

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: P926435

Luminaire Tested: DFN2DIP-TR4F0-050D120US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926435
REPORT IS A COMBINATION OF REPORTS P902035 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D120US950-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

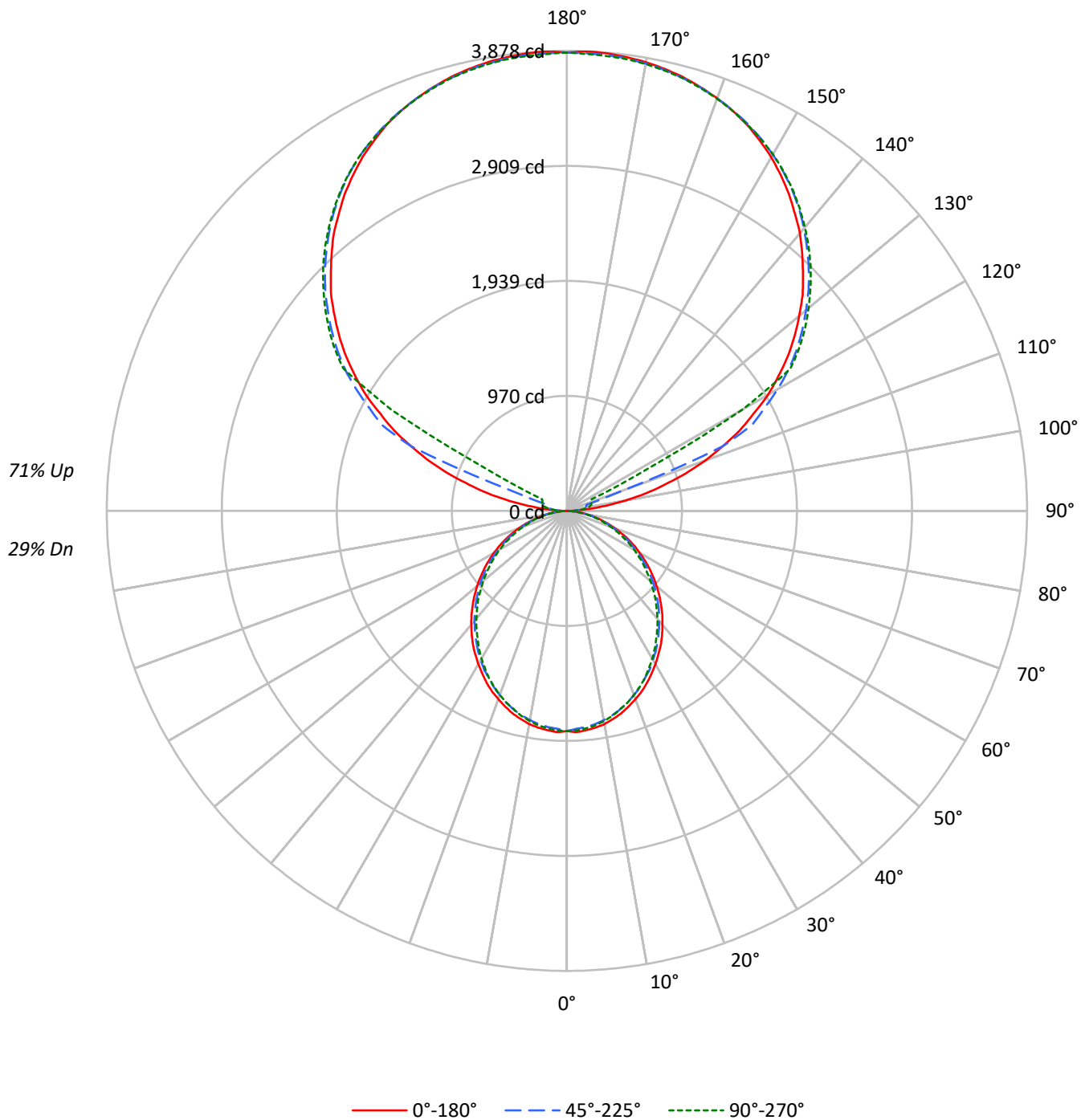
Lumens per Lamp: N/A
Luminaire Lumens: 16055.8 lumens
Efficiency: N/A
Efficacy: 120.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

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

TEST NUMBER: P926435

CATALOG NUMBER: DFN2DIP-TR4F0-050D120US950-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P926435

CATALOG NUMBER: DFN2DIP-TR4F0-050D120US950-FLONL

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	92	92	92	92	72	72	72	54	54	54	37	37	37
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	31
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	29	28	26
3	77	68	61	56	69	61	55	51	49	44	41	37	34	32	26	24	22
4	71	60	53	47	63	54	48	43	43	38	35	33	29	27	23	21	19
5	65	54	46	40	58	48	42	37	38	34	30	29	26	23	21	19	17
6	60	48	40	34	53	43	36	32	35	30	26	26	23	20	19	16	15
7	55	43	35	30	49	39	32	28	31	26	23	24	20	18	17	15	13
8	51	39	32	26	46	35	29	24	28	23	20	22	18	16	16	13	12
9	47	35	28	23	42	32	26	22	26	21	18	20	17	14	14	12	11
10	44	32	25	21	40	29	23	19	24	19	16	18	15	13	13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1474	1474	1474
5°	1477	1454	1464
10°	1465	1434	1444
15°	1443	1411	1413
20°	1414	1378	1381
25°	1385	1339	1344
30°	1349	1302	1298
35°	1315	1259	1248
40°	1272	1216	1201
45°	1230	1172	1153
50°	1184	1126	1098
55°	1136	1073	1047
60°	1081	1010	988
65°	1022	945	919
70°	946	866	845
75°	841	771	776
80°	715	650	645
85°	517	440	427

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2052 cd/sqm

TEST NUMBER: P926435

CATALOG NUMBER: DFN2DIP-TR4F0-050D120US950-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.7	1.1
10°-20°	491.5	3.1
20°-30°	722.3	4.5
30°-40°	838.9	5.2
40°-50°	837.9	5.2
50°-60°	730.6	4.6
60°-70°	540.1	3.4
70°-80°	305.6	1.9
80°-90°	87.4	0.5
90°-100°	127.4	0.8
100°-110°	474.9	3.0
110°-120°	1259.5	7.8
120°-130°	2089.1	13.0
130°-140°	2219.1	13.8
140°-150°	2062.4	12.8
150°-160°	1658.1	10.3
160°-170°	1068.4	6.7
170°-180°	367.7	2.3
0°-30°	1388.5	8.6
0°-40°	2227.5	13.9
0°-60°	3796.0	23.6
0°-90°	4729.1	29.5
90°-120°	1861.9	11.6
90°-150°	8232.4	51.3
90°-180°	11327.0	70.5
0°-180°	16055.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1856	1856	1856	1856	1856	
5°	1856	1849	1829	1844	1840	176
15°	1767	1756	1733	1740	1731	498
25°	1599	1585	1554	1558	1554	736
35°	1380	1362	1333	1322	1314	862
45°	1123	1110	1083	1064	1057	866
55°	850	839	817	796	787	760
65°	573	562	544	528	519	567
75°	300	296	287	277	280	320
85°	73	71	70	64	62	82
90°	3	34	56	70	75	15
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	

TEST NUMBER: P926435

CATALOG NUMBER: DFN2DIP-TR4F0-050D120US950-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1856.0	1856.0	1856.0	1856.0	1856.0
2.5°	1866.8	1857.9	1838.3	1856.0	1852.7
5°	1856.0	1849.0	1829.3	1843.5	1840.2
7.5°	1843.5	1832.9	1813.3	1827.7	1824.0
10°	1824.0	1811.6	1790.2	1804.3	1799.1
12.5°	1797.1	1786.6	1765.2	1774.1	1770.4
15°	1766.8	1756.2	1732.9	1740.2	1731.2
17.5°	1729.3	1718.7	1695.4	1704.3	1695.4
20°	1688.3	1677.7	1652.7	1658.0	1651.0
22.5°	1647.4	1631.2	1608.0	1608.0	1604.3
25°	1599.1	1584.9	1554.5	1558.0	1554.5
27.5°	1545.5	1533.0	1509.9	1504.6	1495.7
30°	1492.1	1477.7	1451.0	1445.7	1438.5
32.5°	1434.9	1424.3	1395.7	1384.9	1377.8
35°	1379.6	1361.8	1333.2	1322.4	1313.6
37.5°	1317.1	1301.1	1272.4	1259.9	1251.1
40°	1253.0	1238.6	1210.0	1194.0	1186.9
42.5°	1190.5	1176.1	1147.7	1129.6	1119.0
45°	1122.7	1110.2	1083.3	1063.8	1056.6
47.5°	1056.6	1044.1	1015.5	995.8	985.2
50°	986.9	978.0	953.0	928.1	919.1
52.5°	919.1	906.6	883.5	863.8	851.3
55°	849.6	838.9	817.4	796.0	787.1
57.5°	779.9	771.0	747.7	726.4	719.1
60°	710.3	703.3	678.3	658.5	653.3
62.5°	642.5	630.0	612.2	594.3	587.2
65°	573.0	562.2	544.4	528.3	519.4
67.5°	501.6	492.6	476.6	464.1	456.9
70°	435.5	428.3	412.2	399.7	392.8
72.5°	367.8	360.5	351.6	339.1	333.8
75°	299.7	296.3	287.2	276.7	280.3
77.5°	239.2	231.9	228.4	223.0	217.8
80°	178.6	176.7	173.1	167.8	164.2
82.5°	121.3	121.3	119.6	112.5	112.5
85°	73.1	71.4	69.6	64.2	62.5
87.5°	32.1	28.6	25.0	19.7	17.8
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

TEST NUMBER: P926435

CATALOG NUMBER: DFN2DIP-TR4F0-050D120US950-FLLONL

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	6.33	7.03	7.44	8.14	9.68	5.90	6.60	7.01	7.71	9.25
	3H	7.98	8.60	9.10	9.72	11.28	7.50	8.13	8.63	9.25	10.80
	4H	8.55	9.15	9.69	10.27	11.83	8.08	8.68	9.22	9.80	11.36
	6H	8.95	9.50	10.09	10.62	12.19	8.47	9.02	9.61	10.14	11.71
	8H	9.05	9.57	10.19	10.71	12.27	8.57	9.10	9.72	10.23	11.80
	12H	9.09	9.59	10.24	10.72	12.30	8.61	9.11	9.76	10.24	11.82
4H	2H	6.77	7.37	7.91	8.49	10.04	6.42	7.02	7.57	8.14	9.70
	3H	8.62	9.12	9.77	10.26	11.84	8.23	8.73	9.37	9.87	11.44
	4H	9.33	9.79	10.48	10.92	12.51	8.92	9.38	10.07	10.52	12.11
	6H	9.83	10.23	10.99	11.38	12.96	9.42	9.82	10.58	10.97	12.56
	8H	9.98	10.35	11.13	11.49	13.09	9.57	9.94	10.72	11.08	12.68
	12H	10.04	10.38	11.22	11.54	13.14	9.62	9.96	10.80	11.12	12.72
8H	4H	9.51	9.88	10.67	11.03	12.63	9.15	9.52	10.31	10.67	12.27
	6H	10.14	10.44	11.31	11.63	13.22	9.77	10.08	10.95	11.27	12.86
	8H	10.36	10.62	11.54	11.79	13.40	9.99	10.25	11.17	11.42	13.04
	12H	10.48	10.71	11.66	11.88	13.53	10.10	10.33	11.28	11.49	13.14
12H	4H	9.49	9.82	10.66	10.98	12.59	9.14	9.47	10.31	10.63	12.23
	6H	10.16	10.43	11.35	11.60	13.21	9.81	10.08	10.99	11.25	12.86
	8H	10.40	10.63	11.58	11.80	13.45	10.04	10.27	11.23	11.44	13.09

END OF REPORT