

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: P910053

Luminaire Tested: DFN2DIP-TR4F0-050D080US840-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910053
REPORT IS A COMBINATION OF REPORTS P901964 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D080US840-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

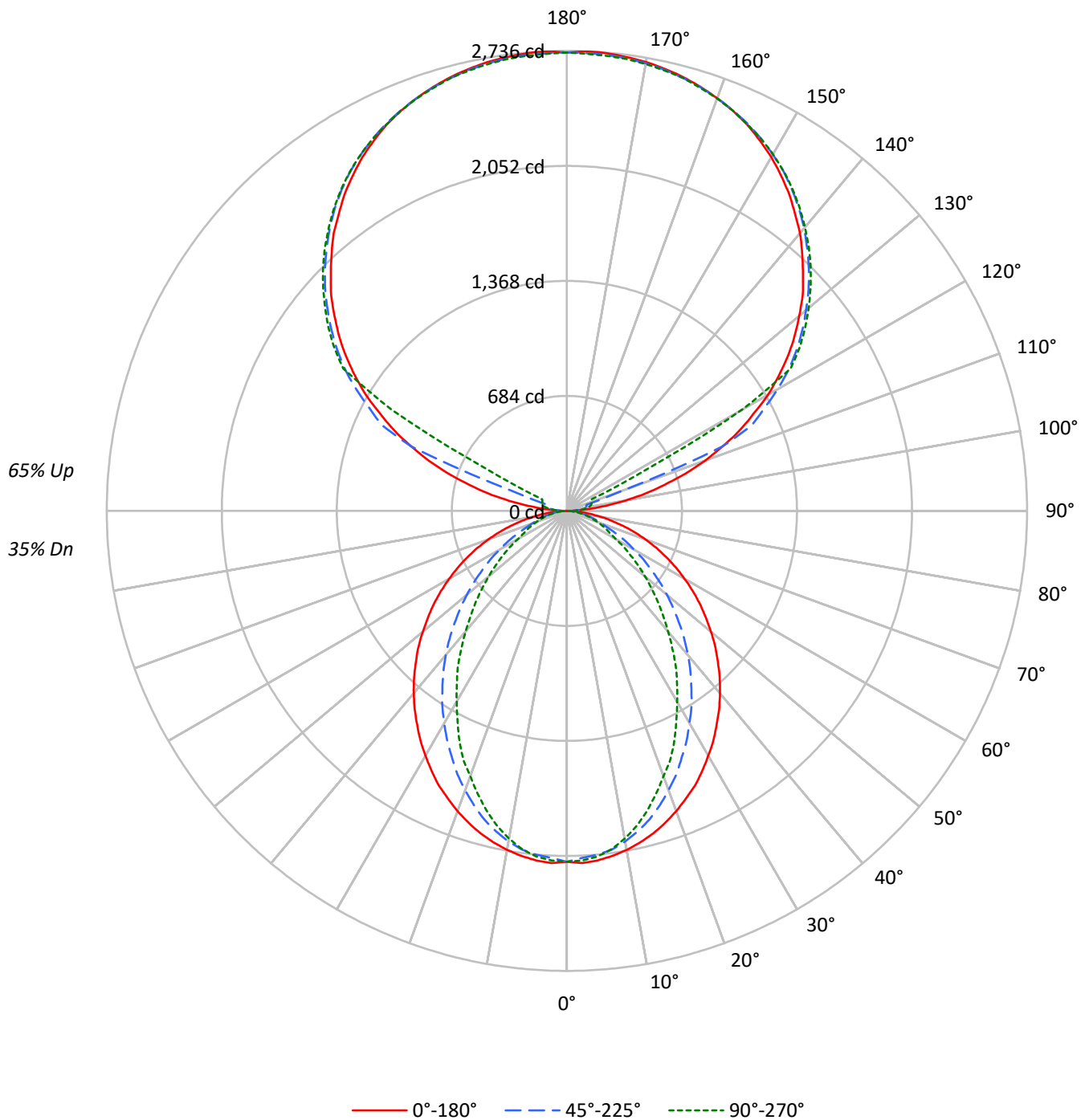
Lumens per Lamp: N/A
Luminaire Lumens: 12290.1 lumens
Efficiency: N/A
Efficacy: 121.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 101.1
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: P910053

CATALOG NUMBER: DFN2DIP-TR4F0-050D080US840-RLLONL

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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	42	42	42
1	95	91	87	84	86	82	79	76	66	64	62	51	50	49	38	37	36
2	87	80	74	69	78	72	67	63	58	55	52	46	43	41	34	32	31
3	79	70	63	58	71	64	58	53	52	47	44	41	38	35	30	28	27
4	72	62	55	49	65	57	50	45	46	41	38	36	33	30	27	25	23
5	67	56	48	42	60	51	44	39	41	36	33	33	29	27	25	22	21
6	61	50	42	37	55	45	39	34	37	32	29	30	26	23	22	20	18
7	57	45	37	32	51	41	34	30	34	29	25	27	23	21	21	18	16
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	19	17	15
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	18	15	13
10	46	34	27	23	41	31	25	21	26	21	18	21	18	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1658	1658	1658
5°	1661	1632	1642
10°	1644	1600	1588
15°	1622	1547	1506
20°	1592	1474	1404
25°	1561	1392	1307
30°	1520	1308	1182
35°	1479	1218	1073
40°	1438	1125	948
45°	1391	1022	835
50°	1341	917	724
55°	1290	806	618
60°	1230	689	508
65°	1162	571	458
70°	1079	460	414
75°	975	406	376
80°	823	340	326
85°	574	227	245

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1448 cd/sqm

TEST NUMBER: P910053

CATALOG NUMBER: DFN2DIP-TR4F0-050D080US840-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	1.6
10°-20°	536.9	4.4
20°-30°	753.8	6.1
30°-40°	821.7	6.7
40°-50°	755.2	6.1
50°-60°	593.1	4.8
60°-70°	386.1	3.1
70°-80°	198.7	1.6
80°-90°	55.5	0.5
90°-100°	89.9	0.7
100°-110°	335.1	2.7
110°-120°	888.9	7.2
120°-130°	1474.3	12.0
130°-140°	1566.0	12.7
140°-150°	1455.4	11.8
150°-160°	1170.1	9.5
160°-170°	754.0	6.1
170°-180°	259.5	2.1
0°-30°	1486.3	12.1
0°-40°	2308.0	18.8
0°-60°	3656.4	29.8
0°-90°	4296.7	35.0
90°-120°	1314.0	10.7
90°-150°	5809.7	47.3
90°-180°	7993.0	65.0
0°-180°	12290.1	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°	2	24	39	49	53	11
95°	128	63	77	87	85	152
105°	600	659	120	142	150	641
115°	1134	1168	1217	304	162	1117
125°	1604	1630	1667	1681	1687	1430
135°	1985	2016	2034	2054	2050	1533
145°	2302	2300	2334	2348	2338	1440
155°	2535	2518	2541	2553	2537	1168
165°	2671	2660	2665	2679	2665	755
175°	2732	2719	2723	2736	2717	260
180°	2726	2726	2726	2726	2726	

TEST NUMBER: P910053

CATALOG NUMBER: DFN2DIP-TR4F0-050D080US840-RLLONL

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°	1.9	23.6	39.4	49.4	53.2
92.5°	49.4	41.5	47.4	51.3	53.2
95°	128.2	63.0	76.9	86.9	84.8
97.5°	230.8	69.1	100.5	106.6	108.5
100°	349.3	79.0	112.5	128.2	132.1
102.5°	479.4	475.5	116.4	137.9	144.1
105°	599.8	659.0	120.4	142.0	150.0
107.5°	739.8	789.0	124.4	145.9	153.9
110°	874.1	915.3	345.4	148.0	155.8

TEST NUMBER: P910053

CATALOG NUMBER: DFN2DIP-TR4F0-050D080US840-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1000.4	1035.7	1002.3	151.8	157.9
115°	1134.4	1167.9	1217.3	303.9	161.9
117.5°	1250.8	1290.2	1323.9	1041.6	524.8
120°	1381.1	1410.6	1446.2	1469.9	1203.5
122.5°	1491.4	1523.1	1562.7	1574.4	1576.5
125°	1603.9	1629.6	1667.1	1680.9	1686.8
127.5°	1706.5	1734.1	1763.9	1783.5	1785.4
130°	1803.2	1834.8	1856.4	1878.2	1876.3
132.5°	1901.9	1927.6	1949.2	1967.0	1965.1
135°	1984.8	2016.4	2034.0	2054.0	2049.9
137.5°	2071.5	2095.2	2115.1	2134.8	2128.9
140°	2156.3	2172.2	2193.8	2211.6	2201.7
142.5°	2227.6	2241.3	2266.8	2282.6	2272.7
145°	2302.5	2300.4	2333.9	2347.7	2337.8
147.5°	2367.4	2361.6	2395.0	2404.9	2397.1
150°	2430.6	2416.8	2448.4	2460.1	2450.3
152.5°	2483.9	2468.1	2497.6	2509.6	2495.8
155°	2535.2	2517.6	2541.2	2552.9	2537.3
157.5°	2576.6	2560.9	2578.7	2592.5	2576.6
160°	2612.2	2600.3	2612.2	2623.9	2610.1
162.5°	2643.6	2631.9	2641.7	2655.5	2637.8
165°	2671.3	2659.6	2665.4	2679.2	2665.4
167.5°	2693.0	2681.1	2687.2	2701.0	2683.2
170°	2710.9	2698.9	2702.9	2716.7	2698.9
172.5°	2722.6	2710.9	2714.8	2728.7	2710.9
175°	2732.4	2718.6	2722.6	2736.3	2716.7
177.5°	2736.3	2722.6	2724.6	2738.5	2720.7
180°	2726.5	2726.5	2726.5	2726.5	2726.5

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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	7.31	8.03	8.39	9.11	10.58	3.28	4.00	4.36	5.08	6.55
	3H	8.98	9.62	10.07	10.71	12.20	4.46	5.11	5.55	6.19	7.68
	4H	9.58	10.19	10.68	11.28	12.77	4.91	5.52	6.01	6.61	8.10
	6H	9.99	10.56	11.10	11.65	13.16	5.22	5.78	6.33	6.88	8.38
	8H	10.12	10.65	11.23	11.76	13.26	5.31	5.85	6.42	6.95	8.45
	12H	10.18	10.68	11.29	11.78	13.31	5.35	5.86	6.47	6.96	8.48
4H	2H	7.31	7.92	8.42	9.01	10.51	3.86	4.47	4.97	5.56	7.06
	3H	9.13	9.64	10.25	10.75	12.26	5.20	5.71	6.32	6.83	8.34
	4H	9.82	10.28	10.94	11.39	12.92	5.75	6.21	6.87	7.32	8.85
	6H	10.33	10.73	11.45	11.85	13.38	6.16	6.56	7.29	7.69	9.21
	8H	10.50	10.87	11.63	11.99	13.53	6.29	6.66	7.41	7.78	9.32
	12H	10.59	10.93	11.73	12.06	13.60	6.35	6.69	7.49	7.82	9.36
8H	4H	9.78	10.15	10.90	11.27	12.81	6.02	6.39	7.14	7.51	9.05
	6H	10.34	10.65	11.49	11.81	13.34	6.53	6.84	7.68	8.00	9.54
	8H	10.56	10.82	11.71	11.97	13.52	6.73	6.99	7.88	8.14	9.69
	12H	10.69	10.93	11.85	12.06	13.66	6.84	7.08	8.00	8.22	9.81
12H	4H	9.72	10.06	10.87	11.19	12.74	6.02	6.36	7.16	7.49	9.03
	6H	10.32	10.58	11.47	11.73	13.28	6.58	6.85	7.74	7.99	9.55
	8H	10.53	10.77	11.69	11.91	13.50	6.79	7.03	7.95	8.16	9.75