

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: P907793

Luminaire Tested: DFN2DIP-4P4F0-050D060US840-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907793
REPORT IS A COMBINATION OF REPORTS P900640 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D060US840-RLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open
No Lens
Light Source: -
Ballast/Driver: -

Summary

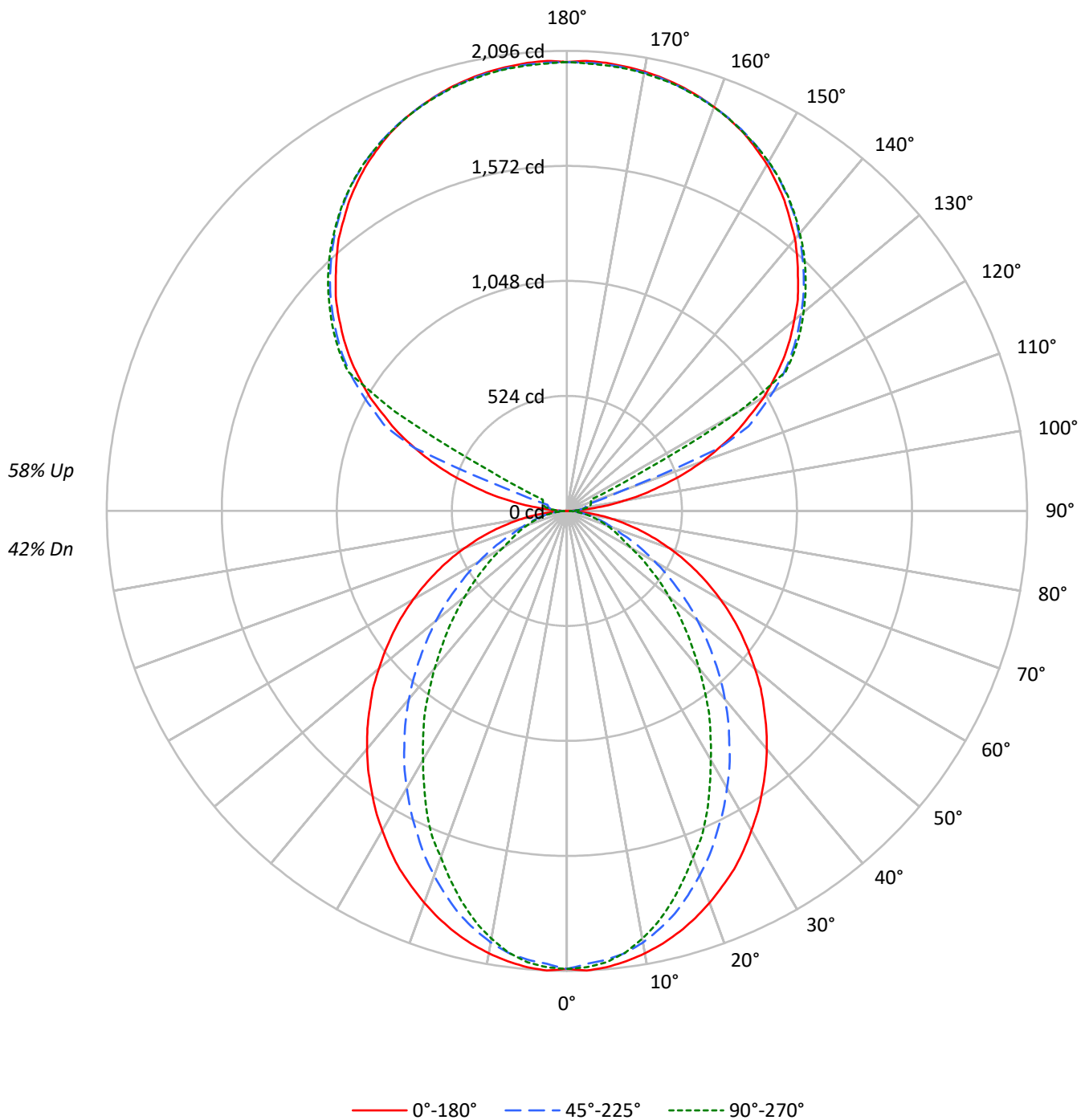
Lumens per Lamp: N/A
Luminaire Lumens: 10290.5 lumens
Efficiency: N/A
Efficacy: 102.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 100.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	43	43	42
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36
3	81	72	65	59	73	66	60	55	55	50	46	44	41	39	35	33	31
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24
6	63	51	43	38	57	47	40	35	39	34	30	32	29	26	26	23	21
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	34	29	49	39	32	27	33	28	24	27	23	20	22	19	17
9	50	38	31	26	46	35	29	25	30	25	22	25	21	18	20	17	15
10	47	35	28	23	43	33	26	22	28	23	19	23	19	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1354	1354	1354
5°	1356	1333	1341
10°	1343	1307	1298
15°	1324	1264	1231
20°	1300	1205	1149
25°	1275	1139	1069
30°	1242	1071	968
35°	1209	997	879
40°	1175	921	777
45°	1137	837	685
50°	1096	752	595
55°	1054	661	508
60°	1006	566	418
65°	950	469	377
70°	883	379	342
75°	798	335	312
80°	675	283	273
85°	472	191	209

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1137 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	1.9
10°-20°	536.9	5.2
20°-30°	753.8	7.3
30°-40°	821.7	8.0
40°-50°	755.2	7.3
50°-60°	593.1	5.8
60°-70°	386.1	3.8
70°-80°	198.7	1.9
80°-90°	54.3	0.5
90°-100°	67.4	0.7
100°-110°	251.4	2.4
110°-120°	666.7	6.5
120°-130°	1105.7	10.7
130°-140°	1174.5	11.4
140°-150°	1091.6	10.6
150°-160°	877.6	8.5
160°-170°	565.5	5.5
170°-180°	194.6	1.9
0°-30°	1486.3	14.4
0°-40°	2308.0	22.4
0°-60°	3656.4	35.5
0°-90°	4295.6	41.7
90°-120°	985.5	9.6
90°-150°	4357.2	42.3
90°-180°	5995.0	58.3
0°-180°	10290.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2087	2087	2087	2087	2087	
5°	2087	2078	2053	2070	2064	198
15°	1985	1964	1900	1864	1845	559
25°	1802	1741	1617	1539	1511	829
35°	1552	1456	1290	1171	1129	972
45°	1269	1143	944	810	765	980
55°	965	818	614	500	465	862
65°	652	499	329	264	259	646
75°	348	215	151	138	136	368
85°	81	42	36	36	36	93
90°	1	18	30	37	40	10
95°	96	47	58	65	64	114
105°	450	494	90	106	112	481
115°	851	876	913	228	121	838
125°	1203	1222	1250	1261	1265	1073
135°	1489	1512	1526	1540	1537	1150
145°	1727	1725	1750	1761	1753	1080
155°	1901	1888	1906	1915	1903	876
165°	2004	1995	1999	2009	1999	566
175°	2049	2039	2042	2052	2038	195
180°	2045	2045	2045	2045	2045	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2086.9	2086.9	2086.9	2086.9	2086.9
2.5°	2096.3	2086.9	2066.1	2085.1	2081.2
5°	2086.9	2077.5	2052.9	2069.8	2064.3
7.5°	2069.8	2058.6	2032.2	2039.6	2030.1
10°	2047.2	2034.0	1996.3	1990.5	1979.2
12.5°	2018.9	2002.0	1950.9	1939.6	1918.7
15°	1984.9	1964.1	1900.0	1864.1	1845.2
17.5°	1945.2	1915.0	1835.6	1794.1	1763.8
20°	1900.0	1862.1	1767.7	1720.6	1678.9
22.5°	1850.9	1807.4	1697.8	1633.7	1605.4
25°	1801.7	1741.2	1616.6	1539.2	1510.8
27.5°	1743.2	1678.9	1541.1	1452.3	1408.9
30°	1680.9	1609.0	1457.9	1361.7	1310.6
32.5°	1620.4	1533.5	1378.8	1265.4	1218.1
35°	1552.5	1456.1	1290.0	1170.9	1129.3
37.5°	1486.3	1382.4	1206.9	1076.4	1029.4
40°	1416.4	1303.2	1119.8	985.8	936.8
42.5°	1344.7	1223.9	1033.1	893.2	846.2
45°	1269.2	1142.6	944.3	810.1	764.8
47.5°	1197.4	1063.4	859.4	725.2	683.7
50°	1118.1	984.0	776.3	645.8	606.3
52.5°	1040.6	898.9	696.9	572.3	536.4
55°	965.0	817.7	613.7	500.5	464.6
57.5°	887.7	736.6	540.2	434.4	404.1
60°	808.3	657.2	462.6	366.5	336.2
62.5°	730.9	579.9	396.6	306.0	290.9
65°	651.6	498.6	328.6	264.5	258.7
67.5°	576.0	423.0	264.5	232.3	226.6
70°	496.8	349.4	219.0	200.2	192.6
72.5°	421.2	281.3	183.2	168.1	164.3
75°	347.5	215.2	151.1	137.8	136.0
77.5°	273.9	152.9	119.1	111.4	107.6
80°	205.8	109.6	90.6	83.1	83.1
82.5°	143.5	73.7	62.3	58.5	58.5
85°	81.2	41.5	35.9	35.9	35.9
87.5°	30.3	15.0	15.0	13.2	13.2
90°	1.4	17.8	29.5	37.1	39.9
92.5°	37.1	31.1	35.4	38.5	39.9
95°	96.1	47.3	57.7	65.2	63.6
97.5°	173.1	51.8	75.3	80.0	81.4
100°	262.0	59.2	84.3	96.1	99.1
102.5°	359.5	356.7	87.4	103.5	108.1
105°	449.8	494.2	90.3	106.4	112.5
107.5°	554.9	591.8	93.3	109.5	115.4
110°	655.6	686.5	259.0	111.1	116.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	750.2	776.8	751.6	113.8	118.5
115°	850.8	876.0	913.0	227.9	121.4
117.5°	938.1	967.7	992.9	781.2	393.5
120°	1035.8	1057.9	1084.7	1102.4	902.6
122.5°	1118.5	1142.3	1171.9	1180.7	1182.4
125°	1203.0	1222.2	1250.3	1260.7	1265.1
127.5°	1279.9	1300.6	1322.9	1337.7	1339.1
130°	1352.4	1376.1	1392.3	1408.7	1407.2
132.5°	1426.4	1445.7	1461.9	1475.2	1473.8
135°	1488.6	1512.4	1525.5	1540.4	1537.4
137.5°	1553.6	1571.4	1586.3	1601.0	1596.7
140°	1617.2	1629.2	1645.4	1658.7	1651.3
142.5°	1670.6	1681.0	1700.2	1711.9	1704.6
145°	1726.9	1725.3	1750.4	1760.8	1753.4
147.5°	1775.5	1771.1	1796.2	1803.6	1797.9
150°	1823.0	1812.6	1836.3	1845.1	1837.8
152.5°	1862.9	1851.1	1873.2	1882.2	1871.8
155°	1901.4	1888.1	1905.9	1914.7	1902.9
157.5°	1932.5	1920.7	1934.0	1944.4	1932.5
160°	1959.1	1950.2	1959.1	1967.9	1957.6
162.5°	1982.7	1973.9	1981.3	1991.7	1978.3
165°	2003.5	1994.7	1999.0	2009.4	1999.0
167.5°	2019.7	2010.8	2015.4	2025.8	2012.4
170°	2033.2	2024.2	2027.2	2037.5	2024.2
172.5°	2041.9	2033.2	2036.1	2046.5	2033.2
175°	2049.3	2038.9	2041.9	2052.2	2037.5
177.5°	2052.2	2041.9	2043.5	2053.9	2040.5
180°	2044.9	2044.9	2044.9	2044.9	2044.9

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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	7.40	8.16	8.43	9.20	10.58	3.36	4.12	4.39	5.16	6.54
	3H	9.07	9.76	10.12	10.80	12.21	4.54	5.23	5.58	6.27	7.68
	4H	9.68	10.33	10.74	11.38	12.79	4.99	5.64	6.04	6.69	8.10
	6H	10.11	10.70	11.17	11.75	13.18	5.31	5.91	6.37	6.96	8.38
	8H	10.23	10.80	11.30	11.87	13.29	5.40	5.97	6.47	7.03	8.45
	12H	10.30	10.84	11.37	11.90	13.34	5.44	5.98	6.51	7.04	8.48
4H	2H	7.41	8.06	8.47	9.10	10.52	3.95	4.60	5.01	5.64	7.06
	3H	9.24	9.78	10.30	10.85	12.28	5.29	5.83	6.36	6.91	8.33
	4H	9.93	10.42	11.00	11.49	12.94	5.84	6.34	6.91	7.40	8.85
	6H	10.45	10.87	11.53	11.96	13.40	6.26	6.68	7.34	7.77	9.21
	8H	10.63	11.02	11.71	12.10	13.56	6.39	6.78	7.47	7.86	9.32
	12H	10.72	11.08	11.82	12.17	13.63	6.45	6.81	7.55	7.90	9.36
8H	4H	9.89	10.29	10.98	11.37	12.83	6.12	6.52	7.20	7.60	9.05
	6H	10.46	10.79	11.57	11.91	13.37	6.64	6.96	7.74	8.09	9.54
	8H	10.68	10.97	11.80	12.07	13.55	6.83	7.12	7.94	8.22	9.70
	12H	10.82	11.08	11.94	12.18	13.69	6.95	7.20	8.06	8.30	9.81
12H	4H	9.84	10.20	10.94	11.29	12.76	6.12	6.48	7.22	7.57	9.04
	6H	10.44	10.73	11.55	11.83	13.30	6.69	6.98	7.80	8.08	9.55
	8H	10.66	10.91	11.78	12.01	13.53	6.90	7.15	8.01	8.25	9.76

END OF REPORT