

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: P908890

Luminaire Tested: DFN2DIP-PN4F0-120D040US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908890
REPORT IS A COMBINATION OF REPORTS P899626 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-120D040US840-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

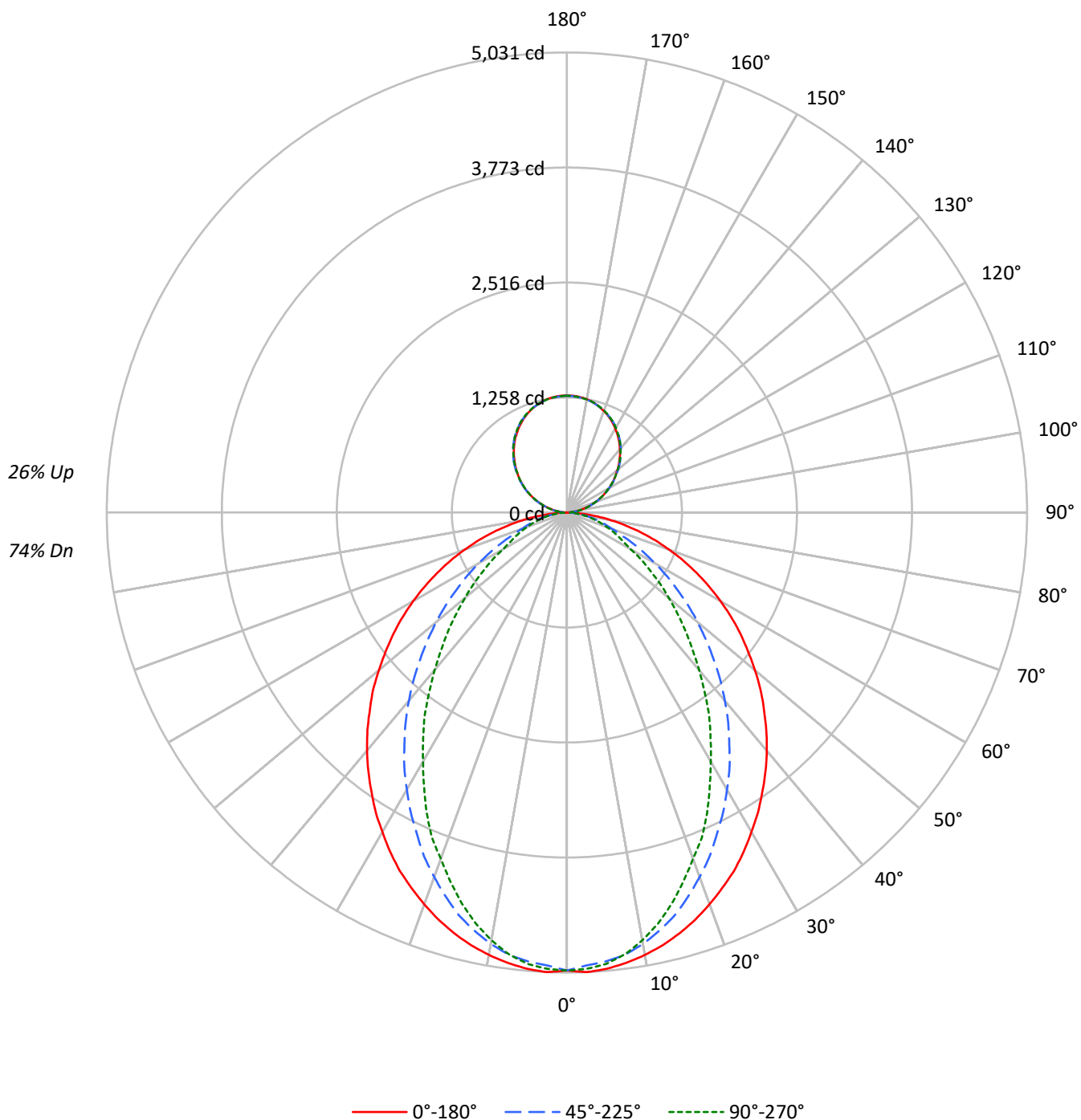
Lumens per Lamp: N/A
Luminaire Lumens: 13875.5 lumens
Efficiency: N/A
Efficacy: 88.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 156.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P908890

CATALOG NUMBER: DFN2DIP-PN4F0-120D040US840-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P908890

CATALOG NUMBER: DFN2DIP-PN4F0-120D040US840-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	113	113	113	113	107	107	107	107	97	97	97	87	87	87	78	78	78
1	104	100	96	93	99	95	92	89	86	84	81	78	76	74	70	69	68
2	95	88	82	77	90	84	79	74	76	72	68	69	66	63	63	60	58
3	87	78	71	65	83	75	68	63	68	63	58	62	58	54	56	53	50
4	80	70	62	56	76	67	60	54	61	55	51	56	51	47	51	47	44
5	74	63	54	48	70	60	53	47	55	49	44	51	45	42	46	42	39
6	69	57	48	43	65	54	47	41	50	44	39	46	41	37	42	38	35
7	64	51	43	38	61	49	42	37	46	39	35	42	37	33	39	34	31
8	59	47	39	34	57	45	38	33	42	36	31	39	34	30	36	31	28
9	56	43	36	31	53	42	35	30	39	33	28	36	31	27	33	29	26
10	52	40	33	28	50	39	32	27	36	30	26	33	28	25	31	27	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3656	3656	3656
5°	3662	3598	3622
10°	3626	3528	3505
15°	3576	3412	3323
20°	3510	3252	3100
25°	3442	3072	2884
30°	3351	2888	2611
35°	3262	2689	2371
40°	3172	2484	2095
45°	3067	2257	1846
50°	2958	2027	1602
55°	2844	1781	1367
60°	2713	1524	1126
65°	2562	1263	1014
70°	2378	1019	919
75°	2148	899	837
80°	1815	756	728
85°	1264	507	552

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3067 cd/sqm

TEST NUMBER: P908890

CATALOG NUMBER: DFN2DIP-PN4F0-120D040US840-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	469.4	3.4
10°-20°	1288.6	9.3
20°-30°	1809.2	13.0
30°-40°	1972.1	14.2
40°-50°	1812.6	13.1
50°-60°	1423.5	10.3
60°-70°	926.6	6.7
70°-80°	476.9	3.4
80°-90°	125.4	0.9
90°-100°	79.1	0.6
100°-110°	251.2	1.8
110°-120°	429.8	3.1
120°-130°	565.3	4.1
130°-140°	634.5	4.6
140°-150°	622.2	4.5
150°-160°	522.0	3.8
160°-170°	346.2	2.5
170°-180°	121.0	0.9
0°-30°	3567.2	25.7
0°-40°	5539.3	39.9
0°-60°	8775.3	63.2
0°-90°	10304.2	74.3
90°-120°	760.1	5.5
90°-150°	2582.2	18.6
90°-180°	3571.0	25.7
0°-180°	13875.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5008	5008	5008	5008	5008	
5°	5008	4986	4927	4968	4954	475
15°	4764	4714	4560	4474	4429	1342
25°	4324	4179	3880	3694	3626	1989
35°	3726	3495	3096	2810	2710	2332
45°	3046	2742	2266	1944	1836	2352
55°	2316	1963	1473	1201	1115	2070
65°	1564	1196	789	635	621	1550
75°	834	516	363	331	326	882
85°	195	100	86	86	86	224
90°	1	14	38	35	37	14
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: P908890

CATALOG NUMBER: DFN2DIP-PN4F0-120D040US840-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5008.5	5008.5	5008.5	5008.5	5008.5
2.5°	5031.2	5008.5	4958.5	5004.2	4995.0
5°	5008.5	4985.9	4926.7	4967.6	4954.2
7.5°	4967.6	4940.7	4877.2	4895.0	4872.4
10°	4913.3	4881.6	4791.1	4777.2	4750.3
12.5°	4845.4	4804.6	4681.9	4655.1	4605.1
15°	4763.7	4713.7	4559.8	4473.7	4428.6
17.5°	4668.5	4595.9	4405.4	4306.0	4233.4
20°	4559.8	4469.0	4242.4	4129.4	4029.4
22.5°	4442.0	4337.7	4074.6	3920.7	3852.9
25°	4324.2	4178.9	3879.8	3694.2	3625.9
27.5°	4183.8	4029.4	3698.5	3485.6	3381.1
30°	4034.2	3861.6	3499.0	3268.1	3145.5
32.5°	3889.0	3680.3	3309.0	3036.9	2923.4
35°	3726.0	3494.6	3095.9	2810.4	2710.3
37.5°	3567.2	3317.7	2896.4	2583.3	2470.3
40°	3399.4	3127.8	2687.8	2366.0	2248.2
42.5°	3227.2	2937.3	2479.5	2143.8	2030.8
45°	3046.0	2742.1	2266.4	1944.3	1835.5
47.5°	2873.8	2552.1	2062.5	1740.4	1640.8
50°	2683.4	2361.7	1863.0	1549.9	1455.2
52.5°	2497.3	2157.3	1672.5	1373.4	1287.4
55°	2316.0	1962.6	1473.0	1201.2	1115.2
57.5°	2130.3	1767.8	1296.5	1042.6	970.0
60°	1940.0	1577.3	1110.3	879.6	807.0
62.5°	1754.3	1391.7	951.7	734.4	698.2
65°	1563.9	1196.5	788.7	634.8	620.9
67.5°	1382.6	1015.1	634.8	557.3	543.9
70°	1192.1	838.7	525.6	480.4	462.1
72.5°	1010.9	675.2	439.5	403.4	394.4
75°	833.8	516.4	362.6	330.8	326.5
77.5°	657.4	366.9	285.7	267.4	258.2
80°	493.9	263.1	217.3	199.5	199.5
82.5°	344.4	176.9	149.6	140.4	140.4
85°	194.8	99.6	86.0	86.0	86.0
87.5°	72.6	36.1	36.1	31.7	31.7
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: P908890

CATALOG NUMBER: DFN2DIP-PN4F0-120D040US840-RLFL

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: P908890

CATALOG NUMBER: DFN2DIP-PN4F0-120D040US840-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	13.68	14.76	14.40	15.49	16.37	9.64	10.72	10.37	11.46	12.34
	3H	15.38	16.34	16.11	17.09	18.00	10.85	11.82	11.59	12.56	13.48
	4H	16.00	16.91	16.75	17.67	18.59	11.31	12.22	12.07	12.98	13.90
	6H	16.44	17.27	17.20	18.04	18.98	11.65	12.48	12.42	13.25	14.19
	8H	16.57	17.37	17.35	18.15	19.09	11.74	12.54	12.52	13.33	14.27
	12H	16.64	17.40	17.42	18.18	19.15	11.80	12.56	12.58	13.34	14.30
4H	2H	13.73	14.63	14.49	15.39	16.32	10.27	11.18	11.03	11.94	12.86
	3H	15.58	16.33	16.35	17.13	18.07	11.64	12.40	12.41	13.19	14.13
	4H	16.28	16.97	17.07	17.76	18.73	12.20	12.88	12.99	13.68	14.65
	6H	16.82	17.41	17.62	18.22	19.20	12.63	13.22	13.44	14.04	15.02
	8H	17.00	17.55	17.81	18.36	19.35	12.77	13.32	13.58	14.13	15.12
	12H	17.11	17.60	17.93	18.44	19.43	12.85	13.34	13.67	14.18	15.17
8H	4H	16.27	16.82	17.08	17.64	18.62	12.50	13.05	13.31	13.87	14.86
	6H	16.85	17.30	17.68	18.16	19.15	13.03	13.48	13.87	14.34	15.33
	8H	17.07	17.47	17.92	18.33	19.33	13.22	13.63	14.07	14.48	15.49
	12H	17.22	17.58	18.07	18.42	19.48	13.35	13.71	14.20	14.55	15.62
12H	4H	16.23	16.73	17.06	17.57	18.56	12.52	13.01	13.34	13.85	14.84
	6H	16.82	17.23	17.67	18.08	19.09	13.08	13.49	13.93	14.34	15.35
	8H	17.06	17.42	17.91	18.26	19.32	13.30	13.66	14.15	14.50	15.57

END OF REPORT