

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: P919814

Luminaire Tested: DFN2DIP-PN4F0-120D070US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919814
REPORT IS A COMBINATION OF REPORTS P899680 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-120D070US935-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

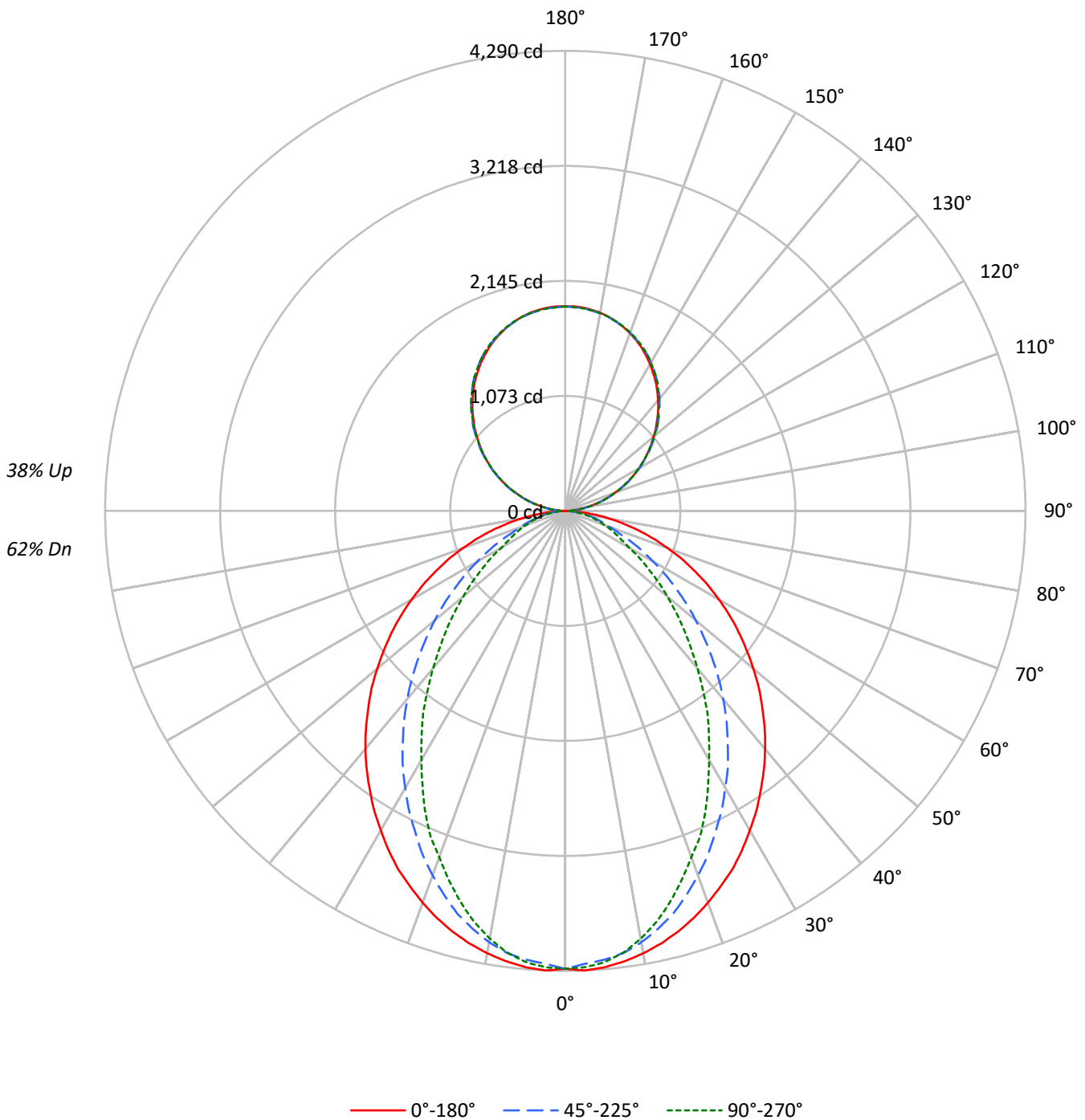
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14116.1 lumens
Efficiency: N/A
Efficacy: 78.9 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: Semi-Direct

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				20
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	67	67	67	62
1	101	97	93	90	95	91	88	85	80	78	75	70	68	66	60	59	58	60	59	58	54
2	93	85	79	74	87	80	75	71	71	67	63	62	59	56	54	52	50	54	52	50	46
3	85	76	68	63	79	71	65	60	63	58	54	55	52	48	48	46	43	48	46	43	40
4	78	67	60	54	73	64	57	51	56	51	47	50	46	42	44	40	38	44	40	38	34
5	72	60	52	47	67	57	50	45	51	45	41	45	41	37	40	36	33	40	36	33	30
6	66	55	47	41	62	52	44	39	46	40	36	41	36	33	36	32	30	36	32	30	27
7	62	49	42	36	58	47	40	35	42	36	32	38	33	29	33	29	27	33	29	27	24
8	57	45	37	32	54	43	36	31	39	33	29	34	30	26	31	27	24	31	27	24	22
9	54	41	34	29	50	39	33	28	36	30	26	32	27	24	28	25	22	28	25	22	20
10	50	38	31	26	47	36	30	25	33	27	24	30	25	22	26	23	20	26	23	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3117	3117	3117
5°	3122	3068	3088
10°	3091	3008	2988
15°	3049	2909	2833
20°	2992	2773	2643
25°	2935	2619	2459
30°	2857	2462	2226
35°	2781	2293	2021
40°	2704	2118	1786
45°	2614	1924	1573
50°	2522	1728	1366
55°	2425	1518	1166
60°	2313	1299	960
65°	2184	1076	865
70°	2028	868	783
75°	1831	767	714
80°	1547	644	621
85°	1078	433	471

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2614 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	400.2	2.8
10°-20°	1098.7	7.8
20°-30°	1542.5	10.9
30°-40°	1681.4	11.9
40°-50°	1545.4	10.9
50°-60°	1213.7	8.6
60°-70°	790.0	5.6
70°-80°	406.7	2.9
80°-90°	109.2	0.8
90°-100°	117.9	0.8
100°-110°	374.8	2.7
110°-120°	641.3	4.5
120°-130°	843.5	6.0
130°-140°	946.7	6.7
140°-150°	928.4	6.6
150°-160°	778.8	5.5
160°-170°	516.5	3.7
170°-180°	180.5	1.3
0°-30°	3041.3	21.5
0°-40°	4722.7	33.5
0°-60°	7481.7	53.0
0°-90°	8787.6	62.3
90°-120°	1134.1	8.0
90°-150°	3852.7	27.3
90°-180°	5328.0	37.7
0°-180°	14116.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4270	4270	4270	4270	4270	
5°	4270	4251	4200	4235	4224	405
15°	4062	4019	3888	3814	3776	1144
25°	3687	3563	3308	3150	3091	1696
35°	3177	2980	2640	2396	2311	1988
45°	2597	2338	1932	1658	1565	2006
55°	1975	1673	1256	1024	951	1764
65°	1333	1020	672	541	529	1322
75°	711	440	309	282	278	752
85°	166	85	73	73	73	191
90°	2	21	56	53	55	14
95°	84	100	103	103	100	93
105°	346	350	354	357	357	365
115°	644	653	650	648	644	637
125°	936	950	946	941	939	837
135°	1211	1229	1232	1230	1226	936
145°	1470	1481	1491	1492	1486	918
155°	1681	1685	1691	1699	1694	774
165°	1828	1827	1827	1838	1830	516
175°	1903	1898	1895	1906	1896	181
180°	1906	1906	1906	1906	1906	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4270.2	4270.2	4270.2	4270.2	4270.2
2.5°	4289.5	4270.2	4227.6	4266.5	4258.7
5°	4270.2	4250.9	4200.5	4235.3	4223.9
7.5°	4235.3	4212.3	4158.3	4173.4	4154.1
10°	4189.0	4162.0	4084.8	4073.0	4050.0
12.5°	4131.2	4096.4	3991.8	3968.9	3926.2
15°	4061.5	4018.9	3887.7	3814.2	3775.7
17.5°	3980.3	3918.4	3756.0	3671.2	3609.3
20°	3887.7	3810.2	3617.1	3520.7	3435.4
22.5°	3787.2	3698.2	3474.0	3342.7	3285.0
25°	3686.8	3562.9	3307.9	3149.6	3091.4
27.5°	3567.0	3435.4	3153.3	2971.7	2882.7
30°	3439.5	3292.4	2983.2	2786.4	2681.8
32.5°	3315.7	3137.7	2821.2	2589.2	2492.4
35°	3176.7	2979.5	2639.6	2396.1	2310.7
37.5°	3041.4	2828.6	2469.4	2202.5	2106.2
40°	2898.3	2666.7	2291.5	2017.2	1916.8
42.5°	2751.5	2504.3	2114.0	1827.8	1731.5
45°	2596.9	2337.9	1932.3	1657.7	1564.9
47.5°	2450.1	2175.9	1758.5	1483.8	1398.9
50°	2287.8	2013.5	1588.4	1321.5	1240.7
52.5°	2129.2	1839.3	1426.0	1171.0	1097.6
55°	1974.6	1673.3	1255.9	1024.2	950.8
57.5°	1816.3	1507.2	1105.3	888.9	827.0
60°	1654.0	1344.8	946.7	749.9	688.0
62.5°	1495.7	1186.5	811.4	626.1	595.3
65°	1333.3	1020.1	672.4	541.2	529.3
67.5°	1178.8	865.5	541.2	475.2	463.7
70°	1016.4	715.1	448.1	409.6	394.0
72.5°	861.9	575.7	374.7	344.0	336.2
75°	710.9	440.3	309.2	282.1	278.4
77.5°	560.5	312.8	243.6	228.0	220.2
80°	421.1	224.3	185.3	170.1	170.1
82.5°	293.6	150.8	127.5	119.7	119.7
85°	166.1	84.9	73.4	73.4	73.4
87.5°	61.9	30.7	30.7	27.0	27.0
90°	1.7	20.7	56.3	52.9	54.6
92.5°	35.6	48.3	50.0	51.7	51.7
95°	83.9	100.0	102.9	102.9	100.0
97.5°	139.7	154.5	160.9	160.9	160.9
100°	204.0	217.2	221.8	221.8	220.1
102.5°	271.8	281.5	287.9	289.6	287.9
105°	345.9	350.5	354.0	356.9	356.9
107.5°	419.5	426.4	426.4	427.6	419.5
110°	490.8	500.0	500.0	500.0	495.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	567.7	577.6	575.8	571.2	567.7
115°	643.6	652.8	650.0	648.2	643.6
117.5°	718.8	731.5	723.5	718.8	714.3
120°	794.7	807.4	794.7	794.7	789.5
122.5°	863.7	879.8	871.8	867.1	863.7
125°	936.1	950.5	945.9	940.7	939.0
127.5°	1006.8	1024.6	1018.3	1011.4	1006.8
130°	1072.9	1093.6	1090.7	1087.3	1080.9
132.5°	1147.0	1163.1	1164.2	1156.2	1151.6
135°	1210.8	1228.6	1232.1	1230.3	1225.7
137.5°	1282.0	1296.4	1299.2	1298.1	1291.2
140°	1344.7	1359.1	1367.1	1367.1	1360.8
142.5°	1409.0	1423.4	1428.0	1429.7	1423.4
145°	1470.0	1481.4	1490.6	1492.4	1486.1
147.5°	1524.6	1538.9	1545.8	1548.7	1542.4
150°	1580.9	1590.6	1597.0	1602.1	1597.0
152.5°	1630.8	1640.6	1648.6	1655.0	1648.6
155°	1680.8	1685.4	1690.7	1698.7	1693.5
157.5°	1724.0	1727.4	1730.3	1741.8	1733.7
160°	1762.5	1765.9	1767.6	1777.4	1770.5
162.5°	1798.1	1798.1	1799.8	1810.7	1802.7
165°	1828.5	1826.8	1826.8	1838.3	1830.2
167.5°	1856.1	1851.0	1851.0	1862.4	1854.4
170°	1876.8	1872.2	1870.5	1882.0	1872.2
172.5°	1891.2	1886.5	1884.8	1896.3	1886.5
175°	1902.6	1898.1	1894.6	1906.1	1896.3
177.5°	1909.0	1904.4	1900.9	1910.7	1900.9
180°	1906.1	1906.1	1906.1	1906.1	1906.1



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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	12.18	13.12	13.03	13.99	15.07	8.14	9.08	8.99	9.95	11.04
	3H	13.86	14.71	14.73	15.58	16.70	9.34	10.18	10.20	11.06	12.17
	4H	14.48	15.28	15.36	16.16	17.28	9.79	10.59	10.68	11.47	12.60
	6H	14.91	15.64	15.80	16.53	17.67	10.12	10.85	11.01	11.75	12.88
	8H	15.04	15.74	15.94	16.65	17.78	10.22	10.91	11.12	11.82	12.96
	12H	15.11	15.77	16.01	16.67	17.83	10.26	10.93	11.17	11.83	12.99
4H	2H	12.21	13.00	13.09	13.89	15.01	8.75	9.55	9.64	10.43	11.56
	3H	14.05	14.71	14.95	15.63	16.77	10.11	10.77	11.01	11.69	12.83
	4H	14.75	15.35	15.66	16.26	17.43	10.67	11.27	11.57	12.18	13.35
	6H	15.27	15.79	16.19	16.73	17.89	11.09	11.61	12.01	12.55	13.71
	8H	15.45	15.94	16.38	16.87	18.05	11.22	11.71	12.15	12.64	13.82
	12H	15.55	15.99	16.50	16.94	18.12	11.29	11.73	12.24	12.68	13.86
8H	4H	14.73	15.21	15.65	16.14	17.32	10.96	11.44	11.88	12.37	13.55
	6H	15.30	15.70	16.25	16.67	17.85	11.48	11.88	12.43	12.85	14.03
	8H	15.52	15.87	16.48	16.83	18.03	11.67	12.02	12.63	12.99	14.19
	12H	15.66	15.97	16.63	16.93	18.18	11.80	12.11	12.76	13.06	14.31
12H	4H	14.68	15.12	15.63	16.07	17.25	10.97	11.40	11.91	12.35	13.54
	6H	15.27	15.63	16.23	16.59	17.79	11.53	11.88	12.49	12.85	14.04
	8H	15.50	15.81	16.46	16.77	18.02	11.75	12.06	12.71	13.01	14.26