

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: P926437

Luminaire Tested: DFN2DIP-TR4F0-050D120US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926437
REPORT IS A COMBINATION OF REPORTS P902036 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D120US950-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

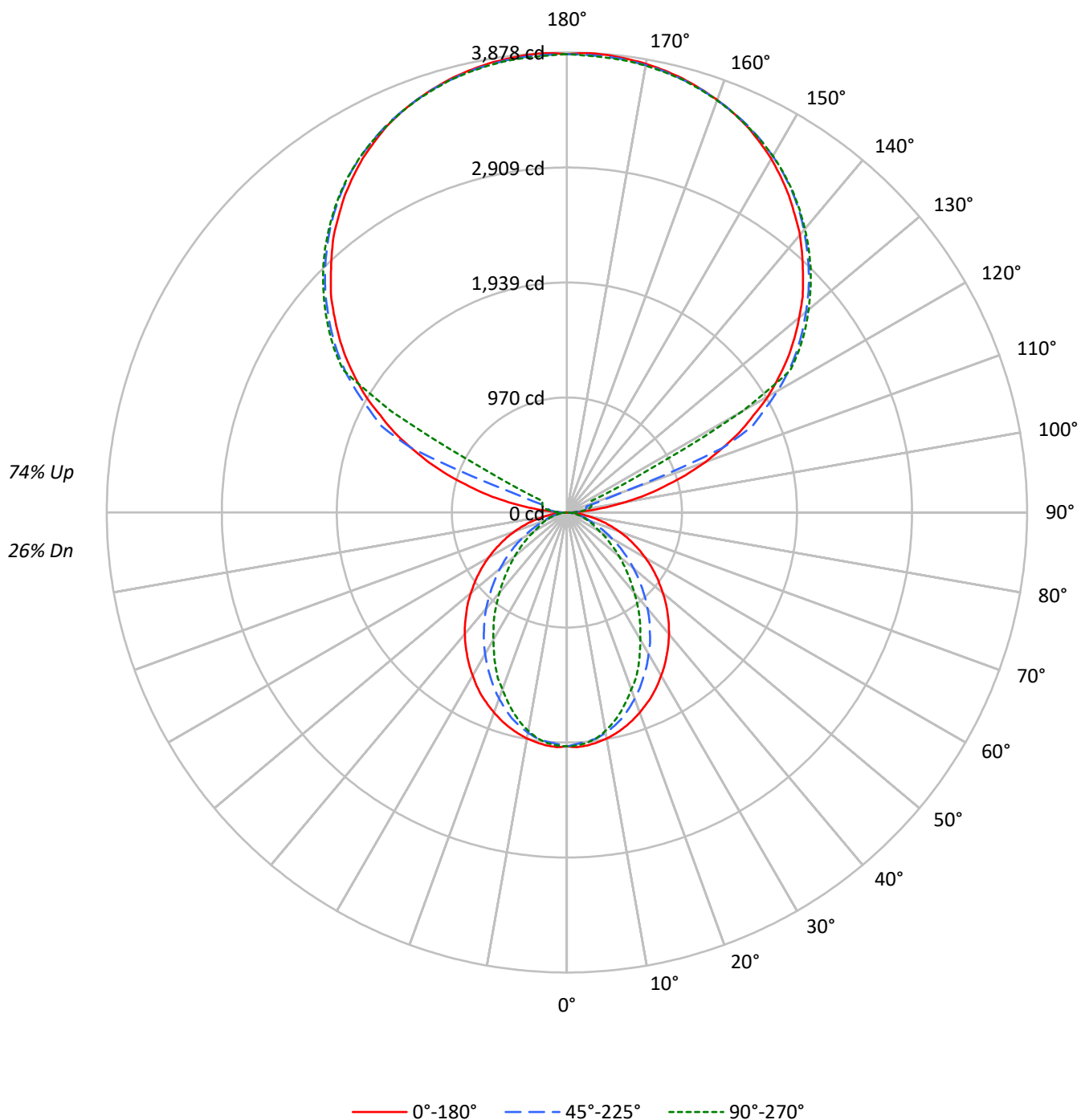
Lumens per Lamp: N/A
Luminaire Lumens: 15388.0 lumens
Efficiency: N/A
Efficacy: 115.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 133.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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	102	102	102	102	91	91	91	91	70	70	70	52	52	52	34	34	34
1	93	89	85	82	83	79	76	74	62	60	58	46	44	43	31	30	29
2	85	78	72	67	75	70	65	61	54	51	48	40	38	36	27	26	25
3	77	68	62	56	69	61	56	51	48	44	41	36	33	31	24	23	22
4	71	61	53	47	63	54	48	43	43	38	35	32	29	27	22	20	19
5	65	54	46	41	58	49	42	37	38	34	30	29	26	23	20	18	17
6	60	48	41	35	53	44	37	32	35	30	26	26	23	20	18	16	15
7	55	44	36	31	49	39	33	28	31	27	23	24	20	18	17	15	13
8	51	39	32	27	46	36	29	25	28	24	20	22	18	16	15	13	12
9	48	36	29	24	42	33	26	22	26	21	18	20	17	14	14	12	11
10	44	33	26	21	40	30	24	20	24	19	16	18	15	13	13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1566	1566	1566
5°	1569	1541	1551
10°	1553	1511	1501
15°	1532	1461	1423
20°	1504	1392	1327
25°	1475	1315	1234
30°	1436	1236	1117
35°	1398	1151	1014
40°	1359	1063	896
45°	1314	965	789
50°	1267	867	684
55°	1219	761	584
60°	1162	651	480
65°	1098	539	432
70°	1019	435	391
75°	921	383	356
80°	778	321	308
85°	542	215	232

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2052 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.8	1.2
10°-20°	507.2	3.3
20°-30°	712.1	4.6
30°-40°	776.3	5.0
40°-50°	713.5	4.6
50°-60°	560.3	3.6
60°-70°	364.7	2.4
70°-80°	187.7	1.2
80°-90°	54.7	0.4
90°-100°	127.4	0.8
100°-110°	474.9	3.1
110°-120°	1259.5	8.2
120°-130°	2089.1	13.6
130°-140°	2219.1	14.4
140°-150°	2062.4	13.4
150°-160°	1658.1	10.8
160°-170°	1068.4	6.9
170°-180°	367.7	2.4
0°-30°	1404.1	9.1
0°-40°	2180.4	14.2
0°-60°	3454.1	22.4
0°-90°	4061.3	26.4
90°-120°	1861.9	12.1
90°-150°	8232.4	53.5
90°-180°	11327.0	73.6
0°-180°	15388.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1971	1971	1971	1971	1971	
5°	1971	1963	1939	1955	1950	187
15°	1875	1855	1795	1761	1743	528
25°	1702	1645	1527	1454	1427	783
35°	1467	1376	1219	1106	1067	918
45°	1199	1079	892	765	722	926
55°	912	772	580	473	439	815
65°	616	471	310	250	244	610
75°	328	203	143	130	128	347
85°	77	39	34	34	34	88
90°	3	34	56	70	75	14
95°	182	89	109	123	120	215
105°	850	934	171	201	212	908
115°	1607	1655	1725	430	229	1582
125°	2273	2309	2362	2382	2390	2027
135°	2812	2857	2882	2910	2905	2173
145°	3263	3260	3307	3327	3313	2041
155°	3592	3567	3601	3618	3595	1655
165°	3785	3769	3777	3796	3777	1069
175°	3872	3852	3858	3878	3850	368
180°	3864	3864	3864	3864	3864	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1971.4	1971.4	1971.4	1971.4	1971.4
2.5°	1980.3	1971.4	1951.8	1969.7	1966.1
5°	1971.4	1962.6	1939.3	1955.3	1950.1
7.5°	1955.3	1944.7	1919.7	1926.8	1917.8
10°	1933.9	1921.5	1885.9	1880.4	1869.7
12.5°	1907.2	1891.2	1842.9	1832.3	1812.6
15°	1875.1	1855.4	1794.9	1761.0	1743.1
17.5°	1837.6	1809.1	1734.1	1694.9	1666.3
20°	1794.9	1759.1	1669.9	1625.4	1586.0
22.5°	1748.5	1707.4	1603.9	1543.3	1516.6
25°	1702.0	1644.9	1527.2	1454.1	1427.2
27.5°	1646.8	1586.0	1455.8	1371.9	1330.9
30°	1587.9	1520.0	1377.3	1286.4	1238.1
32.5°	1530.8	1448.6	1302.5	1195.4	1150.7
35°	1466.6	1375.6	1218.6	1106.2	1066.9
37.5°	1404.1	1305.9	1140.1	1016.9	972.4
40°	1338.1	1231.1	1057.9	931.3	884.9
42.5°	1270.3	1156.2	975.9	843.8	799.4
45°	1199.0	1079.4	892.1	765.3	722.5
47.5°	1131.2	1004.6	811.9	685.1	645.9
50°	1056.3	929.6	733.3	610.1	572.8
52.5°	983.0	849.2	658.4	540.6	506.8
55°	911.6	772.5	579.7	472.8	438.9
57.5°	838.6	695.8	510.3	410.4	381.8
60°	763.6	620.9	437.0	346.2	317.6
62.5°	690.5	547.8	374.6	289.1	274.8
65°	615.5	471.0	310.4	249.9	244.4
67.5°	544.2	399.6	249.9	219.4	214.1
70°	469.3	330.1	206.9	189.1	181.9
72.5°	397.9	265.8	173.1	158.8	155.2
75°	328.3	203.3	142.7	130.2	128.5
77.5°	258.7	144.4	112.5	105.2	101.6
80°	194.4	103.5	85.6	78.5	78.5
82.5°	135.6	69.6	58.9	55.2	55.2
85°	76.7	39.2	33.9	33.9	33.9
87.5°	28.6	14.2	14.2	12.5	12.5
90°	2.7	33.5	55.8	70.0	75.4
92.5°	70.0	58.8	67.1	72.7	75.4
95°	181.5	89.3	108.9	123.2	120.2
97.5°	327.0	98.0	142.4	151.0	153.7
100°	494.9	111.9	159.3	181.5	187.3
102.5°	679.2	673.9	164.9	195.6	204.2
105°	849.8	933.9	170.7	201.2	212.5
107.5°	1048.4	1118.1	176.3	206.8	218.1
110°	1238.6	1297.1	489.3	209.8	220.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1417.5	1467.6	1420.2	215.1	223.7
115°	1607.4	1654.9	1724.9	430.5	229.4
117.5°	1772.4	1828.2	1876.0	1475.9	743.6
120°	1957.0	1998.8	2049.3	2082.9	1705.4
122.5°	2113.4	2158.2	2214.3	2230.9	2233.9
125°	2272.7	2309.3	2362.4	2381.9	2390.2
127.5°	2418.1	2457.3	2499.5	2527.3	2530.0
130°	2555.2	2600.0	2630.6	2661.5	2658.8
132.5°	2695.0	2731.5	2762.0	2787.3	2784.6
135°	2812.5	2857.3	2882.2	2910.5	2904.8
137.5°	2935.4	2968.8	2997.1	3024.9	3016.6
140°	3055.6	3078.1	3108.6	3133.9	3120.0
142.5°	3156.4	3176.1	3212.2	3234.4	3220.5
145°	3262.7	3259.7	3307.1	3326.8	3312.8
147.5°	3354.6	3346.3	3393.9	3407.8	3396.8
150°	3444.2	3424.7	3469.5	3486.1	3472.2
152.5°	3519.6	3497.4	3539.2	3556.1	3536.6
155°	3592.3	3567.4	3601.0	3617.6	3595.3
157.5°	3651.1	3628.8	3654.1	3673.7	3651.1
160°	3701.5	3684.6	3701.5	3718.1	3698.6
162.5°	3746.1	3729.5	3743.4	3763.0	3737.8
165°	3785.2	3768.6	3776.9	3796.5	3776.9
167.5°	3816.1	3799.1	3807.8	3827.4	3802.2
170°	3841.3	3824.4	3830.0	3849.6	3824.4
172.5°	3857.9	3841.3	3847.0	3866.6	3841.3
175°	3871.8	3852.3	3857.9	3877.5	3849.6
177.5°	3877.5	3857.9	3860.9	3880.5	3855.3
180°	3863.6	3863.6	3863.6	3863.6	3863.6

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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	5.95	6.62	7.09	7.74	9.32	1.92	2.59	3.06	3.72	5.29
	3H	7.61	8.21	8.76	9.35	10.94	3.10	3.70	4.25	4.83	6.42
	4H	8.21	8.78	9.37	9.92	11.51	3.54	4.11	4.70	5.24	6.84
	6H	8.63	9.15	9.79	10.29	11.89	3.85	4.38	5.02	5.51	7.12
	8H	8.75	9.24	9.91	10.40	12.00	3.94	4.44	5.11	5.59	7.19
	12H	8.80	9.27	9.97	10.42	12.04	3.98	4.45	5.15	5.60	7.22
4H	2H	5.94	6.51	7.11	7.65	9.24	2.50	3.06	3.66	4.20	5.79
	3H	7.76	8.23	8.93	9.39	11.00	3.83	4.30	5.00	5.47	7.07
	4H	8.44	8.88	9.62	10.03	11.66	4.37	4.81	5.55	5.96	7.59
	6H	8.95	9.32	10.13	10.50	12.11	4.78	5.16	5.96	6.33	7.95
	8H	9.12	9.47	10.30	10.63	12.27	4.91	5.26	6.09	6.42	8.05
	12H	9.21	9.52	10.40	10.70	12.34	4.97	5.28	6.16	6.46	8.10
8H	4H	8.40	8.75	9.58	9.91	11.54	4.64	4.99	5.82	6.15	7.79
	6H	8.96	9.25	10.16	10.45	12.08	5.16	5.44	6.35	6.65	8.28
	8H	9.18	9.43	10.38	10.61	12.26	5.35	5.59	6.55	6.78	8.43
	12H	9.31	9.53	10.51	10.71	12.39	5.46	5.68	6.66	6.86	8.54
12H	4H	8.35	8.66	9.54	9.84	11.47	4.64	4.95	5.83	6.13	7.77
	6H	8.94	9.18	10.14	10.37	12.02	5.20	5.45	6.40	6.64	8.29
	8H	9.15	9.37	10.35	10.55	12.23	5.41	5.63	6.61	6.81	8.49

END OF REPORT