

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: P907832

Luminaire Tested: DFN2DIP-4P4F0-070D040US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907832
REPORT IS A COMBINATION OF REPORTS P899100 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-070D040US840-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

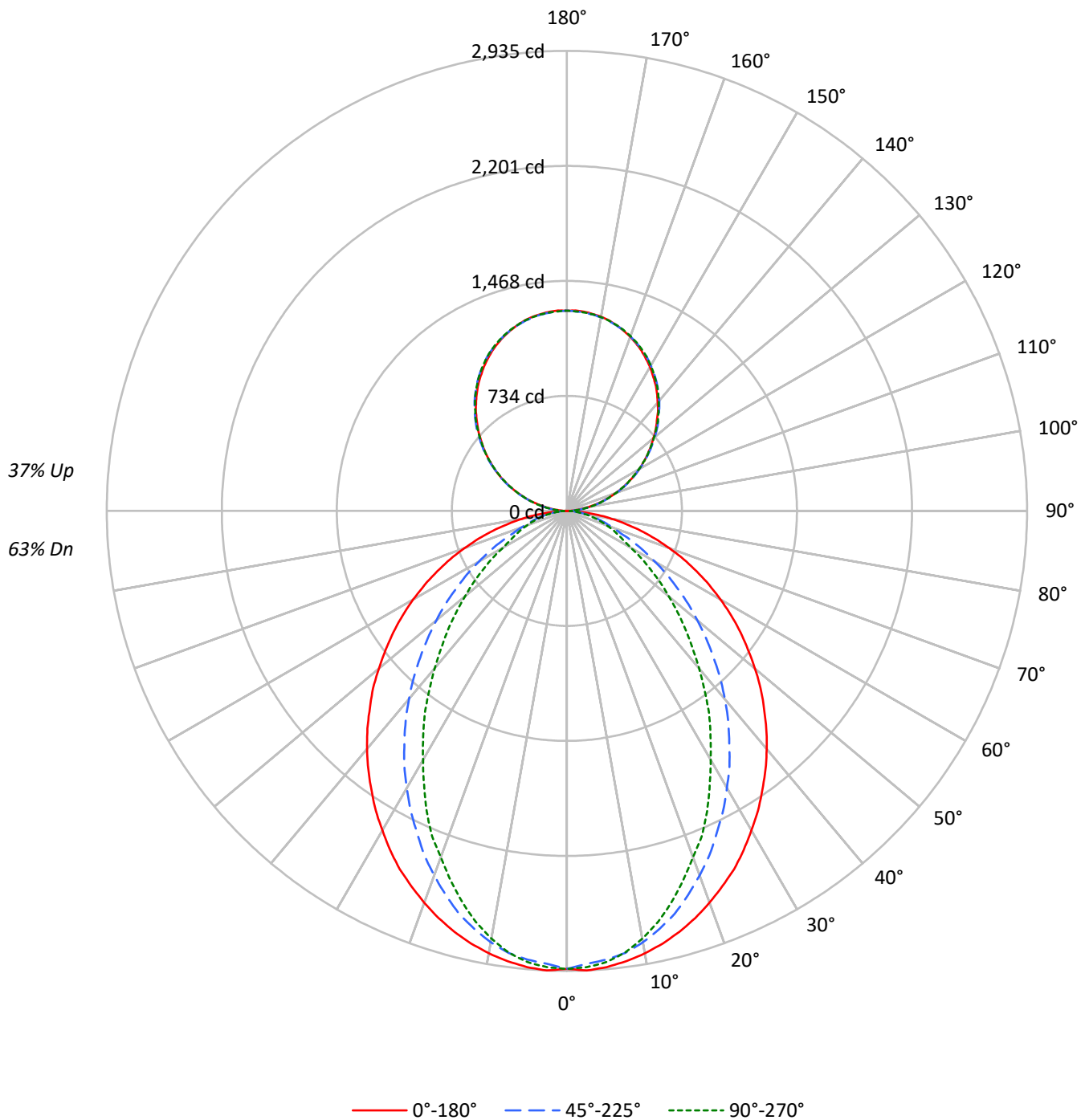
Lumens per Lamp: N/A
Luminaire Lumens: 9583.6 lumens
Efficiency: N/A
Efficacy: 91.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 105.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907832

CATALOG NUMBER: DFN2DIP-4P4F0-070D040US840-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P907832

CATALOG NUMBER: DFN2DIP-4P4F0-070D040US840-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	110	110	110	110	103	103	103	103	90	90	90	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	70	68	67	61	60	58
2	93	85	80	75	87	80	75	71	71	67	64	62	59	57	54	52	50
3	85	76	69	63	79	71	65	60	63	58	54	56	52	49	49	46	43
4	78	67	60	54	73	64	57	51	57	51	47	50	46	42	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	45	41	37	40	36	33
6	67	55	47	41	62	52	44	39	46	40	36	41	36	33	36	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	29	33	30	27
8	57	45	38	32	54	43	36	31	39	33	29	35	30	26	31	27	24
9	54	42	34	29	50	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	36	30	25	33	27	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1895	1895	1895
5°	1899	1866	1878
10°	1880	1830	1818
15°	1854	1770	1724
20°	1820	1687	1608
25°	1785	1594	1497
30°	1738	1499	1355
35°	1692	1396	1231
40°	1645	1290	1088
45°	1591	1172	959
50°	1535	1053	832
55°	1476	926	711
60°	1408	793	586
65°	1330	657	528
70°	1236	531	479
75°	1117	469	437
80°	945	396	382
85°	660	268	292

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1591 cd/sqm

TEST NUMBER: P907832

CATALOG NUMBER: DFN2DIP-4P4F0-070D040US840-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	273.8	2.9
10°-20°	751.7	7.8
20°-30°	1055.3	11.0
30°-40°	1150.4	12.0
40°-50°	1057.3	11.0
50°-60°	830.4	8.7
60°-70°	540.5	5.6
70°-80°	278.2	2.9
80°-90°	74.6	0.8
90°-100°	79.1	0.8
100°-110°	251.2	2.6
110°-120°	429.8	4.5
120°-130°	565.3	5.9
130°-140°	634.5	6.6
140°-150°	622.2	6.5
150°-160°	522.0	5.4
160°-170°	346.2	3.6
170°-180°	121.0	1.3
0°-30°	2080.9	21.7
0°-40°	3231.2	33.7
0°-60°	5118.9	53.4
0°-90°	6012.3	62.7
90°-120°	760.1	7.9
90°-150°	2582.2	26.9
90°-180°	3571.0	37.3
0°-180°	9583.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2922	2922	2922	2922	2922	
5°	2922	2908	2874	2898	2890	277
15°	2779	2750	2660	2610	2583	783
25°	2522	2438	2263	2155	2115	1160
35°	2173	2038	1806	1639	1581	1360
45°	1777	1600	1322	1134	1071	1372
55°	1351	1145	859	701	651	1207
65°	912	698	460	370	362	904
75°	486	301	212	193	190	515
85°	114	58	50	50	50	130
90°	1	14	38	35	37	9
95°	56	67	69	69	67	63
105°	232	235	237	239	239	245
115°	431	438	436	434	431	427
125°	627	637	634	630	629	561
135°	812	823	826	825	822	627
145°	985	993	999	1000	996	616
155°	1126	1130	1133	1138	1135	519
165°	1226	1224	1224	1232	1227	346
175°	1275	1272	1270	1278	1271	121
180°	1278	1278	1278	1278	1278	

TEST NUMBER: P907832

CATALOG NUMBER: DFN2DIP-4P4F0-070D040US840-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2921.6	2921.6	2921.6	2921.6	2921.6
2.5°	2934.8	2921.6	2892.5	2919.1	2913.8
5°	2921.6	2908.4	2874.0	2897.8	2889.9
7.5°	2897.8	2882.1	2845.1	2855.4	2842.3
10°	2866.1	2847.6	2794.8	2786.7	2771.0
12.5°	2826.5	2802.7	2731.2	2715.4	2686.2
15°	2778.8	2749.7	2659.9	2609.7	2583.3
17.5°	2723.3	2681.0	2569.9	2511.7	2469.4
20°	2659.9	2606.9	2474.8	2408.8	2350.5
22.5°	2591.2	2530.3	2376.8	2287.0	2247.6
25°	2522.4	2437.7	2263.2	2155.0	2115.2
27.5°	2440.5	2350.5	2157.5	2033.3	1972.4
30°	2353.3	2252.6	2041.0	1906.4	1834.9
32.5°	2268.6	2146.9	1930.3	1771.5	1705.3
35°	2173.4	2038.5	1806.0	1639.4	1581.0
37.5°	2080.9	1935.3	1689.6	1506.9	1441.1
40°	1983.0	1824.5	1567.8	1380.2	1311.4
42.5°	1882.6	1713.4	1446.3	1250.5	1184.7
45°	1776.9	1599.5	1322.1	1134.2	1070.8
47.5°	1676.4	1488.7	1203.2	1015.2	957.2
50°	1565.3	1377.7	1086.7	904.1	848.9
52.5°	1456.7	1258.4	975.6	801.1	750.9
55°	1351.0	1144.8	859.2	700.7	650.6
57.5°	1242.7	1031.2	756.3	608.1	565.8
60°	1131.7	920.1	647.7	513.1	470.7
62.5°	1023.3	811.8	555.1	428.4	407.3
65°	912.2	697.9	460.1	370.3	362.1
67.5°	806.5	592.2	370.3	325.1	317.3
70°	695.4	489.2	306.6	280.2	269.5
72.5°	589.7	393.8	256.4	235.4	230.0
75°	486.5	301.2	211.5	193.0	190.5
77.5°	383.4	214.0	166.6	155.9	150.7
80°	288.1	153.4	126.8	116.4	116.4
82.5°	200.9	103.2	87.3	81.9	81.9
85°	113.6	58.1	50.2	50.2	50.2
87.5°	42.3	21.0	21.0	18.5	18.5
90°	1.1	13.8	37.8	35.4	36.6
92.5°	23.8	32.3	33.5	34.6	34.6
95°	56.2	67.1	69.0	69.0	67.1
97.5°	93.6	103.6	107.9	107.9	107.9
100°	136.7	145.6	148.7	148.7	147.5
102.5°	182.2	188.7	193.0	194.1	193.0
105°	231.9	234.9	237.2	239.1	239.1
107.5°	281.1	285.8	285.8	286.5	281.1
110°	328.9	335.1	335.1	335.1	332.0

TEST NUMBER: P907832

CATALOG NUMBER: DFN2DIP-4P4F0-070D040US840-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	380.5	387.1	385.9	382.8	380.5
115°	431.3	437.6	435.6	434.4	431.3
117.5°	481.8	490.3	484.9	481.8	478.8
120°	532.7	541.1	532.7	532.7	529.2
122.5°	578.9	589.7	584.3	581.2	578.9
125°	627.4	637.0	634.0	630.5	629.3
127.5°	674.8	686.7	682.5	677.8	674.8
130°	719.0	733.0	731.0	728.7	724.5
132.5°	768.7	779.5	780.3	774.9	771.8
135°	811.5	823.4	825.8	824.6	821.5
137.5°	859.3	868.9	870.8	870.0	865.5
140°	901.2	910.9	916.3	916.3	912.0
142.5°	944.4	954.0	957.0	958.3	954.0
145°	985.2	992.9	999.1	1000.3	996.0
147.5°	1021.8	1031.4	1036.0	1037.9	1033.7
150°	1059.6	1066.1	1070.4	1073.8	1070.4
152.5°	1093.1	1099.5	1105.0	1109.2	1105.0
155°	1126.5	1129.6	1133.1	1138.5	1135.0
157.5°	1155.5	1157.7	1159.6	1167.4	1162.0
160°	1181.2	1183.6	1184.7	1191.2	1186.6
162.5°	1205.1	1205.1	1206.3	1213.6	1208.2
165°	1225.6	1224.4	1224.4	1232.0	1226.7
167.5°	1244.1	1240.5	1240.5	1248.3	1242.8
170°	1257.9	1254.8	1253.6	1261.3	1254.8
172.5°	1267.5	1264.5	1263.2	1271.0	1264.5
175°	1275.3	1272.1	1269.8	1277.5	1271.0
177.5°	1279.5	1276.4	1274.0	1280.6	1274.0
180°	1277.5	1277.5	1277.5	1277.5	1277.5

TEST NUMBER: P907832

CATALOG NUMBER: DFN2DIP-4P4F0-070D040US840-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	10.50	11.45	11.35	12.31	13.39	6.46	7.41	7.31	8.27	9.35
	3H	12.19	13.04	13.05	13.91	15.02	7.66	8.50	8.52	9.38	10.49
	4H	12.81	13.61	13.69	14.49	15.61	8.12	8.91	8.99	9.79	10.91
	6H	13.24	13.98	14.13	14.86	15.99	8.44	9.18	9.33	10.07	11.20
	8H	13.37	14.07	14.27	14.98	16.11	8.54	9.24	9.43	10.14	11.27
	12H	13.44	14.11	14.34	15.01	16.16	8.59	9.25	9.49	10.15	11.31
4H	2H	10.53	11.33	11.41	12.21	13.33	7.07	7.87	7.95	8.75	9.87
	3H	12.38	13.04	13.27	13.95	15.09	8.44	9.10	9.33	10.01	11.14
	4H	13.08	13.68	13.98	14.59	15.75	8.99	9.59	9.89	10.50	11.66
	6H	13.61	14.13	14.52	15.06	16.22	9.42	9.94	10.33	10.87	12.03
	8H	13.79	14.27	14.71	15.20	16.37	9.55	10.03	10.47	10.96	12.13
	12H	13.89	14.33	14.83	15.27	16.45	9.62	10.06	10.56	11.00	12.18
8H	4H	13.06	13.54	13.98	14.47	15.64	9.28	9.77	10.20	10.69	11.87
	6H	13.63	14.03	14.58	15.00	16.17	9.81	10.21	10.75	11.18	12.35
	8H	13.85	14.21	14.81	15.17	16.36	10.00	10.35	10.96	11.31	12.50
	12H	14.00	14.31	14.96	15.26	16.51	10.13	10.44	11.08	11.39	12.63
12H	4H	13.01	13.45	13.95	14.39	15.57	9.29	9.73	10.23	10.67	11.85
	6H	13.61	13.96	14.56	14.92	16.11	9.86	10.21	10.81	11.17	12.36
	8H	13.84	14.15	14.80	15.10	16.34	10.08	10.39	11.03	11.34	12.58