

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: P902160

Luminaire Tested: DFN2DIP-4P2F0-030D040US830-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902160
REPORT IS A COMBINATION OF REPORTS P899026 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-030D040US830-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

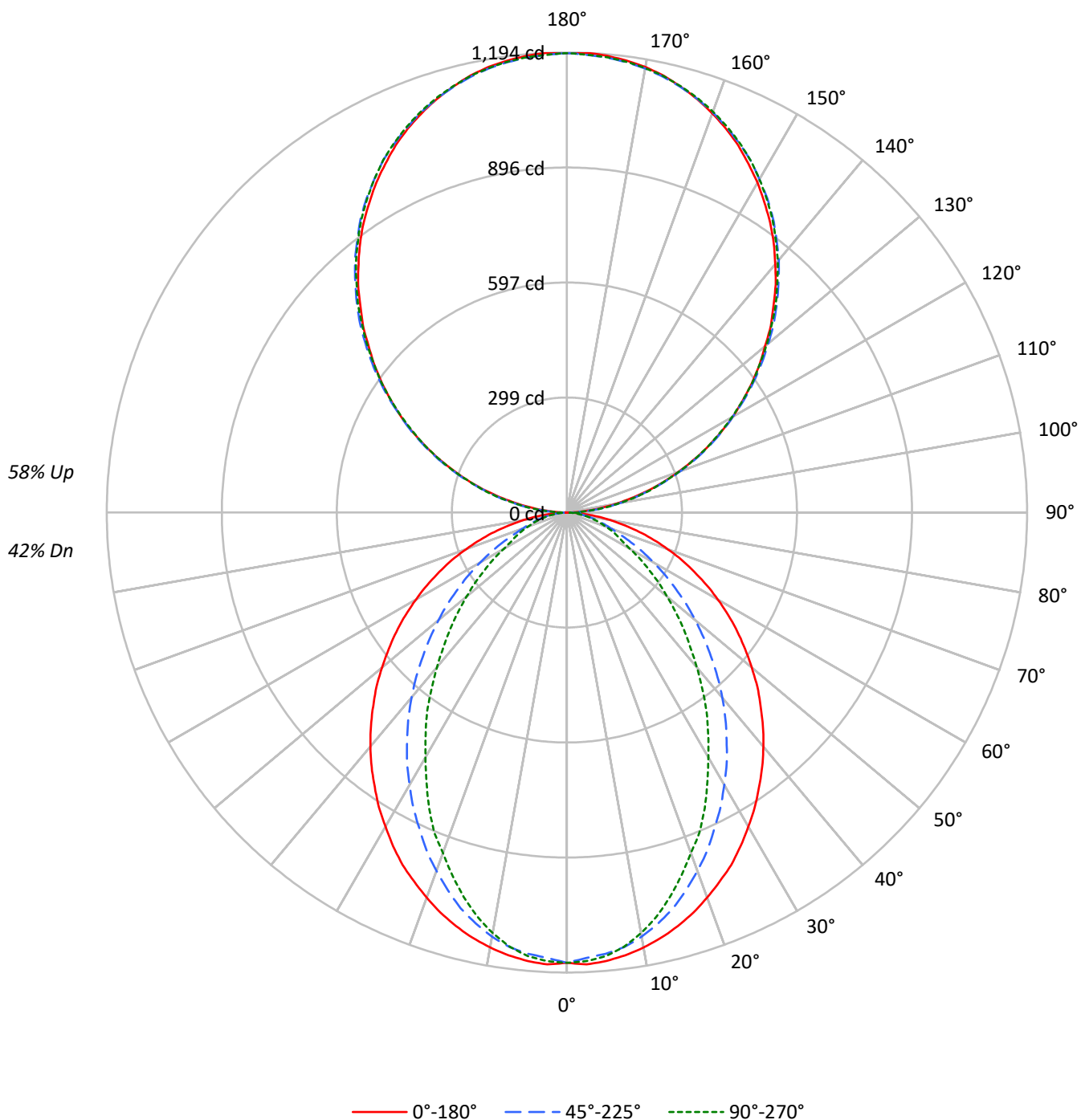
Lumens per Lamp: N/A
Luminaire Lumens: 5740.1 lumens
Efficiency: N/A
Efficacy: 95.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 60.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



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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°	2926	2926	2926
5°	2925	2872	2893
10°	2890	2809	2794
15°	2845	2708	2644
20°	2786	2574	2462
25°	2726	2424	2286
30°	2648	2271	2065
35°	2571	2108	1870
40°	2492	1939	1648
45°	2401	1753	1447
50°	2306	1566	1251
55°	2207	1367	1063
60°	2092	1160	870
65°	1959	951	778
70°	1798	756	697
75°	1595	652	625
80°	1306	527	528
85°	841	324	372

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2401 cd/sqm

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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	

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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

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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	9.94	10.71	10.97	11.74	13.12	5.90	6.67	6.93	7.70	9.09
	3H	11.59	12.28	12.63	13.32	14.72	7.06	7.75	8.10	8.79	10.20
	4H	12.18	12.83	13.23	13.87	15.28	7.50	8.15	8.55	9.19	10.60
	6H	12.58	13.18	13.64	14.23	15.65	7.79	8.39	8.86	9.44	10.86
	8H	12.69	13.26	13.76	14.33	15.74	7.87	8.44	8.94	9.51	10.93
	12H	12.74	13.28	13.81	14.34	15.78	7.91	8.45	8.98	9.50	10.95
4H	2H	9.94	10.59	11.00	11.64	13.05	6.47	7.13	7.53	8.17	9.58
	3H	11.74	12.28	12.81	13.35	14.78	7.79	8.34	8.86	9.41	10.83
	4H	12.41	12.91	13.48	13.97	15.42	8.32	8.82	9.39	9.88	11.33
	6H	12.90	13.33	13.98	14.41	15.85	8.72	9.14	9.80	10.23	11.67
	8H	13.06	13.46	14.14	14.54	15.99	8.83	9.23	9.91	10.31	11.76
	12H	13.14	13.50	14.24	14.59	16.05	8.88	9.24	9.98	10.33	11.79
8H	4H	12.37	12.77	13.45	13.85	15.30	8.58	8.98	9.66	10.06	11.52
	6H	12.91	13.24	14.01	14.36	15.81	9.07	9.40	10.18	10.52	11.97
	8H	13.11	13.40	14.22	14.50	15.97	9.25	9.53	10.36	10.64	12.11
	12H	13.23	13.48	14.34	14.58	16.09	9.35	9.60	10.46	10.70	12.21
12H	4H	12.32	12.68	13.42	13.77	15.23	8.58	8.94	9.68	10.03	11.49
	6H	12.88	13.17	13.99	14.27	15.74	9.12	9.40	10.22	10.51	11.98
	8H	13.08	13.34	14.20	14.43	15.95	9.30	9.56	10.42	10.66	12.17

END OF REPORT