

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: P902204

Luminaire Tested: DFN2DIP-4P3F0-030D040US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902204
REPORT IS A COMBINATION OF REPORTS P899052 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D040US830-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

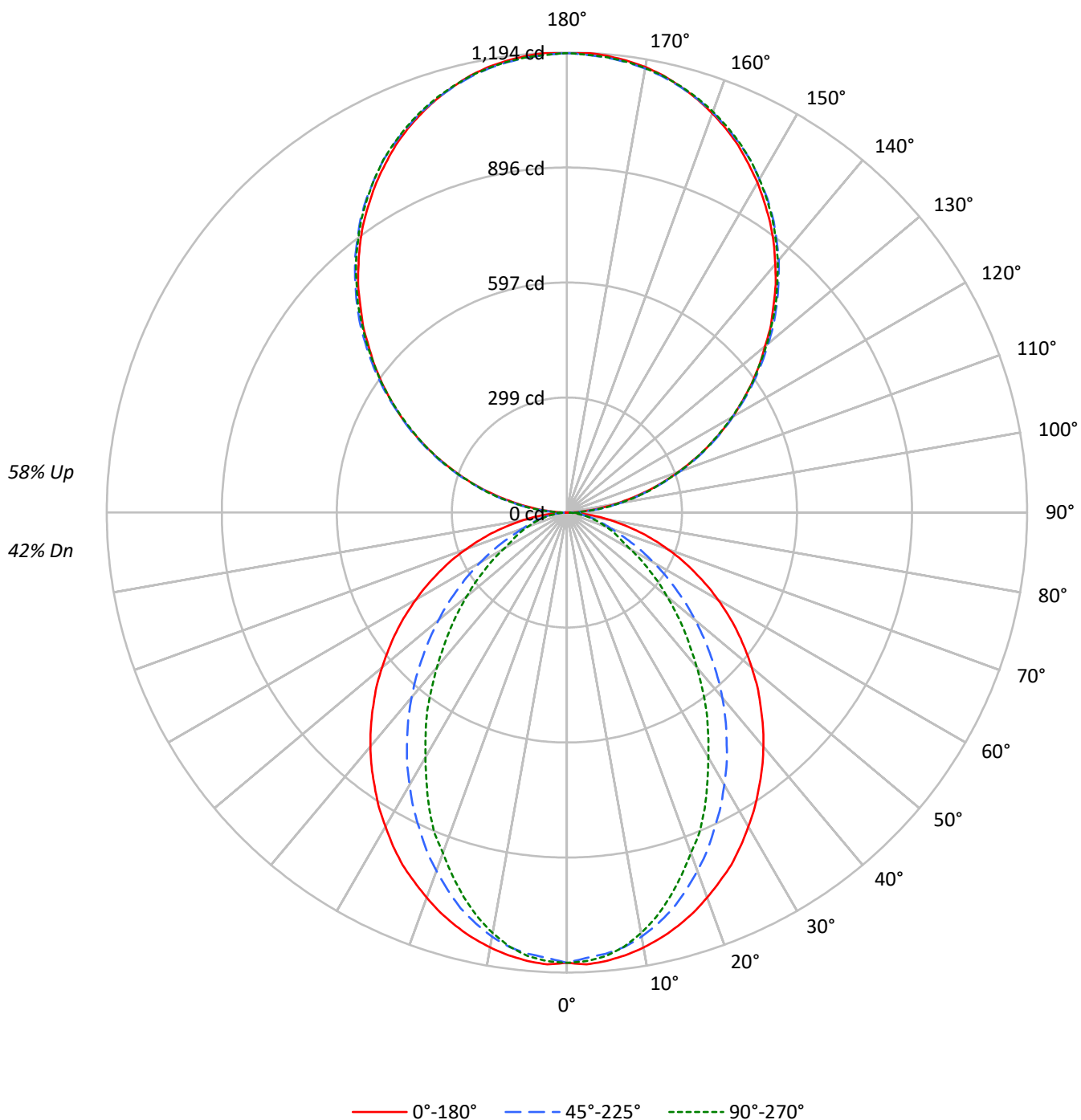
Lumens per Lamp: N/A
Luminaire Lumens: 5740.1 lumens
Efficiency: N/A
Efficacy: 103.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 55.7
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: P902204

CATALOG NUMBER: DFN2DIP-4P3F0-030D040US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902204

CATALOG NUMBER: DFN2DIP-4P3F0-030D040US830-RLFL

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	79	79	79	63	63	63	49	49	49
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	44	43	42
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36
3	81	72	65	59	73	66	60	55	55	50	47	44	41	39	35	33	31
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24
6	63	51	43	38	57	47	40	35	40	34	30	33	29	26	26	23	21
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	34	29	49	39	32	28	33	28	24	27	23	21	22	19	17
9	50	38	31	26	46	36	29	25	30	25	22	25	21	19	20	18	16
10	47	35	28	24	43	33	26	22	28	23	19	23	19	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1332	1332	1332
5°	1333	1310	1319
10°	1319	1283	1275
15°	1300	1240	1209
20°	1275	1181	1127
25°	1250	1114	1048
30°	1216	1046	948
35°	1183	974	860
40°	1149	898	760
45°	1109	815	669
50°	1069	731	579
55°	1026	641	494
60°	977	547	406
65°	920	452	365
70°	851	363	330
75°	764	318	299
80°	639	264	258
85°	433	172	192

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1194 cd/sqm

TEST NUMBER: P902204

CATALOG NUMBER: DFN2DIP-4P3F0-030D040US830-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.5	1.9
10°-20°	300.7	5.2
20°-30°	422.1	7.4
30°-40°	460.2	8.0
40°-50°	422.9	7.4
50°-60°	332.2	5.8
60°-70°	216.2	3.8
70°-80°	111.3	1.9
80°-90°	31.8	0.6
90°-100°	73.8	1.3
100°-110°	234.4	4.1
110°-120°	401.2	7.0
120°-130°	527.6	9.2
130°-140°	592.2	10.3
140°-150°	580.8	10.1
150°-160°	487.2	8.5
160°-170°	323.1	5.6
170°-180°	112.9	2.0
0°-30°	832.3	14.5
0°-40°	1292.5	22.5
0°-60°	2047.6	35.7
0°-90°	2406.9	41.9
90°-120°	709.4	12.4
90°-150°	2410.0	42.0
90°-180°	3333.0	58.1
0°-180°	5740.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1169	1169	1169	1169	1169	
5°	1169	1163	1150	1159	1156	111
15°	1112	1100	1064	1044	1033	313
25°	1009	975	905	862	846	464
35°	869	815	722	656	632	544
45°	711	640	529	454	428	549
55°	540	458	344	280	260	483
65°	365	279	184	148	145	362
75°	194	121	85	77	76	206
85°	45	23	20	20	20	52
90°	1	13	35	33	34	6
95°	52	63	64	64	63	58
105°	216	219	221	223	223	228
115°	403	408	406	406	403	398
125°	586	595	592	588	587	523
135°	757	768	771	770	767	585
145°	920	927	932	934	930	575
155°	1051	1054	1058	1063	1059	484
165°	1144	1143	1143	1150	1145	323
175°	1190	1187	1185	1192	1186	113
180°	1192	1192	1192	1192	1192	

TEST NUMBER: P902204

CATALOG NUMBER: DFN2DIP-4P3F0-030D040US830-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1168.7	1168.7	1168.7	1168.7	1168.7
2.5°	1173.9	1168.7	1157.0	1167.6	1165.5
5°	1168.7	1163.4	1149.6	1159.1	1155.9
7.5°	1159.1	1152.8	1138.0	1142.2	1136.9
10°	1146.4	1139.1	1117.9	1114.7	1108.4
12.5°	1130.6	1121.1	1092.5	1086.2	1074.5
15°	1111.5	1099.9	1063.9	1043.9	1033.3
17.5°	1089.3	1072.4	1027.9	1004.8	987.8
20°	1063.9	1042.7	989.9	963.6	940.2
22.5°	1036.5	1012.1	950.7	914.8	899.0
25°	1009.0	975.1	905.3	862.0	846.0
27.5°	976.2	940.2	863.0	813.3	788.9
30°	941.3	901.1	816.4	762.6	734.0
32.5°	907.4	858.8	772.1	708.6	682.1
35°	869.4	815.4	722.4	655.7	632.4
37.5°	832.4	774.1	675.8	602.8	576.5
40°	793.2	729.8	627.2	552.0	524.6
42.5°	753.0	685.4	578.5	500.2	473.8
45°	710.8	639.8	528.9	453.6	428.3
47.5°	670.5	595.5	481.3	406.0	382.9
50°	626.1	551.0	434.7	361.7	339.5
52.5°	582.7	503.4	390.3	320.5	300.4
55°	540.4	457.9	343.7	280.3	260.2
57.5°	497.1	412.5	302.6	243.3	226.3
60°	452.6	368.1	259.1	205.2	188.3
62.5°	409.3	324.7	222.1	171.4	163.0
65°	364.9	279.2	184.0	148.1	144.9
67.5°	322.6	236.9	148.1	130.1	126.9
70°	278.1	195.7	122.6	112.1	107.8
72.5°	235.8	157.5	102.5	94.2	92.0
75°	194.5	120.6	84.6	77.2	76.2
77.5°	153.4	85.6	66.6	62.4	60.2
80°	115.3	61.4	50.7	46.6	46.6
82.5°	80.3	41.3	34.9	32.8	32.8
85°	45.4	23.2	20.1	20.1	20.1
87.5°	17.0	8.4	8.4	7.4	7.4
90°	1.0	12.9	35.3	33.1	34.1
92.5°	22.2	30.2	31.3	32.3	32.3
95°	52.5	62.6	64.4	64.4	62.6
97.5°	87.4	96.7	100.7	100.7	100.7
100°	127.6	135.9	138.7	138.7	137.7
102.5°	170.0	176.2	180.1	181.2	180.1
105°	216.4	219.2	221.4	223.2	223.2
107.5°	262.4	266.7	266.7	267.4	262.4
110°	307.0	312.7	312.7	312.7	309.9

TEST NUMBER: P902204

CATALOG NUMBER: DFN2DIP-4P3F0-030D040US830-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	355.1	361.3	360.1	357.3	355.1
115°	402.6	408.4	406.5	405.5	402.6
117.5°	449.7	457.6	452.6	449.7	446.9
120°	497.2	505.0	497.2	497.2	493.9
122.5°	540.3	550.4	545.4	542.4	540.3
125°	585.6	594.6	591.7	588.4	587.4
127.5°	629.8	640.9	637.0	632.6	629.8
130°	671.1	684.1	682.3	680.1	676.2
132.5°	717.5	727.5	728.3	723.2	720.4
135°	757.4	768.5	770.7	769.6	766.8
137.5°	802.0	811.0	812.8	812.0	807.8
140°	841.1	850.2	855.2	855.2	851.2
142.5°	881.5	890.4	893.2	894.4	890.4
145°	919.5	926.7	932.5	933.6	929.6
147.5°	953.7	962.6	967.0	968.7	964.8
150°	988.9	995.0	999.0	1002.2	999.0
152.5°	1020.2	1026.2	1031.3	1035.3	1031.3
155°	1051.4	1054.3	1057.5	1062.6	1059.3
157.5°	1078.5	1080.5	1082.3	1089.6	1084.5
160°	1102.5	1104.7	1105.7	1111.8	1107.5
162.5°	1124.7	1124.7	1125.9	1132.7	1127.7
165°	1143.9	1142.7	1142.7	1149.9	1144.9
167.5°	1161.1	1157.8	1157.8	1165.1	1160.0
170°	1174.0	1171.1	1170.1	1177.2	1171.1
172.5°	1183.0	1180.2	1179.0	1186.3	1180.2
175°	1190.2	1187.3	1185.2	1192.3	1186.3
177.5°	1194.2	1191.3	1189.1	1195.2	1189.1
180°	1192.3	1192.3	1192.3	1192.3	1192.3

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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	7.30	8.07	8.33	9.11	10.49	3.27	4.03	4.29	5.07	6.45
	3H	8.97	9.66	10.01	10.70	12.11	4.44	5.13	5.48	6.17	7.58
	4H	9.58	10.23	10.63	11.27	12.68	4.89	5.54	5.94	6.58	7.99
	6H	9.99	10.59	11.05	11.64	13.06	5.20	5.80	6.26	6.84	8.27
	8H	10.11	10.68	11.18	11.75	13.16	5.28	5.85	6.35	6.92	8.34
	12H	10.17	10.71	11.24	11.77	13.21	5.32	5.86	6.39	6.92	8.36
4H	2H	7.31	7.96	8.37	9.01	10.42	3.85	4.50	4.91	5.55	6.96
	3H	9.13	9.67	10.20	10.74	12.17	5.19	5.73	6.25	6.80	8.22
	4H	9.82	10.31	10.89	11.38	12.82	5.73	6.22	6.80	7.29	8.73
	6H	10.33	10.75	11.41	11.84	13.28	6.14	6.56	7.22	7.65	9.09
	8H	10.50	10.89	11.58	11.97	13.43	6.26	6.66	7.34	7.74	9.19
	12H	10.59	10.94	11.68	12.04	13.50	6.32	6.68	7.42	7.77	9.23
8H	4H	9.78	10.18	10.86	11.25	12.71	6.00	6.40	7.08	7.48	8.93
	6H	10.34	10.67	11.44	11.79	13.24	6.51	6.84	7.61	7.96	9.41
	8H	10.55	10.84	11.66	11.94	13.41	6.69	6.98	7.80	8.08	9.56
	12H	10.68	10.94	11.80	12.03	13.55	6.81	7.06	7.92	8.16	9.67
12H	4H	9.73	10.09	10.83	11.18	12.64	6.00	6.36	7.10	7.45	8.91
	6H	10.31	10.60	11.42	11.70	13.18	6.56	6.84	7.67	7.95	9.42
	8H	10.53	10.78	11.64	11.88	13.39	6.76	7.01	7.87	8.11	9.62