

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: P902152

Luminaire Tested: DFN2DIP-4P2F0-030D020US830-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902152
REPORT IS A COMBINATION OF REPORTS P899014 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-030D020US830-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

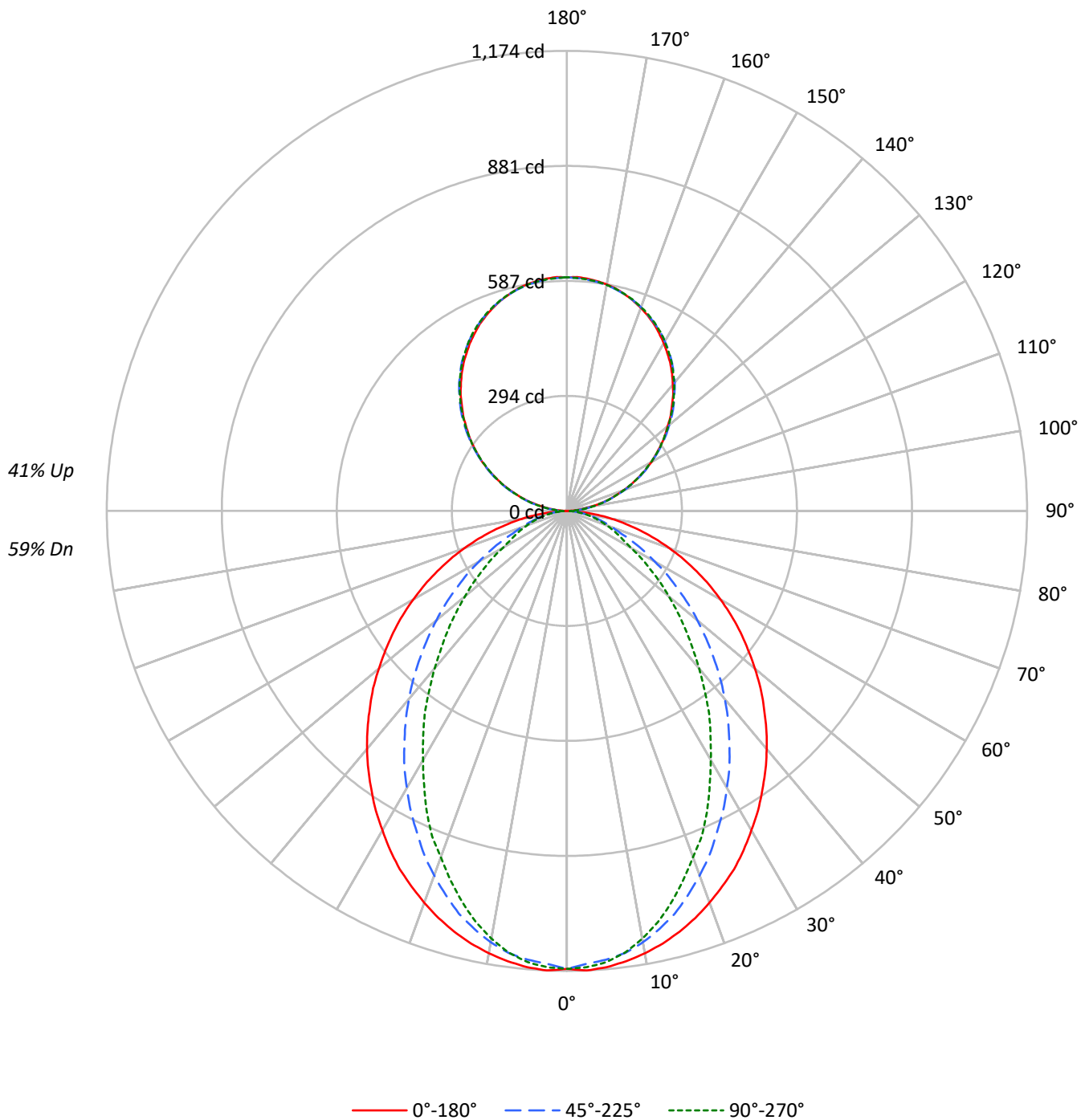
Lumens per Lamp: N/A
Luminaire Lumens: 4071.8 lumens
Efficiency: N/A
Efficacy: 94.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 43.3
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

TEST NUMBER: P902152

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902152

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US830-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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

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

TEST NUMBER: P902152

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US830-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.5	2.7
10°-20°	300.7	7.4
20°-30°	422.1	10.4
30°-40°	460.2	11.3
40°-50°	422.9	10.4
50°-60°	332.2	8.2
60°-70°	216.2	5.3
70°-80°	111.3	2.7
80°-90°	30.1	0.7
90°-100°	36.9	0.9
100°-110°	117.2	2.9
110°-120°	200.6	4.9
120°-130°	263.8	6.5
130°-140°	296.1	7.3
140°-150°	290.4	7.1
150°-160°	243.6	6.0
160°-170°	161.5	4.0
170°-180°	56.5	1.4
0°-30°	832.3	20.4
0°-40°	1292.5	31.7
0°-60°	2047.6	50.3
0°-90°	2405.2	59.1
90°-120°	354.7	8.7
90°-150°	1205.0	29.6
90°-180°	1667.0	40.9
0°-180°	4071.8	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	6	18	16	17	4
95°	26	31	32	32	31	29
105°	108	110	111	112	112	114
115°	201	204	203	203	201	199
125°	293	297	296	294	294	262
135°	379	384	385	385	383	293
145°	460	463	466	467	465	287
155°	526	527	529	531	530	242
165°	572	571	571	575	572	161
175°	595	594	593	596	593	57
180°	596	596	596	596	596	

TEST NUMBER: P902152

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US830-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°	0.6	6.5	17.6	16.5	17.1
92.5°	11.1	15.1	15.6	16.2	16.2
95°	26.2	31.3	32.1	32.1	31.3
97.5°	43.6	48.4	50.3	50.3	50.3
100°	63.8	68.0	69.4	69.4	68.8
102.5°	85.0	88.0	90.0	90.6	90.0
105°	108.2	109.6	110.7	111.6	111.6
107.5°	131.2	133.4	133.4	133.7	131.2
110°	153.5	156.4	156.4	156.4	155.0

TEST NUMBER: P902152

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US830-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	177.6	180.6	180.1	178.6	177.6
115°	201.3	204.2	203.3	202.7	201.3
117.5°	224.9	228.8	226.3	224.9	223.4
120°	248.5	252.5	248.5	248.5	246.9
122.5°	270.1	275.1	272.7	271.3	270.1
125°	292.8	297.3	295.9	294.3	293.7
127.5°	314.9	320.5	318.5	316.3	314.9
130°	335.5	342.0	341.1	340.1	338.1
132.5°	358.7	363.8	364.1	361.7	360.1
135°	378.7	384.3	385.3	384.8	383.3
137.5°	401.0	405.5	406.4	406.0	403.9
140°	420.6	425.1	427.6	427.6	425.7
142.5°	440.7	445.2	446.7	447.1	445.2
145°	459.8	463.4	466.3	466.7	464.8
147.5°	476.8	481.4	483.5	484.4	482.4
150°	494.5	497.5	499.5	501.1	499.5
152.5°	510.1	513.1	515.7	517.6	515.7
155°	525.8	527.2	528.8	531.3	529.7
157.5°	539.2	540.3	541.2	544.8	542.2
160°	551.3	552.3	552.9	555.9	553.7
162.5°	562.4	562.4	562.9	566.4	563.8
165°	571.9	571.4	571.4	575.0	572.5
167.5°	580.5	578.9	578.9	582.5	580.0
170°	587.0	585.6	585.0	588.6	585.6
172.5°	591.5	590.0	589.6	593.1	590.0
175°	595.1	593.7	592.6	596.2	593.1
177.5°	597.1	595.7	594.6	597.6	594.6
180°	596.2	596.2	596.2	596.2	596.2

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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	11.55	12.46	12.43	13.36	14.50	7.51	8.42	8.39	9.32	10.46
	3H	13.21	14.02	14.10	14.93	16.10	8.68	9.50	9.58	10.41	11.57
	4H	13.81	14.58	14.72	15.49	16.66	9.12	9.89	10.03	10.80	11.98
	6H	14.21	14.92	15.14	15.84	17.03	9.43	10.14	10.35	11.06	12.24
	8H	14.33	15.01	15.26	15.94	17.13	9.51	10.19	10.44	11.12	12.31
	12H	14.39	15.03	15.32	15.96	17.17	9.55	10.19	10.48	11.12	12.33
4H	2H	11.57	12.34	12.49	13.25	14.43	8.10	8.87	9.02	9.78	10.96
	3H	13.38	14.02	14.31	14.96	16.15	9.44	10.07	10.36	11.02	12.21
	4H	14.06	14.64	15.00	15.58	16.79	9.97	10.55	10.91	11.49	12.70
	6H	14.56	15.06	15.51	16.02	17.24	10.37	10.87	11.32	11.83	13.05
	8H	14.72	15.19	15.67	16.14	17.37	10.49	10.96	11.44	11.91	13.14
	12H	14.81	15.23	15.78	16.20	17.43	10.55	10.97	11.52	11.94	13.17
8H	4H	14.03	14.50	14.98	15.45	16.68	10.24	10.71	11.19	11.67	12.89
	6H	14.57	14.96	15.55	15.96	17.18	10.73	11.12	11.71	12.12	13.35
	8H	14.77	15.11	15.76	16.10	17.35	10.91	11.25	11.90	12.24	13.48
	12H	14.90	15.20	15.89	16.18	17.47	11.02	11.32	12.01	12.30	13.59
12H	4H	13.98	14.40	14.95	15.38	16.61	10.25	10.67	11.22	11.64	12.87
	6H	14.55	14.89	15.53	15.87	17.12	10.78	11.12	11.76	12.11	13.35
	8H	14.75	15.05	15.74	16.03	17.33	10.97	11.27	11.96	12.26	13.55

END OF REPORT