

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: P907744

Luminaire Tested: DFN2DIP-4P4F0-030D060US840-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907744
REPORT IS A COMBINATION OF REPORTS P899116 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D060US840-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

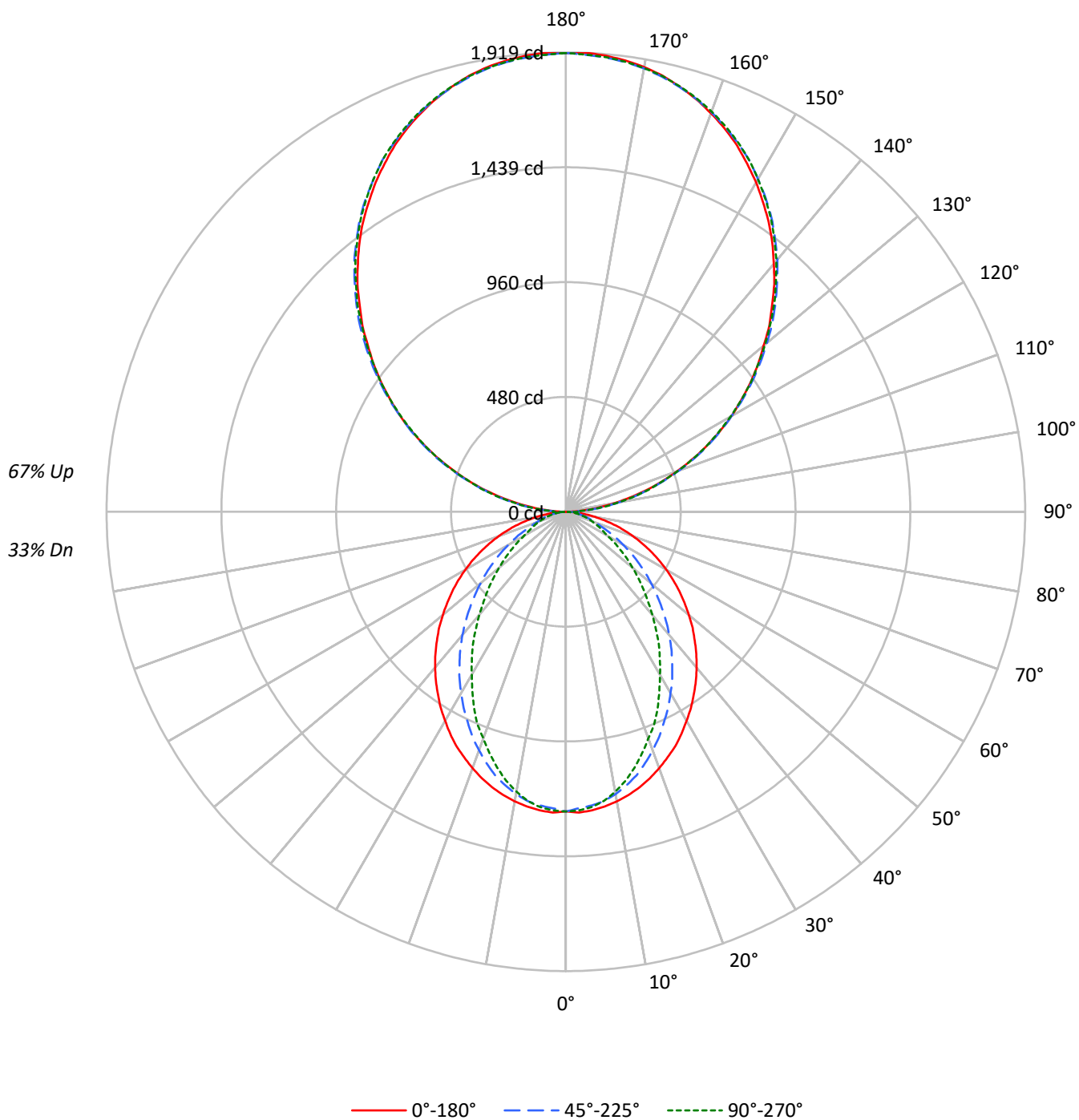
Lumens per Lamp: N/A
Luminaire Lumens: 7937.5 lumens
Efficiency: N/A
Efficacy: 101.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 78
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907744

CATALOG NUMBER: DFN2DIP-4P4F0-030D060US840-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P907744

CATALOG NUMBER: DFN2DIP-4P4F0-030D060US840-RLLFLL

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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	812	812	812
5°	814	800	805
10°	806	784	779
15°	795	759	739
20°	780	723	689
25°	765	683	642
30°	745	642	581
35°	725	598	528
40°	705	553	466
45°	682	502	411
50°	658	451	357
55°	633	397	305
60°	603	340	251
65°	570	282	226
70°	530	228	205
75°	479	201	187
80°	405	169	164
85°	283	115	125

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1448 cd/sqm

TEST NUMBER: P907744

CATALOG NUMBER: DFN2DIP-4P4F0-030D060US840-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.4	1.5
10°-20°	322.1	4.1
20°-30°	452.3	5.7
30°-40°	493.0	6.2
40°-50°	453.1	5.7
50°-60°	355.9	4.5
60°-70°	231.6	2.9
70°-80°	119.2	1.5
80°-90°	35.9	0.5
90°-100°	118.6	1.5
100°-110°	376.8	4.7
110°-120°	644.8	8.1
120°-130°	848.0	10.7
130°-140°	951.8	12.0
140°-150°	933.4	11.8
150°-160°	783.0	9.9
160°-170°	519.2	6.5
170°-180°	181.5	2.3
0°-30°	891.8	11.2
0°-40°	1384.8	17.4
0°-60°	2193.8	27.6
0°-90°	2580.6	32.5
90°-120°	1140.1	14.4
90°-150°	3873.3	48.8
90°-180°	5357.0	67.5
0°-180°	7937.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1252	1252	1252	1252	1252	
5°	1252	1246	1232	1242	1238	119
15°	1191	1178	1140	1118	1107	336
25°	1081	1045	970	924	906	497
35°	932	874	774	703	678	583
45°	762	686	567	486	459	588
55°	579	491	368	300	279	517
65°	391	299	197	159	155	388
75°	208	129	91	83	82	220
85°	49	25	22	22	22	56
90°	2	21	57	53	55	8
95°	84	100	103	103	100	94
105°	348	352	356	359	359	367
115°	647	656	653	652	647	640
125°	941	956	951	946	944	841
135°	1217	1235	1239	1237	1232	941
145°	1478	1489	1499	1500	1494	923
155°	1690	1694	1700	1708	1702	778
165°	1838	1836	1836	1848	1840	519
175°	1913	1908	1905	1916	1906	182
180°	1916	1916	1916	1916	1916	

TEST NUMBER: P907744

CATALOG NUMBER: DFN2DIP-4P4F0-030D060US840-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1252.1	1252.1	1252.1	1252.1	1252.1
2.5°	1257.8	1252.1	1239.6	1251.0	1248.8
5°	1252.1	1246.5	1231.7	1241.9	1238.5
7.5°	1241.9	1235.2	1219.3	1223.8	1218.1
10°	1228.3	1220.4	1197.8	1194.3	1187.6
12.5°	1211.3	1201.1	1170.5	1163.8	1151.2
15°	1190.9	1178.4	1139.9	1118.4	1107.1
17.5°	1167.1	1149.0	1101.4	1076.5	1058.3
20°	1139.9	1117.2	1060.6	1032.4	1007.3
22.5°	1110.5	1084.4	1018.7	980.2	963.2
25°	1081.1	1044.7	970.0	923.5	906.5
27.5°	1045.9	1007.3	924.6	871.4	845.3
30°	1008.6	965.4	874.7	817.1	786.4
32.5°	972.2	920.1	827.3	759.2	730.8
35°	931.5	873.6	774.0	702.6	677.6
37.5°	891.8	829.4	724.1	645.8	617.6
40°	849.9	781.9	672.0	591.5	562.1
42.5°	806.8	734.4	619.9	535.9	507.7
45°	761.5	685.5	566.6	486.0	458.9
47.5°	718.4	638.0	515.6	435.1	410.2
50°	670.9	590.4	465.7	387.5	363.8
52.5°	624.3	539.4	418.2	343.4	321.8
55°	579.0	490.6	368.2	300.3	278.8
57.5°	532.6	441.9	324.2	260.6	242.5
60°	484.9	394.4	277.6	219.8	201.8
62.5°	438.6	347.9	237.9	183.6	174.6
65°	390.9	299.1	197.1	158.6	155.2
67.5°	345.7	253.8	158.6	139.4	135.9
70°	298.0	209.6	131.4	120.1	115.5
72.5°	252.7	168.7	109.9	100.9	98.6
75°	208.4	129.2	90.7	82.7	81.6
77.5°	164.3	91.7	71.4	66.9	64.5
80°	123.5	65.7	54.3	49.9	49.9
82.5°	86.0	44.2	37.4	35.1	35.1
85°	48.7	24.8	21.5	21.5	21.5
87.5°	18.2	9.0	9.0	8.0	8.0
90°	1.7	20.8	56.7	53.1	54.8
92.5°	35.9	48.6	50.3	52.0	52.0
95°	84.3	100.5	103.4	103.4	100.5
97.5°	140.4	155.4	161.8	161.8	161.8
100°	205.1	218.3	223.0	223.0	221.3
102.5°	273.3	283.1	289.4	291.1	289.4
105°	347.8	352.4	355.9	358.8	358.8
107.5°	421.7	428.7	428.7	429.8	421.7
110°	493.4	502.6	502.6	502.6	498.0

TEST NUMBER: P907744

CATALOG NUMBER: DFN2DIP-4P4F0-030D060US840-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	570.8	580.6	578.9	574.2	570.8
115°	647.0	656.3	653.4	651.7	647.0
117.5°	722.8	735.5	727.3	722.8	718.1
120°	799.0	811.7	799.0	799.0	793.8
122.5°	868.3	884.4	876.4	871.8	868.3
125°	941.1	955.5	950.9	945.7	944.0
127.5°	1012.2	1030.1	1023.7	1016.8	1012.2
130°	1078.6	1099.4	1096.5	1093.1	1086.7
132.5°	1153.2	1169.3	1170.4	1162.4	1157.7
135°	1217.3	1235.2	1238.6	1236.9	1232.2
137.5°	1288.9	1303.3	1306.3	1305.0	1298.2
140°	1351.9	1366.3	1374.4	1374.4	1368.1
142.5°	1416.5	1431.0	1435.6	1437.3	1431.0
145°	1477.8	1489.3	1498.6	1500.4	1494.0
147.5°	1532.7	1547.1	1554.1	1556.9	1550.5
150°	1589.3	1599.1	1605.5	1610.6	1605.5
152.5°	1639.5	1649.4	1657.5	1663.9	1657.5
155°	1689.8	1694.5	1699.6	1707.8	1702.5
157.5°	1733.1	1736.7	1739.5	1751.1	1743.0
160°	1771.9	1775.3	1777.1	1786.9	1780.0
162.5°	1807.7	1807.7	1809.4	1820.4	1812.3
165°	1838.3	1836.5	1836.5	1848.2	1840.1
167.5°	1866.0	1860.9	1860.9	1872.4	1864.3
170°	1886.8	1882.2	1880.5	1892.0	1882.2
172.5°	1901.3	1896.6	1894.9	1906.4	1896.6
175°	1912.8	1908.2	1904.7	1916.3	1906.4
177.5°	1919.1	1914.6	1911.1	1920.9	1911.1
180°	1916.3	1916.3	1916.3	1916.3	1916.3

TEST NUMBER: P907744

CATALOG NUMBER: DFN2DIP-4P4F0-030D060US840-RLLFLL

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	4.54	5.25	5.64	6.34	7.84	0.50	1.21	1.60	2.30	3.80
	3H	6.22	6.85	7.32	7.95	9.47	1.68	2.31	2.79	3.42	4.93
	4H	6.82	7.42	7.94	8.52	10.05	2.13	2.73	3.25	3.83	5.36
	6H	7.24	7.79	8.37	8.90	10.43	2.44	2.99	3.57	4.10	5.64
	8H	7.37	7.89	8.50	9.01	10.54	2.53	3.06	3.66	4.18	5.71
	12H	7.43	7.92	8.56	9.04	10.59	2.57	3.07	3.71	4.18	5.74
4H	2H	4.54	5.14	5.67	6.25	7.77	1.08	1.68	2.21	2.79	4.31
	3H	6.37	6.87	7.50	8.00	9.53	2.43	2.92	3.56	4.05	5.59
	4H	7.06	7.52	8.19	8.64	10.19	2.97	3.43	4.11	4.55	6.10
	6H	7.57	7.97	8.72	9.11	10.66	3.39	3.78	4.53	4.92	6.47
	8H	7.75	8.12	8.89	9.25	10.81	3.51	3.88	4.65	5.01	6.58
	12H	7.84	8.17	9.00	9.32	10.89	3.57	3.90	4.73	5.05	6.62
8H	4H	7.02	7.38	8.16	8.52	10.08	3.25	3.61	4.39	4.74	6.31
	6H	7.59	7.89	8.75	9.06	10.63	3.76	4.06	4.92	5.24	6.80
	8H	7.81	8.07	8.97	9.22	10.81	3.95	4.22	5.12	5.37	6.95
	12H	7.94	8.17	9.11	9.33	10.94	4.07	4.30	5.24	5.45	7.07
12H	4H	6.97	7.30	8.12	8.44	10.01	3.25	3.58	4.40	4.72	6.29
	6H	7.56	7.83	8.73	8.98	10.56	3.81	4.08	4.98	5.23	6.81
	8H	7.78	8.01	8.95	9.16	10.78	4.02	4.25	5.19	5.40	7.02

END OF REPORT