

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: P918563

Luminaire Tested: DFN2DIP-4P3F0-030D020US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918563
REPORT IS A COMBINATION OF REPORTS P900551 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D020US935-FLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

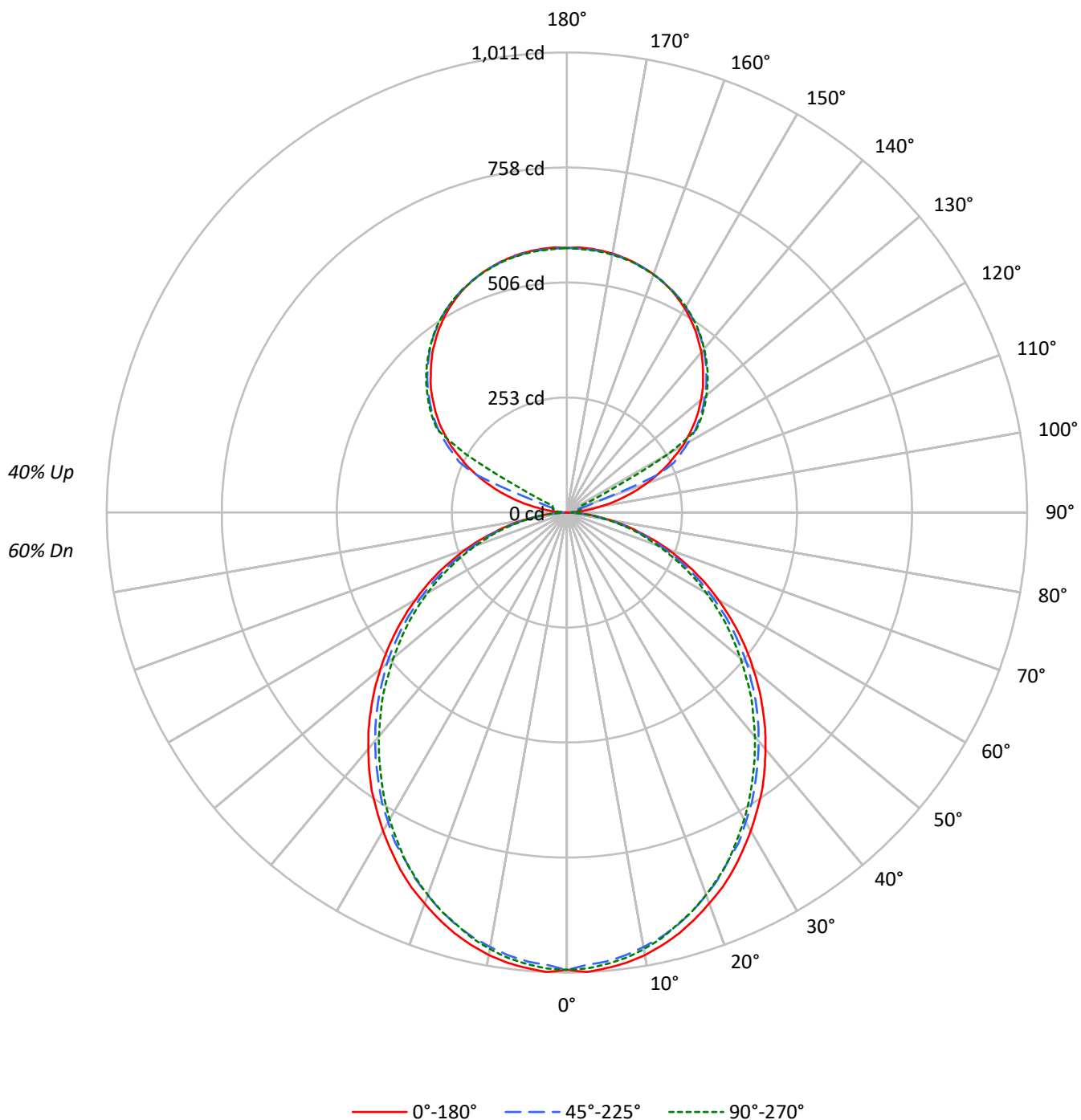
Lumens per Lamp: N/A
Luminaire Lumens: 4261.9 lumens
Efficiency: N/A
Efficacy: 103.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 41.3
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: P918563

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US935-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P918563

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US935-FLONL

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	102	102	102	102	89	89	89	77	77	77	65	65	65
1	100	96	92	88	93	90	86	83	78	75	73	67	66	64	58	56	55
2	91	84	77	72	85	78	73	68	68	64	61	59	56	53	51	49	47
3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	45	42	40
4	76	65	57	51	71	61	54	48	54	48	44	47	42	39	40	37	34
5	70	58	50	44	65	55	47	42	48	42	38	42	37	34	36	33	30
6	64	52	44	38	60	49	42	36	43	37	33	38	33	30	33	29	26
7	60	47	39	33	56	44	37	32	39	33	29	35	30	26	30	26	23
8	55	43	35	30	52	40	33	28	36	30	26	32	27	23	28	24	21
9	52	39	32	26	48	37	30	25	33	27	23	29	24	21	26	22	19
10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	24	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1145	1145	1145
5°	1146	1129	1137
10°	1136	1113	1121
15°	1119	1094	1096
20°	1096	1067	1071
25°	1073	1036	1043
30°	1044	1007	1006
35°	1016	973	968
40°	983	938	931
45°	949	904	893
50°	912	867	849
55°	874	825	809
60°	830	775	763
65°	782	724	709
70°	721	661	651
75°	637	585	596
80°	536	488	493
85°	377	323	322

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 949 cd/sqm

TEST NUMBER: P918563

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US935-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.6	2.2
10°-20°	266.2	6.2
20°-30°	391.1	9.2
30°-40°	454.3	10.7
40°-50°	453.7	10.6
50°-60°	395.6	9.3
60°-70°	292.5	6.9
70°-80°	165.5	3.9
80°-90°	44.7	1.0
90°-100°	19.2	0.4
100°-110°	71.4	1.7
110°-120°	189.5	4.4
120°-130°	314.2	7.4
130°-140°	333.8	7.8
140°-150°	310.2	7.3
150°-160°	249.4	5.9
160°-170°	160.7	3.8
170°-180°	55.3	1.3
0°-30°	751.9	17.6
0°-40°	1206.2	28.3
0°-60°	2055.6	48.2
0°-90°	2558.2	60.0
90°-120°	280.0	6.6
90°-150°	1238.3	29.1
90°-180°	1704.0	40.0
0°-180°	4261.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1005	1005	1005	1005	1005	
5°	1005	1001	991	998	996	95
15°	957	951	938	942	938	269
25°	866	858	842	844	842	398
35°	747	737	722	716	711	467
45°	608	601	587	576	572	469
55°	460	454	443	431	426	411
65°	310	304	295	286	281	307
75°	162	160	156	150	152	173
85°	40	39	38	35	34	44
90°	0	5	8	10	11	4
95°	27	13	16	18	18	32
105°	128	140	26	30	32	137
115°	242	249	260	65	34	238
125°	342	347	355	358	360	305
135°	423	430	434	438	437	327
145°	491	490	498	500	498	307
155°	540	537	542	544	541	249
165°	569	567	568	571	568	161
175°	582	580	580	583	579	55
180°	581	581	581	581	581	

TEST NUMBER: P918563

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1005.0	1005.0	1005.0	1005.0	1005.0
2.5°	1010.9	1006.1	995.4	1005.0	1003.2
5°	1005.0	1001.3	990.6	998.3	996.4
7.5°	998.3	992.6	981.9	989.7	987.7
10°	987.7	980.9	969.4	977.1	974.2
12.5°	973.2	967.4	955.9	960.6	958.7
15°	956.7	951.1	938.4	942.3	937.5
17.5°	936.4	930.7	918.1	922.9	918.1
20°	914.2	908.4	894.9	897.8	894.0
22.5°	892.1	883.4	870.7	870.7	868.7
25°	865.9	858.2	841.8	843.7	841.8
27.5°	836.9	830.1	817.6	814.8	809.9
30°	808.0	800.2	785.7	782.8	778.9
32.5°	777.1	771.3	755.8	749.9	746.1
35°	747.1	737.4	721.9	716.1	711.3
37.5°	713.3	704.6	689.1	682.3	677.4
40°	678.5	670.7	655.2	646.6	642.7
42.5°	644.6	636.9	621.5	611.7	606.0
45°	608.0	601.1	586.6	576.0	572.1
47.5°	572.1	565.4	549.9	539.2	533.5
50°	534.4	529.6	516.1	502.6	497.7
52.5°	497.7	490.9	478.5	467.8	461.0
55°	460.1	454.3	442.6	431.1	426.3
57.5°	422.3	417.5	404.9	393.3	389.4
60°	384.6	380.8	367.3	356.6	353.8
62.5°	347.9	341.1	331.5	321.8	318.0
65°	310.3	304.4	294.8	286.1	281.3
67.5°	271.6	266.7	258.0	251.3	247.5
70°	235.8	232.0	223.3	216.5	212.7
72.5°	199.1	195.2	190.4	183.7	180.8
75°	162.3	160.5	155.6	149.8	151.8
77.5°	129.5	125.6	123.6	120.8	118.0
80°	96.7	95.7	93.7	90.8	88.9
82.5°	65.7	65.7	64.8	60.9	60.9
85°	39.6	38.7	37.7	34.8	33.8
87.5°	17.4	15.5	13.5	10.7	9.6
90°	0.4	5.1	8.4	10.5	11.4
92.5°	10.5	8.9	10.1	10.9	11.4
95°	27.3	13.4	16.4	18.5	18.1
97.5°	49.2	14.7	21.4	22.7	23.2
100°	74.5	16.8	23.9	27.3	28.2
102.5°	102.2	101.3	24.8	29.4	30.7
105°	127.9	140.4	25.7	30.2	31.9
107.5°	157.7	168.2	26.5	31.1	32.8
110°	186.3	195.1	73.6	31.6	33.2



TEST NUMBER: P918563

CATALOG NUMBER: DFN2DIP-4P3F0-030D020US935-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	213.2	220.8	213.6	32.4	33.7
115°	241.8	248.9	259.5	64.7	34.5
117.5°	266.6	275.0	282.1	222.1	111.8
120°	294.4	300.7	308.2	313.3	256.5
122.5°	317.9	324.6	333.0	335.5	336.0
125°	341.9	347.3	355.3	358.3	359.6
127.5°	363.8	369.6	376.0	380.1	380.6
130°	384.3	391.1	395.7	400.4	399.9
132.5°	405.4	410.9	415.4	419.2	418.9
135°	423.1	429.8	433.5	437.8	437.0
137.5°	441.5	446.6	450.8	455.0	453.7
140°	459.6	463.0	467.6	471.4	469.3
142.5°	474.8	477.8	483.2	486.5	484.4
145°	490.8	490.3	497.5	500.4	498.3
147.5°	504.6	503.3	510.5	512.6	510.9
150°	518.1	515.1	521.9	524.3	522.3
152.5°	529.4	526.1	532.4	534.9	531.9
155°	540.4	536.6	541.7	544.2	540.8
157.5°	549.2	545.9	549.7	552.6	549.2
160°	556.8	554.2	556.8	559.3	556.4
162.5°	563.4	560.9	563.1	566.0	562.2
165°	569.4	566.9	568.1	571.1	568.1
167.5°	574.0	571.4	572.7	575.7	571.9
170°	577.8	575.2	576.1	579.0	575.2
172.5°	580.3	577.8	578.7	581.6	577.8
175°	582.4	579.5	580.3	583.2	579.0
177.5°	583.2	580.3	580.7	583.7	579.9
180°	581.2	581.2	581.2	581.2	581.2

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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	8.59	9.55	9.45	10.43	11.55	8.14	9.10	9.01	9.99	11.11
	3H	10.25	11.11	11.13	12.01	13.15	9.76	10.62	10.64	11.52	12.66
	4H	10.84	11.65	11.73	12.56	13.71	10.35	11.16	11.24	12.06	13.22
	6H	11.24	11.99	12.15	12.90	14.07	10.74	11.49	11.65	12.40	13.57
	8H	11.35	12.06	12.26	12.99	14.16	10.85	11.56	11.76	12.49	13.66
	12H	11.40	12.08	12.32	13.00	14.19	10.89	11.57	11.81	12.49	13.68
4H	2H	9.06	9.87	9.95	10.77	11.93	8.70	9.51	9.60	10.42	11.57
	3H	10.93	11.60	11.84	12.54	13.71	10.52	11.20	11.43	12.13	13.30
	4H	11.64	12.26	12.56	13.19	14.39	11.22	11.84	12.14	12.77	13.96
	6H	12.16	12.69	13.09	13.65	14.84	11.72	12.26	12.66	13.21	14.41
	8H	12.31	12.81	13.24	13.75	14.97	11.87	12.37	12.81	13.32	14.53
	12H	12.38	12.83	13.34	13.80	15.02	11.93	12.38	12.89	13.35	14.57
8H	4H	11.84	12.34	12.78	13.29	14.50	11.46	11.96	12.40	12.91	14.12
	6H	12.47	12.88	13.43	13.87	15.08	12.09	12.50	13.05	13.49	14.70
	8H	12.69	13.05	13.66	14.03	15.26	12.30	12.66	13.27	13.64	14.87
	12H	12.82	13.14	13.80	14.12	15.39	12.41	12.73	13.39	13.70	14.98
12H	4H	11.83	12.28	12.79	13.25	14.46	11.46	11.91	12.42	12.88	14.09
	6H	12.50	12.87	13.47	13.84	15.07	12.13	12.49	13.10	13.47	14.70
	8H	12.74	13.06	13.72	14.04	15.31	12.36	12.68	13.34	13.66	14.93

END OF REPORT