

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: P907668

Luminaire Tested: DFN2DIP-4P3F0-030D060US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907668
REPORT IS A COMBINATION OF REPORTS P899072 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D060US840-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

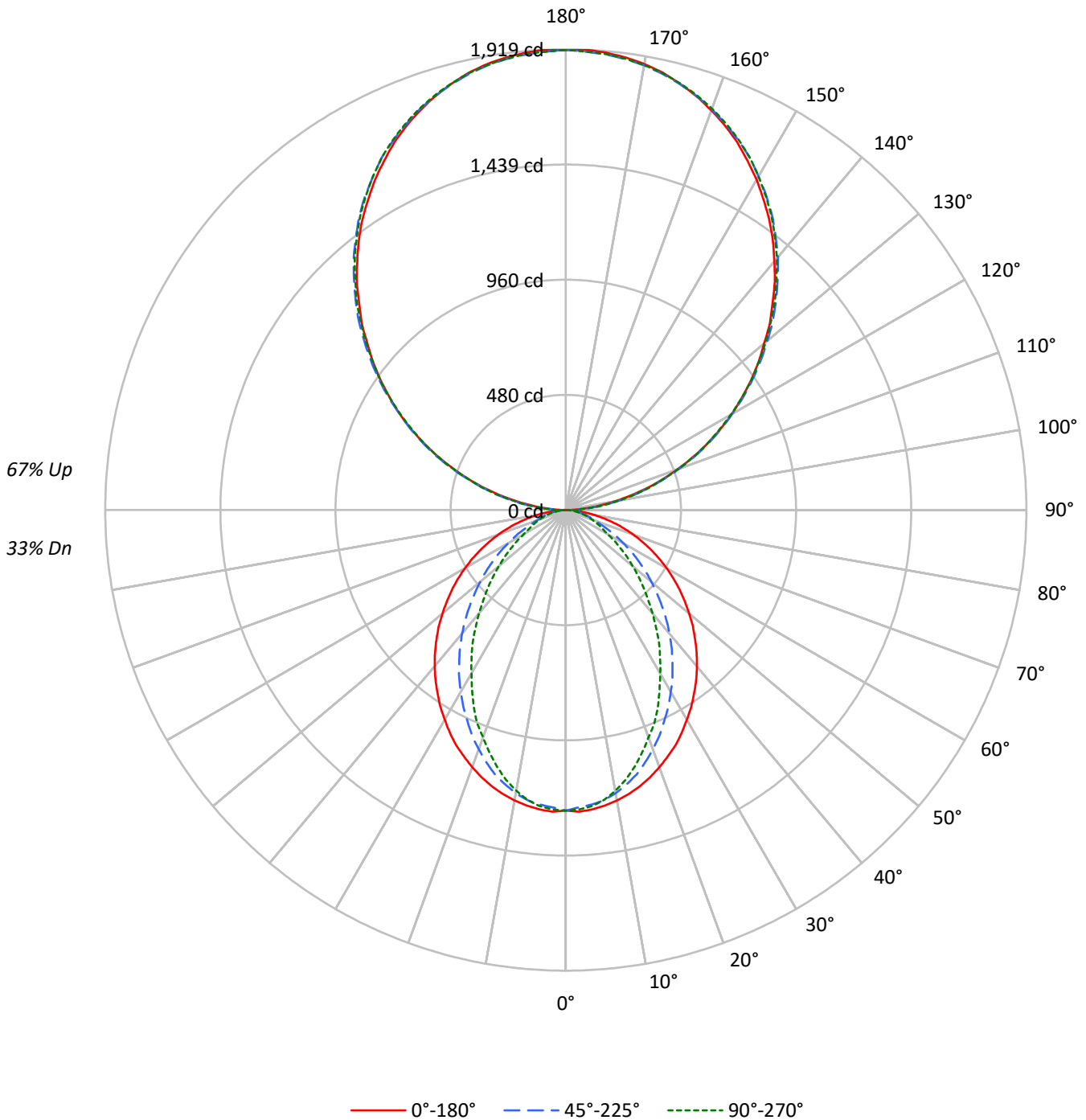
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7937.5 lumens
Efficiency: N/A
Efficacy: 108.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 73.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907668
CATALOG NUMBER: DFN2DIP-4P3F0-030D060US840-RLLFLL

Luminous Intensity Polar Plot





TEST NUMBER: P907668

CATALOG NUMBER: DFN2DIP-4P3F0-030D060US840-RLLFLL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40	40	40	40	33
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34	36	35	34	28
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29	32	31	29	24
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25	29	27	25	21
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22	26	24	22	18
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19	23	21	19	16
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17	21	19	17	14
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15	19	17	15	13
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14	18	16	14	11
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13	17	14	13	10
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11	15	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1427	1427	1427
5°	1428	1403	1413
10°	1413	1375	1366
15°	1393	1328	1295
20°	1366	1265	1207
25°	1339	1194	1123
30°	1303	1121	1016
35°	1267	1043	922
40°	1231	963	814
45°	1189	873	716
50°	1145	783	621
55°	1099	686	529
60°	1046	586	435
65°	985	484	391
70°	911	389	353
75°	818	341	320
80°	684	283	276
85°	464	184	205

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1919 cd/sqm



TEST NUMBER: P907668

CATALOG NUMBER: DFN2DIP-4P3F0-030D060US840-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: P907668

CATALOG NUMBER: DFN2DIP-4P3F0-030D060US840-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: P907668

CATALOG NUMBER: DFN2DIP-4P3F0-030D060US840-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: P907668
 CATALOG NUMBER: DFN2DIP-4P3F0-030D060US840-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	6.45	7.15	7.55	8.25	9.75	2.41	3.11	3.51	4.21	5.71
	3H	8.11	8.74	9.22	9.84	11.36	3.58	4.21	4.69	5.31	6.83
	4H	8.71	9.31	9.83	10.41	11.94	4.02	4.62	5.14	5.72	7.25
	6H	9.12	9.67	10.25	10.78	12.31	4.33	4.88	5.46	5.98	7.52
	8H	9.24	9.77	10.37	10.89	12.42	4.41	4.94	5.54	6.06	7.59
	12H	9.30	9.79	10.43	10.91	12.46	4.45	4.95	5.58	6.06	7.61
4H	2H	6.45	7.05	7.57	8.15	9.67	2.98	3.58	4.11	4.69	6.21
	3H	8.26	8.76	9.39	9.89	11.43	4.32	4.81	5.45	5.94	7.48
	4H	8.94	9.40	10.08	10.52	12.08	4.85	5.31	5.99	6.43	7.99
	6H	9.45	9.84	10.59	10.98	12.53	5.26	5.65	6.40	6.79	8.34
	8H	9.62	9.98	10.76	11.12	12.68	5.38	5.75	6.52	6.88	8.45
	12H	9.70	10.04	10.86	11.18	12.75	5.44	5.77	6.59	6.91	8.48
8H	4H	8.90	9.27	10.04	10.40	11.97	5.12	5.49	6.26	6.62	8.19
	6H	9.46	9.76	10.62	10.93	12.50	5.63	5.93	6.79	7.10	8.67
	8H	9.67	9.93	10.84	11.09	12.67	5.81	6.08	6.98	7.23	8.81
	12H	9.80	10.03	10.97	11.18	12.80	5.92	6.15	7.09	7.30	8.92
12H	4H	8.85	9.18	10.00	10.32	11.89	5.12	5.45	6.28	6.60	8.17
	6H	9.43	9.69	10.60	10.85	12.43	5.68	5.94	6.84	7.09	8.68
	8H	9.64	9.87	10.81	11.03	12.64	5.87	6.11	7.04	7.26	8.87