

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: P918522

Luminaire Tested: DFN2DIP-4P2F0-030D030US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918522
REPORT IS A COMBINATION OF REPORTS P899019 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-030D030US935-FLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

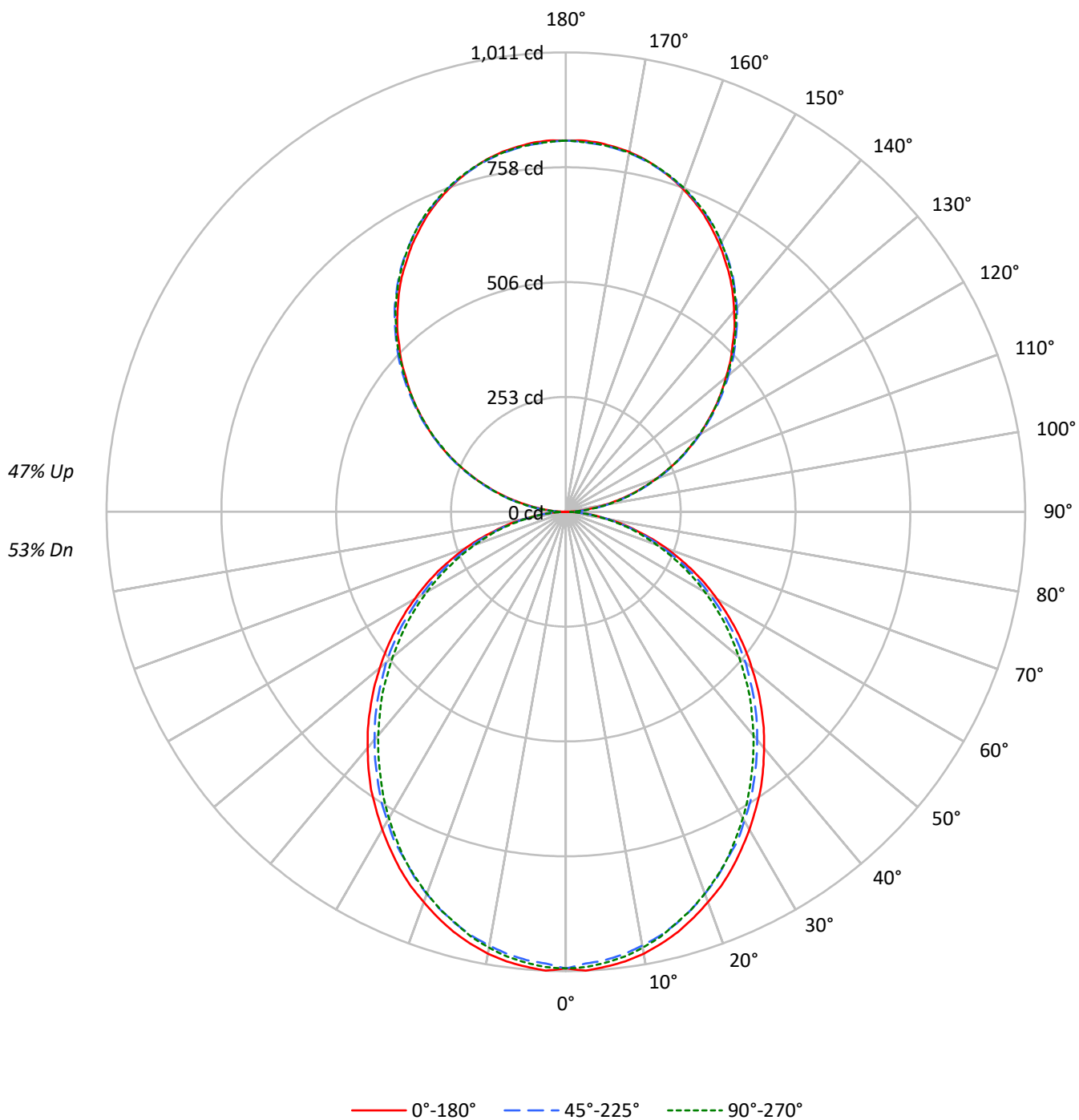
Lumens per Lamp: N/A
Luminaire Lumens: 4843.1 lumens
Efficiency: N/A
Efficacy: 95.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 51
Input Voltage (V): 120
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: P918522

CATALOG NUMBER: DFN2DIP-4P2F0-030D030US935-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P918522

CATALOG NUMBER: DFN2DIP-4P2F0-030D030US935-FLLFLL

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
RCR																	
0	108	108	108	108	100	100	100	100	85	85	85		71	71	71		59
1	98	94	90	87	91	87	84	81	74	72	70		63	61	59		52
2	90	82	76	71	83	76	71	66	65	61	58		55	52	50		46
3	82	72	65	59	75	67	61	55	58	53	49		49	45	42		41
4	75	64	56	50	69	60	52	47	51	46	41		43	39	36		36
5	69	57	49	43	63	53	46	40	46	40	36		39	35	31		33
6	63	51	43	37	58	48	40	35	41	36	31		35	31	27		30
7	59	46	38	33	54	43	36	31	37	32	28		32	28	24		27
8	54	42	34	29	50	39	32	27	34	29	24		29	25	22		25
9	51	38	31	26	47	36	29	24	31	26	22		27	23	19		23
10	47	35	28	23	44	33	26	22	29	23	20		25	21	18		21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2517	2517	2517
5°	2516	2475	2494
10°	2490	2436	2456
15°	2448	2389	2399
20°	2394	2327	2341
25°	2340	2254	2275
30°	2273	2186	2191
35°	2209	2106	2103
40°	2132	2026	2019
45°	2054	1945	1933
50°	1969	1859	1833
55°	1879	1761	1741
60°	1778	1645	1635
65°	1666	1524	1510
70°	1524	1377	1375
75°	1331	1200	1245
80°	1095	974	1007
85°	733	609	626

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2054 cd/sqm

TEST NUMBER: P918522

CATALOG NUMBER: DFN2DIP-4P2F0-030D030US935-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.6	2.0
10°-20°	266.2	5.5
20°-30°	391.1	8.1
30°-40°	454.3	9.4
40°-50°	453.7	9.4
50°-60°	395.6	8.2
60°-70°	292.5	6.0
70°-80°	165.5	3.4
80°-90°	46.0	0.9
90°-100°	50.6	1.0
100°-110°	160.6	3.3
110°-120°	274.9	5.7
120°-130°	361.5	7.5
130°-140°	405.7	8.4
140°-150°	397.9	8.2
150°-160°	333.8	6.9
160°-170°	221.3	4.6
170°-180°	77.4	1.6
0°-30°	751.9	15.5
0°-40°	1206.2	24.9
0°-60°	2055.6	42.4
0°-90°	2559.5	52.8
90°-120°	486.0	10.0
90°-150°	1651.1	34.1
90°-180°	2284.0	47.2
0°-180°	4843.1	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°	1	9	24	23	23	5
95°	36	43	44	44	43	40
105°	148	150	152	153	153	156
115°	276	280	278	278	276	273
125°	401	407	405	403	402	358
135°	519	526	528	527	525	401
145°	630	635	639	640	637	394
155°	720	722	724	728	726	332
165°	784	783	783	788	784	221
175°	816	814	812	817	813	77
180°	817	817	817	817	817	

TEST NUMBER: P918522

CATALOG NUMBER: DFN2DIP-4P2F0-030D030US935-FLLFLL

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°	0.8	8.9	24.1	22.6	23.4
92.5°	15.2	20.7	21.4	22.1	22.1
95°	36.0	42.9	44.1	44.1	42.9
97.5°	59.8	66.2	69.0	69.0	69.0
100°	87.4	93.1	95.1	95.1	94.4
102.5°	116.5	120.7	123.4	124.2	123.4
105°	148.3	150.2	151.7	152.9	152.9
107.5°	179.8	182.7	182.7	183.2	179.8
110°	210.3	214.3	214.3	214.3	212.3

TEST NUMBER: P918522

CATALOG NUMBER: DFN2DIP-4P2F0-030D030US935-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	243.3	247.5	246.8	244.8	243.3
115°	275.9	279.7	278.5	277.8	275.9
117.5°	308.1	313.5	310.0	308.1	306.1
120°	340.6	346.0	340.6	340.6	338.4
122.5°	370.1	377.0	373.6	371.6	370.1
125°	401.2	407.3	405.4	403.1	402.4
127.5°	431.4	439.1	436.4	433.4	431.4
130°	459.8	468.6	467.4	466.0	463.2
132.5°	491.5	498.4	498.9	495.5	493.5
135°	518.9	526.5	528.0	527.3	525.3
137.5°	549.4	555.6	556.8	556.4	553.4
140°	576.3	582.5	585.9	585.9	583.2
142.5°	603.9	610.0	612.0	612.8	610.0
145°	630.0	634.9	638.9	639.5	636.9
147.5°	653.4	659.5	662.5	663.7	661.0
150°	677.5	681.7	684.4	686.6	684.4
152.5°	699.0	703.1	706.5	709.3	706.5
155°	720.4	722.3	724.5	728.0	725.8
157.5°	738.8	740.3	741.6	746.5	743.0
160°	755.4	756.8	757.6	761.7	758.8
162.5°	770.6	770.6	771.4	776.0	772.6
165°	783.7	782.9	782.9	787.8	784.4
167.5°	795.5	793.2	793.2	798.1	794.7
170°	804.3	802.4	801.7	806.6	802.4
172.5°	810.5	808.6	807.8	812.7	808.6
175°	815.5	813.5	812.0	816.9	812.7
177.5°	818.1	816.1	814.7	818.9	814.7
180°	816.9	816.9	816.9	816.9	816.9

TEST NUMBER: P918522

CATALOG NUMBER: DFN2DIP-4P2F0-030D030US935-FLLFLL

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	10.60	11.49	11.53	12.44	13.67	10.16	11.04	11.09	11.99	13.22
	3H	12.24	13.04	13.19	14.00	15.25	11.75	12.55	12.70	13.51	14.76
	4H	12.82	13.57	13.77	14.53	15.79	12.32	13.08	13.28	14.04	15.30
	6H	13.20	13.89	14.17	14.86	16.14	12.70	13.39	13.67	14.36	15.64
	8H	13.30	13.96	14.27	14.94	16.22	12.80	13.46	13.77	14.44	15.71
	12H	13.34	13.97	14.32	14.95	16.24	12.83	13.46	13.81	14.44	15.74
4H	2H	11.05	11.81	12.02	12.77	14.03	10.70	11.45	11.66	12.42	13.68
	3H	12.90	13.52	13.87	14.52	15.79	12.49	13.12	13.46	14.11	15.39
	4H	13.59	14.17	14.58	15.15	16.45	13.17	13.74	14.15	14.73	16.03
	6H	14.09	14.58	15.08	15.59	16.89	13.66	14.15	14.65	15.16	16.46
	8H	14.23	14.69	15.22	15.69	17.01	13.79	14.25	14.79	15.26	16.57
	12H	14.29	14.71	15.31	15.73	17.05	13.84	14.26	14.86	15.28	16.60
8H	4H	13.78	14.24	14.77	15.24	16.56	13.40	13.86	14.40	14.87	16.18
	6H	14.38	14.77	15.40	15.81	17.12	14.00	14.38	15.02	15.43	16.74
	8H	14.59	14.93	15.62	15.96	17.29	14.19	14.53	15.22	15.56	16.89
	12H	14.71	15.00	15.74	16.03	17.40	14.30	14.59	15.33	15.62	16.99
12H	4H	13.76	14.18	14.78	15.20	16.52	13.39	13.81	14.41	14.83	16.15
	6H	14.41	14.75	15.44	15.78	17.11	14.03	14.37	15.06	15.40	16.73
	8H	14.63	14.93	15.67	15.96	17.33	14.25	14.55	15.28	15.57	16.95

END OF REPORT