	11.06	11.45	12.03	12.44	13.66
	8H	15.10	15.44	16.08	16.42	17.66	11.25	11.59	12.23	12.58	13.81
	12H	15.24	15.54	16.22	16.52	17.80	11.37	11.68	12.36	12.65	13.94
12H	4H	14.26	14.68	15.23	15.65	16.88	10.54	10.97	11.51	11.94	13.16
	6H	14.85	15.20	15.83	16.18	17.42	11.11	11.45	12.09	12.44	13.67
	8H	15.08	15.38	16.06	16.36	17.64	11.32	11.63	12.31	12.60	13.89

END OF REPORT