

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: P921969

Luminaire Tested: DFN2DIP-PN2F0-030D030US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921969
REPORT IS A COMBINATION OF REPORTS P900993 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-030D030US940-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

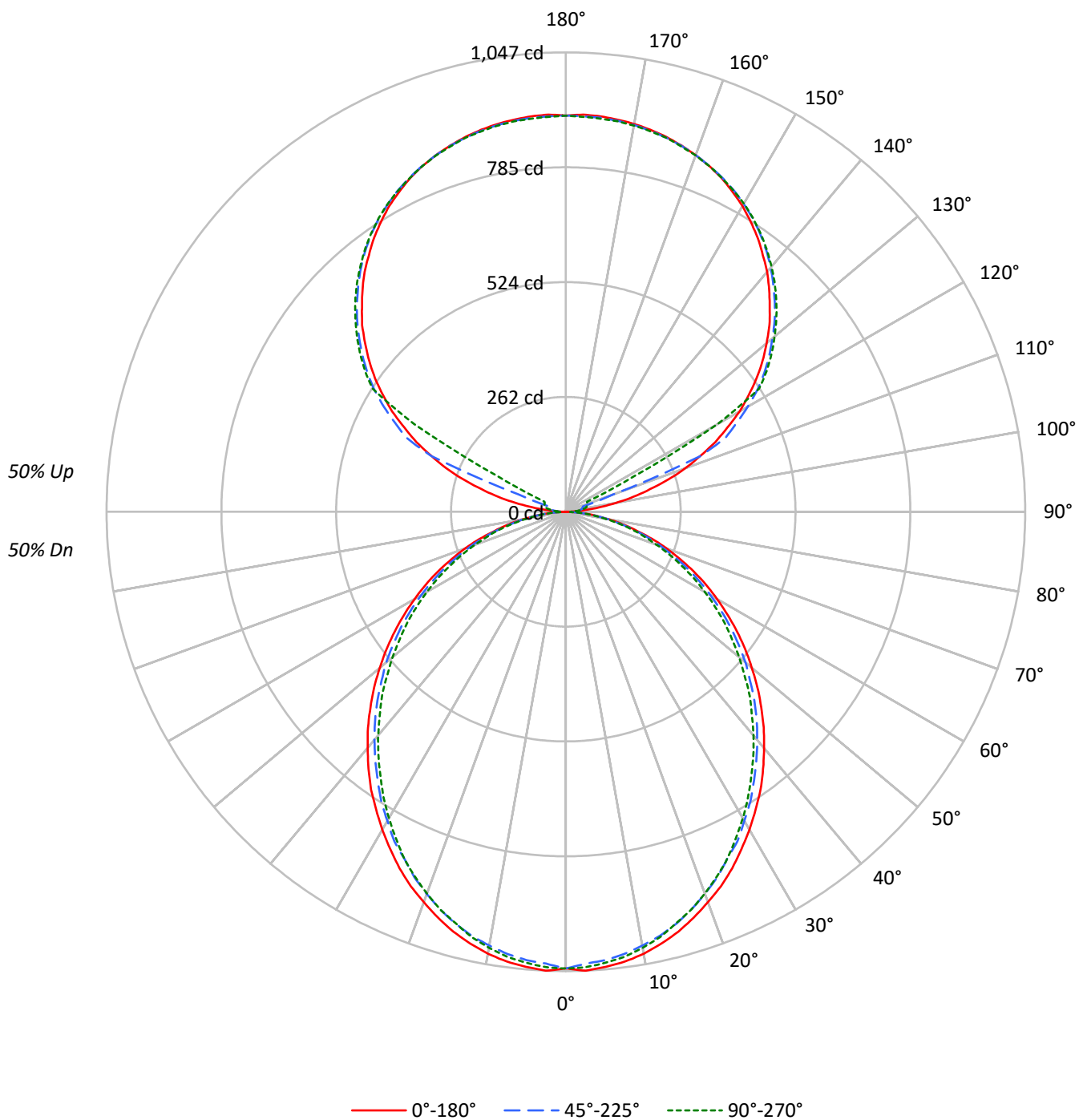
Lumens per Lamp: N/A
Luminaire Lumens: 5296.8 lumens
Efficiency: N/A
Efficacy: 113.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 46.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P921969

CATALOG NUMBER: DFN2DIP-PN2F0-030D030US940-FLLONL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-PN2F0-030D030US940-FLLONL

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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	93	90	86	90	86	83	80	73	71	68	61	59	58	50	48	47
2	89	82	75	70	82	76	70	66	64	60	57	53	51	48	44	42	40
3	81	72	64	59	75	66	60	55	56	52	48	47	44	41	39	36	34
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	29
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	31	28	26
6	63	51	43	37	58	47	40	35	40	35	31	34	30	27	28	25	23
7	58	46	38	32	53	43	36	30	37	31	27	31	27	23	26	23	20
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	24	20	18
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	19	16
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2254	2254	2254
5°	2254	2218	2235
10°	2233	2184	2201
15°	2196	2143	2151
20°	2148	2088	2099
25°	2100	2024	2040
30°	2041	1963	1965
35°	1985	1893	1887
40°	1916	1822	1812
45°	1848	1750	1735
50°	1773	1674	1647
55°	1693	1587	1564
60°	1604	1485	1470
65°	1506	1377	1359
70°	1380	1247	1239
75°	1209	1090	1123
80°	1000	890	911
85°	679	563	570

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1848 cd/sqm

TEST NUMBER: P921969

CATALOG NUMBER: DFN2DIP-PN2F0-030D030US940-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	98.0	1.8
10°-20°	275.6	5.2
20°-30°	405.1	7.6
30°-40°	470.5	8.9
40°-50°	469.9	8.9
50°-60°	409.8	7.7
60°-70°	302.9	5.7
70°-80°	171.4	3.2
80°-90°	46.8	0.9
90°-100°	29.8	0.6
100°-110°	111.0	2.1
110°-120°	294.3	5.6
120°-130°	488.2	9.2
130°-140°	518.5	9.8
140°-150°	481.9	9.1
150°-160°	387.5	7.3
160°-170°	249.7	4.7
170°-180°	85.9	1.6
0°-30°	778.7	14.7
0°-40°	1249.2	23.6
0°-60°	2128.9	40.2
0°-90°	2650.0	50.0
90°-120°	435.1	8.2
90°-150°	1923.7	36.3
90°-180°	2647.0	50.0
0°-180°	5296.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1041	1041	1041	1041	1041	
5°	1041	1037	1026	1034	1032	99
15°	991	985	972	976	971	279
25°	897	889	872	874	872	413
35°	774	764	748	742	737	483
45°	630	623	608	597	592	486
55°	476	470	458	446	442	426
65°	321	315	305	296	291	318
75°	168	166	161	155	157	179
85°	41	40	39	36	35	46
90°	1	8	13	16	18	5
95°	42	21	25	29	28	50
105°	199	218	40	47	50	212
115°	376	387	403	101	54	370
125°	531	540	552	557	559	474
135°	657	668	674	680	679	508
145°	762	762	773	777	774	477
155°	840	834	841	845	840	387
165°	884	881	883	887	883	250
175°	905	900	902	906	900	86
180°	903	903	903	903	903	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1040.9	1040.9	1040.9	1040.9	1040.9
2.5°	1047.0	1042.0	1030.9	1040.9	1039.0
5°	1040.9	1037.0	1025.9	1033.9	1032.0
7.5°	1033.9	1028.0	1016.9	1025.0	1023.0
10°	1023.0	1015.9	1004.0	1011.9	1009.0
12.5°	1007.9	1001.9	990.0	994.9	992.9
15°	990.9	985.0	971.9	975.9	970.9
17.5°	969.8	963.9	950.8	955.8	950.8
20°	946.8	940.8	926.8	929.8	925.9
22.5°	923.9	914.9	901.8	901.8	899.7
25°	896.8	888.9	871.8	873.8	871.8
27.5°	866.7	859.7	846.8	843.8	838.8
30°	836.8	828.8	813.8	810.7	806.7
32.5°	804.8	798.8	782.7	776.7	772.7
35°	773.7	763.7	747.7	741.6	736.6
37.5°	738.7	729.7	713.6	706.6	701.6
40°	702.7	694.6	678.6	669.7	665.7
42.5°	667.6	659.6	643.6	633.6	627.6
45°	629.6	622.6	607.5	596.6	592.5
47.5°	592.5	585.6	569.5	558.5	552.5
50°	553.5	548.5	534.5	520.5	515.5
52.5°	515.5	508.5	495.5	484.5	477.4
55°	476.5	470.5	458.4	446.5	441.5
57.5°	437.4	432.4	419.4	407.3	403.3
60°	398.3	394.4	380.4	369.3	366.4
62.5°	360.3	353.3	343.3	333.3	329.3
65°	321.4	315.3	305.3	296.3	291.3
67.5°	281.3	276.3	267.2	260.3	256.3
70°	244.2	240.2	231.2	224.2	220.3
72.5°	206.3	202.2	197.2	190.2	187.3
75°	168.1	166.2	161.1	155.2	157.2
77.5°	134.1	130.1	128.0	125.1	122.2
80°	100.1	99.1	97.0	94.1	92.1
82.5°	68.0	68.0	67.1	63.0	63.0
85°	41.0	40.0	39.1	36.0	35.0
87.5°	18.0	16.1	14.0	11.1	10.0
90°	0.6	7.8	13.0	16.4	17.6
92.5°	16.4	13.7	15.7	17.0	17.6
95°	42.4	20.9	25.4	28.8	28.1
97.5°	76.4	22.9	33.3	35.3	35.9
100°	115.7	26.1	37.3	42.4	43.8
102.5°	158.7	157.5	38.5	45.7	47.7
105°	198.6	218.2	39.9	47.0	49.7
107.5°	245.0	261.3	41.2	48.3	51.0
110°	289.4	303.1	114.3	49.0	51.6



TEST NUMBER: P921969

CATALOG NUMBER: DFN2DIP-PN2F0-030D030US940-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	331.3	343.0	331.9	50.3	52.3
115°	375.6	386.7	403.1	100.6	53.6
117.5°	414.2	427.2	438.4	344.9	173.8
120°	457.3	467.1	478.8	486.7	398.5
122.5°	493.8	504.4	517.5	521.3	522.0
125°	531.1	539.6	552.1	556.6	558.6
127.5°	565.1	574.2	584.1	590.6	591.2
130°	597.1	607.6	614.7	621.9	621.3
132.5°	629.7	638.3	645.4	651.3	650.7
135°	657.2	667.7	673.5	680.1	678.8
137.5°	685.9	693.8	700.3	706.9	704.9
140°	714.0	719.3	726.4	732.3	729.1
142.5°	737.6	742.2	750.6	755.8	752.6
145°	762.4	761.7	772.8	777.4	774.1
147.5°	783.9	781.9	793.1	796.3	793.7
150°	804.9	800.3	810.7	814.6	811.4
152.5°	822.4	817.3	827.1	831.0	826.4
155°	839.5	833.7	841.4	845.3	840.2
157.5°	853.2	848.0	853.9	858.4	853.2
160°	865.0	861.0	865.0	868.9	864.2
162.5°	875.4	871.5	874.8	879.3	873.4
165°	884.5	880.7	882.6	887.2	882.6
167.5°	891.7	887.8	889.7	894.4	888.5
170°	897.6	893.7	895.0	899.6	893.7
172.5°	901.5	897.6	898.9	903.5	897.6
175°	904.7	900.2	901.5	906.1	899.6
177.5°	906.1	901.5	902.2	906.8	900.9
180°	902.9	902.9	902.9	902.9	902.9

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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	9.98	10.84	10.94	11.82	13.09	9.54	10.41	10.50	11.38	12.65
	3H	11.62	12.40	12.59	13.38	14.67	11.14	11.92	12.11	12.90	14.19
	4H	12.20	12.93	13.18	13.91	15.22	11.71	12.45	12.70	13.43	14.73
	6H	12.58	13.25	13.57	14.25	15.56	12.10	12.77	13.09	13.76	15.07
	8H	12.68	13.32	13.68	14.33	15.64	12.19	12.83	13.19	13.84	15.15
	12H	12.72	13.33	13.72	14.33	15.67	12.23	12.84	13.23	13.84	15.17
4H	2H	10.43	11.17	11.42	12.15	13.45	10.08	10.81	11.07	11.80	13.10
	3H	12.28	12.89	13.27	13.90	15.22	11.88	12.49	12.87	13.50	14.82
	4H	12.97	13.53	13.98	14.54	15.88	12.56	13.12	13.57	14.13	15.47
	6H	13.47	13.95	14.49	14.98	16.32	13.05	13.53	14.07	14.56	15.90
	8H	13.61	14.06	14.63	15.08	16.43	13.19	13.64	14.20	14.66	16.01
	12H	13.67	14.08	14.71	15.12	16.47	13.24	13.65	14.28	14.68	16.04
8H	4H	13.16	13.61	14.18	14.63	15.98	12.79	13.24	13.81	14.26	15.62
	6H	13.77	14.14	14.81	15.20	16.55	13.39	13.77	14.44	14.83	16.18
	8H	13.97	14.30	15.02	15.35	16.72	13.59	13.92	14.64	14.97	16.34
	12H	14.09	14.38	15.14	15.42	16.83	13.70	13.98	14.75	15.03	16.44
12H	4H	13.14	13.55	14.18	14.59	15.94	12.78	13.19	13.82	14.23	15.58
	6H	13.79	14.12	14.84	15.17	16.54	13.43	13.76	14.48	14.81	16.18
	8H	14.02	14.31	15.07	15.35	16.76	13.65	13.94	14.70	14.98	16.39