

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: P910050

Luminaire Tested: DFN2DIP-TR4F0-050D080US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910050
REPORT IS A COMBINATION OF REPORTS P900443 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D080US840-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

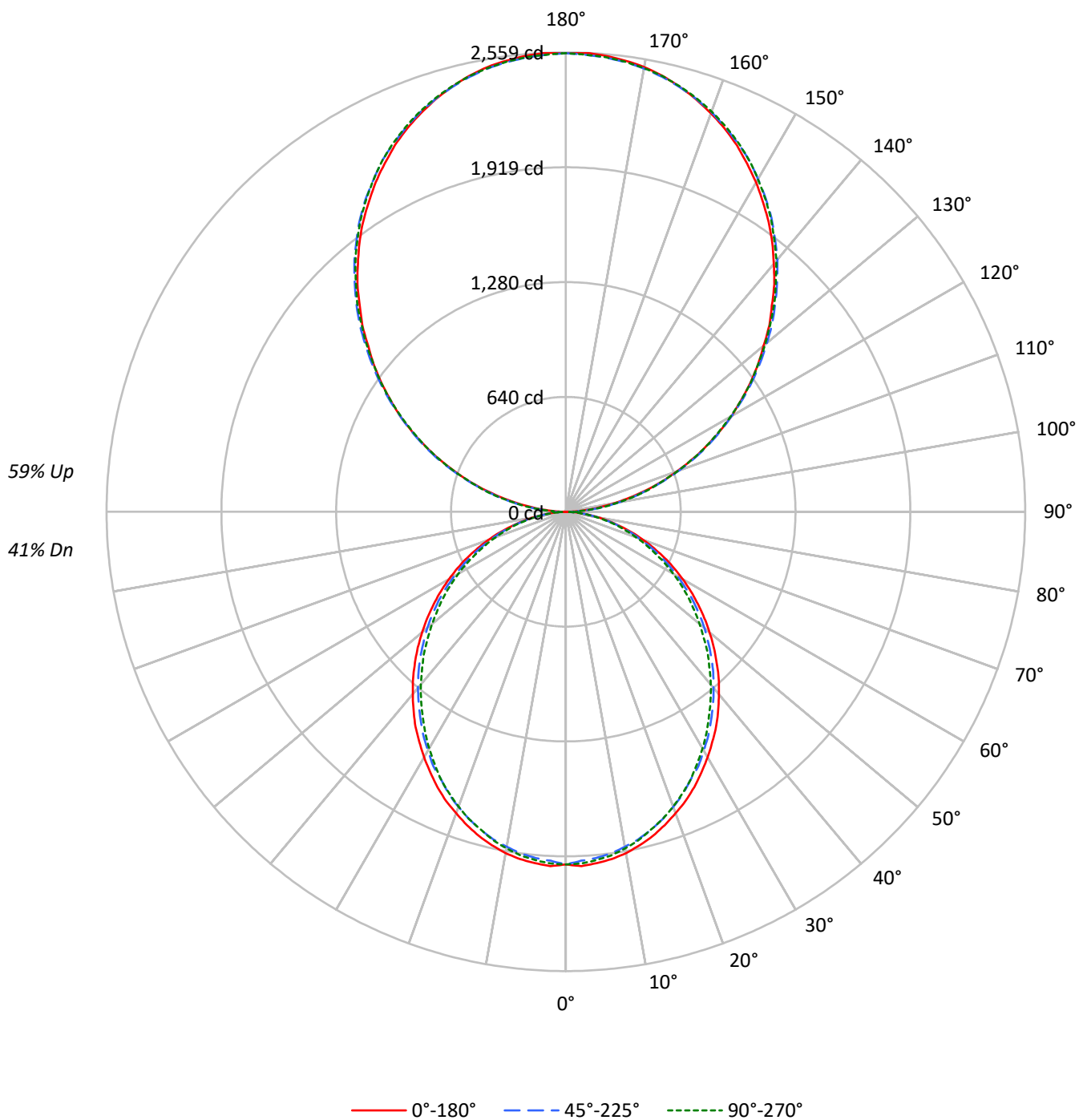
Lumens per Lamp: N/A
Luminaire Lumens: 12148.7 lumens
Efficiency: N/A
Efficacy: 120.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

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: P910050

CATALOG NUMBER: DFN2DIP-TR4F0-050D080US840-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P910050

CATALOG NUMBER: DFN2DIP-TR4F0-050D080US840-FLLFLL

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	78	78	78	63	63	63	48	48	48
1	96	92	88	84	87	84	80	77	69	66	64	55	53	52	42	41	41
2	87	80	74	69	79	73	68	63	60	56	53	48	46	43	37	36	34
3	80	70	63	57	72	64	58	53	53	48	45	43	39	37	33	31	29
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	30	27	25
5	67	55	47	41	61	51	44	38	42	37	33	34	30	27	27	24	22
6	61	50	42	36	56	46	38	33	38	33	29	31	27	24	24	21	19
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17
8	53	40	33	28	48	37	31	26	31	26	22	26	22	19	20	17	15
9	49	37	30	25	45	34	27	23	29	23	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1561	1561	1561
5°	1563	1539	1549
10°	1551	1518	1528
15°	1528	1493	1496
20°	1497	1459	1462
25°	1466	1417	1423
30°	1428	1378	1374
35°	1392	1333	1322
40°	1347	1287	1272
45°	1302	1241	1221
50°	1253	1192	1162
55°	1202	1136	1108
60°	1144	1069	1046
65°	1081	1000	973
70°	1001	917	894
75°	890	816	821
80°	756	688	682
85°	547	466	452

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1992 cd/sqm

TEST NUMBER: P910050

CATALOG NUMBER: DFN2DIP-TR4F0-050D080US840-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.9	1.5
10°-20°	520.3	4.3
20°-30°	764.6	6.3
30°-40°	888.1	7.3
40°-50°	887.0	7.3
50°-60°	773.4	6.4
60°-70°	571.7	4.7
70°-80°	323.5	2.7
80°-90°	92.6	0.8
90°-100°	158.1	1.3
100°-110°	502.4	4.1
110°-120°	859.7	7.1
120°-130°	1130.6	9.3
130°-140°	1269.1	10.4
140°-150°	1244.5	10.2
150°-160°	1043.9	8.6
160°-170°	692.3	5.7
170°-180°	242.0	2.0
0°-30°	1469.8	12.1
0°-40°	2357.9	19.4
0°-60°	4018.3	33.1
0°-90°	5006.1	41.2
90°-120°	1520.1	12.5
90°-150°	5164.3	42.5
90°-180°	7143.0	58.8
0°-180°	12148.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1965	1965	1965	1965	1965	
5°	1965	1957	1936	1952	1948	187
15°	1870	1859	1834	1842	1833	527
25°	1693	1678	1646	1649	1646	779
35°	1460	1442	1411	1400	1390	912
45°	1188	1175	1147	1126	1118	917
55°	899	888	865	843	833	804
65°	606	595	576	559	550	600
75°	317	314	304	293	297	339
85°	77	76	74	68	66	86
90°	2	28	76	71	73	12
95°	112	134	138	138	134	125
105°	464	470	474	478	478	489
115°	863	875	871	869	863	853
125°	1255	1274	1268	1261	1259	1121
135°	1623	1647	1652	1649	1643	1254
145°	1970	1986	1998	2000	1992	1231
155°	2253	2259	2266	2277	2270	1037
165°	2451	2449	2449	2464	2453	691
175°	2550	2544	2540	2555	2542	242
180°	2555	2555	2555	2555	2555	

TEST NUMBER: P910050

CATALOG NUMBER: DFN2DIP-TR4F0-050D080US840-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.7	1964.7	1964.7	1964.7	1964.7
2.5°	1976.1	1966.7	1945.9	1964.7	1961.2
5°	1964.7	1957.3	1936.4	1951.5	1947.9
7.5°	1951.5	1940.3	1919.5	1934.7	1930.9
10°	1930.9	1917.6	1895.0	1910.0	1904.4
12.5°	1902.4	1891.2	1868.6	1877.9	1874.1
15°	1870.3	1859.1	1834.4	1842.1	1832.6
17.5°	1830.6	1819.4	1794.7	1804.1	1794.7
20°	1787.2	1775.9	1749.5	1755.0	1747.7
22.5°	1743.8	1726.8	1702.1	1702.1	1698.3
25°	1692.7	1677.7	1645.6	1649.2	1645.6
27.5°	1636.0	1622.8	1598.3	1592.7	1583.3
30°	1579.4	1564.3	1536.0	1530.4	1522.8
32.5°	1518.9	1507.7	1477.4	1466.0	1458.4
35°	1460.4	1441.6	1411.3	1399.9	1390.5
37.5°	1394.2	1377.3	1347.0	1333.7	1324.3
40°	1326.4	1311.1	1280.8	1263.9	1256.4
42.5°	1260.2	1245.0	1214.9	1195.8	1184.6
45°	1188.4	1175.2	1146.7	1126.1	1118.4
47.5°	1118.4	1105.2	1075.0	1054.1	1042.9
50°	1044.7	1035.3	1008.9	982.4	972.9
52.5°	972.9	959.7	935.2	914.4	901.2
55°	899.4	888.0	865.3	842.6	833.2
57.5°	825.6	816.2	791.5	768.9	761.2
60°	751.8	744.5	718.0	697.1	691.6
62.5°	680.1	666.9	648.0	629.1	621.6
65°	606.5	595.1	576.2	559.3	549.8
67.5°	531.0	521.4	504.5	491.3	483.6
70°	461.0	453.4	436.4	423.1	415.8
72.5°	389.3	381.6	372.2	359.0	353.4
75°	317.3	313.7	304.1	292.9	296.7
77.5°	253.2	245.5	241.8	236.1	230.6
80°	189.0	187.0	183.2	177.6	173.8
82.5°	128.5	128.5	126.6	119.1	119.1
85°	77.4	75.5	73.7	68.0	66.1
87.5°	34.0	30.3	26.5	20.8	18.9
90°	2.3	27.8	75.5	70.9	73.2
92.5°	47.8	64.7	67.1	69.3	69.3
95°	112.5	134.0	137.8	137.8	134.0
97.5°	187.2	207.2	215.7	215.7	215.7
100°	273.5	291.1	297.3	297.3	295.0
102.5°	364.4	377.5	385.9	388.2	385.9
105°	463.7	469.9	474.5	478.4	478.4
107.5°	562.3	571.6	571.6	573.1	562.3
110°	657.8	670.1	670.1	670.1	664.0

TEST NUMBER: P910050

CATALOG NUMBER: DFN2DIP-TR4F0-050D080US840-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	761.0	774.2	771.8	765.7	761.0
115°	862.7	875.0	871.2	868.9	862.7
117.5°	963.6	980.6	969.8	963.6	957.5
120°	1065.3	1082.3	1065.3	1065.3	1058.3
122.5°	1157.7	1179.3	1168.5	1162.4	1157.7
125°	1254.8	1274.0	1267.9	1260.9	1258.7
127.5°	1349.6	1373.4	1364.9	1355.7	1349.6
130°	1438.1	1465.8	1462.0	1457.4	1449.0
132.5°	1537.5	1559.0	1560.6	1549.8	1543.7
135°	1623.0	1646.9	1651.5	1649.2	1643.1
137.5°	1718.5	1737.8	1741.6	1740.1	1730.8
140°	1802.5	1821.7	1832.5	1832.5	1824.0
142.5°	1888.8	1908.0	1914.2	1916.5	1908.0
145°	1970.4	1985.8	1998.1	2000.4	1992.0
147.5°	2043.6	2062.9	2072.0	2076.0	2067.5
150°	2119.1	2132.1	2140.6	2147.6	2140.6
152.5°	2186.1	2199.2	2210.0	2218.5	2210.0
155°	2253.1	2259.3	2266.2	2276.9	2270.1
157.5°	2310.9	2315.5	2319.4	2334.7	2324.0
160°	2362.5	2367.1	2369.4	2382.5	2373.3
162.5°	2410.2	2410.2	2412.6	2427.2	2416.4
165°	2451.0	2448.7	2448.7	2464.2	2453.4
167.5°	2488.0	2481.1	2481.1	2496.5	2485.7
170°	2515.8	2509.6	2507.3	2522.7	2509.6
172.5°	2535.1	2528.9	2526.6	2541.9	2528.9
175°	2550.4	2544.3	2539.6	2555.1	2541.9
177.5°	2558.9	2552.7	2548.1	2561.2	2548.1
180°	2555.1	2555.1	2555.1	2555.1	2555.1

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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	7.94	8.73	8.97	9.76	11.16	7.51	8.30	8.54	9.33	10.72
	3H	9.59	10.30	10.63	11.35	12.76	9.12	9.83	10.16	10.87	12.28
	4H	10.18	10.85	11.23	11.90	13.31	9.71	10.37	10.76	11.42	12.84
	6H	10.57	11.19	11.64	12.24	13.67	10.10	10.72	11.16	11.77	13.20
	8H	10.68	11.26	11.74	12.33	13.76	10.20	10.79	11.27	11.86	13.28
	12H	10.72	11.28	11.79	12.34	13.79	10.24	10.80	11.31	11.86	13.31
4H	2H	8.39	9.06	9.45	10.11	11.53	8.05	8.72	9.11	9.77	11.18
	3H	10.25	10.81	11.32	11.89	13.32	9.86	10.42	10.92	11.49	12.92
	4H	10.96	11.48	12.03	12.54	13.99	10.56	11.07	11.63	12.14	13.59
	6H	11.47	11.91	12.55	13.00	14.45	11.06	11.50	12.15	12.59	14.04
	8H	11.62	12.03	12.70	13.11	14.58	11.21	11.62	12.29	12.70	14.17
	12H	11.69	12.06	12.79	13.16	14.63	11.27	11.64	12.37	12.74	14.20
8H	4H	11.15	11.56	12.23	12.65	14.11	10.79	11.20	11.87	12.29	13.75
	6H	11.78	12.12	12.89	13.25	14.70	11.42	11.76	12.52	12.88	14.34
	8H	12.00	12.30	13.11	13.41	14.89	11.63	11.93	12.74	13.04	14.52
	12H	12.13	12.39	13.24	13.49	15.01	11.75	12.01	12.86	13.11	14.63
12H	4H	11.14	11.51	12.23	12.60	14.07	10.78	11.16	11.88	12.25	13.72
	6H	11.81	12.11	12.92	13.22	14.69	11.46	11.76	12.57	12.86	14.34
	8H	12.05	12.31	13.16	13.41	14.93	11.69	11.95	12.81	13.06	14.57