

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: P921989

Luminaire Tested: DFN2DIP-PN2F0-040D030US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921989
REPORT IS A COMBINATION OF REPORTS P900995 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-040D030US940-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

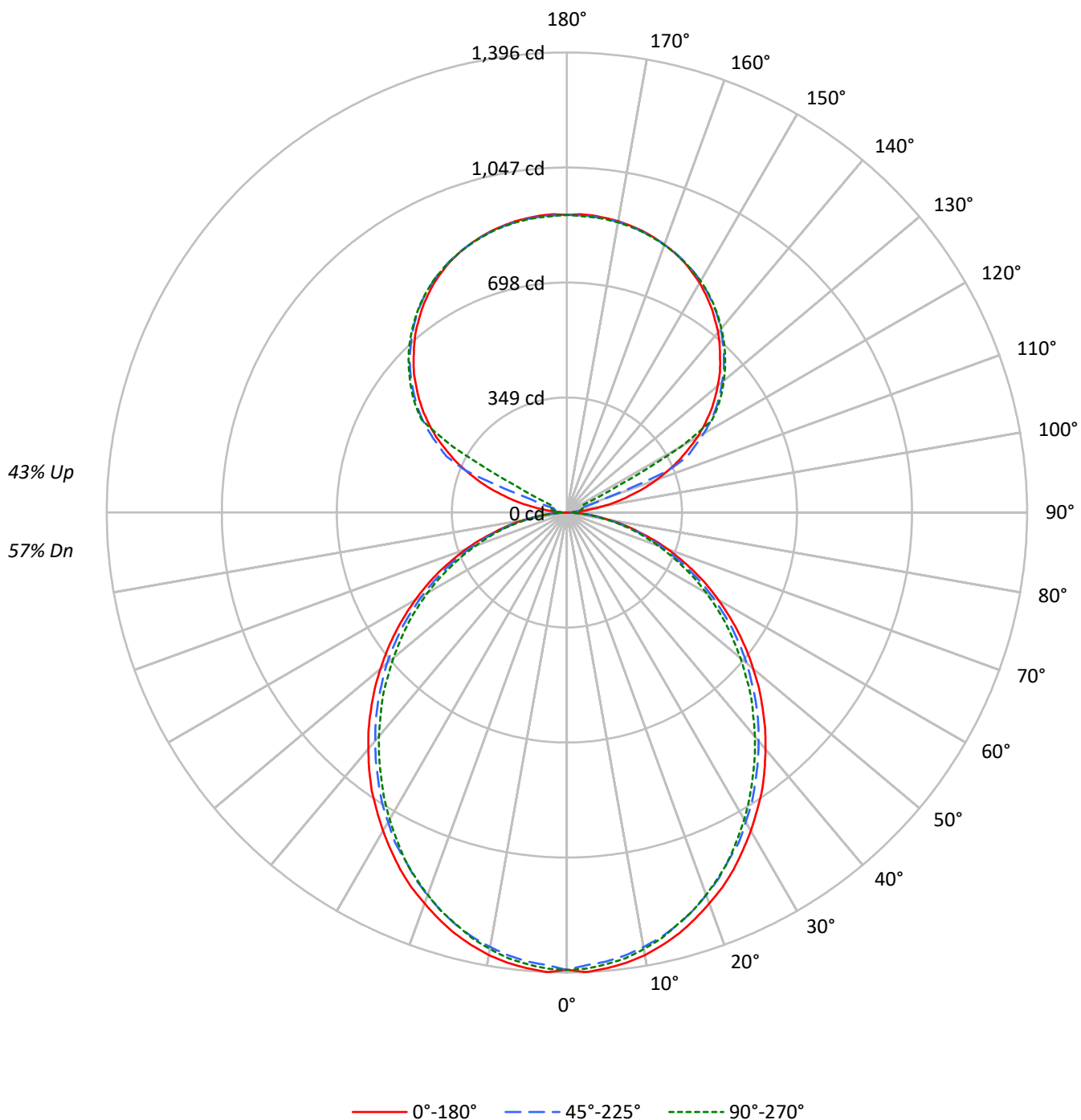
Lumens per Lamp: N/A
Luminaire Lumens: 6179.6 lumens
Efficiency: N/A
Efficacy: 106.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 58.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P921989

CATALOG NUMBER: DFN2DIP-PN2F0-040D030US940-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P921989

CATALOG NUMBER: DFN2DIP-PN2F0-040D030US940-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	109	109	109	109		101	101	101	101		87	87	87		74	74	74		63	63	63
1	99	95	91	88		92	89	85	82		77	74	72		66	64	62		55	54	53
2	91	83	77	72		84	77	72	67		67	63	59		58	55	52		49	47	45
3	83	73	66	60		77	68	62	56		59	54	50		51	47	44		43	40	38
4	76	65	57	50		70	61	53	48		53	47	43		45	41	38		39	35	33
5	69	58	49	43		64	54	47	41		47	41	37		41	36	33		35	31	29
6	64	52	44	38		59	49	41	36		43	37	32		37	32	29		32	28	25
7	59	47	39	33		55	44	37	31		39	33	28		34	29	25		29	25	22
8	55	43	35	29		51	40	33	28		35	29	25		31	26	23		27	23	20
9	51	39	31	26		48	37	30	25		32	27	23		28	24	20		25	21	18
10	48	36	28	24		45	34	27	22		30	24	20		26	22	18		23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3006	3006	3006
5°	3006	2958	2980
10°	2977	2911	2935
15°	2928	2857	2868
20°	2864	2784	2799
25°	2800	2698	2720
30°	2722	2618	2621
35°	2647	2524	2516
40°	2555	2429	2416
45°	2464	2333	2314
50°	2363	2233	2195
55°	2258	2117	2086
60°	2139	1979	1960
65°	2008	1836	1812
70°	1841	1662	1651
75°	1613	1453	1497
80°	1334	1187	1215
85°	906	750	761

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2464 cd/sqm

TEST NUMBER: P921989

CATALOG NUMBER: DFN2DIP-PN2F0-040D030US940-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.6	2.1
10°-20°	367.5	5.9
20°-30°	540.1	8.7
30°-40°	627.3	10.2
40°-50°	626.6	10.1
50°-60°	546.3	8.8
60°-70°	403.9	6.5
70°-80°	228.5	3.7
80°-90°	61.9	1.0
90°-100°	29.8	0.5
100°-110°	111.0	1.8
110°-120°	294.3	4.8
120°-130°	488.2	7.9
130°-140°	518.5	8.4
140°-150°	481.9	7.8
150°-160°	387.5	6.3
160°-170°	249.7	4.0
170°-180°	85.9	1.4
0°-30°	1038.3	16.8
0°-40°	1665.6	27.0
0°-60°	2838.5	45.9
0°-90°	3532.8	57.2
90°-120°	435.1	7.0
90°-150°	1923.7	31.1
90°-180°	2647.0	42.8
0°-180°	6179.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1388	1388	1388	1388	1388	
5°	1388	1383	1368	1378	1376	132
15°	1321	1313	1296	1301	1295	372
25°	1196	1185	1162	1165	1162	550
35°	1032	1018	997	989	982	644
45°	840	830	810	796	790	648
55°	635	627	611	595	589	568
65°	428	420	407	395	388	424
75°	224	222	215	207	210	239
85°	55	53	52	48	47	61
90°	1	8	13	16	18	6
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	

TEST NUMBER: P921989

CATALOG NUMBER: DFN2DIP-PN2F0-040D030US940-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1387.9	1387.9	1387.9	1387.9	1387.9
2.5°	1396.0	1389.3	1374.6	1387.9	1385.4
5°	1387.9	1382.6	1367.9	1378.5	1376.0
7.5°	1378.5	1370.6	1355.8	1366.6	1364.0
10°	1364.0	1354.6	1338.6	1349.2	1345.2
12.5°	1343.8	1335.9	1319.9	1326.6	1323.8
15°	1321.2	1313.2	1295.8	1301.2	1294.6
17.5°	1293.2	1285.2	1267.8	1274.4	1267.8
20°	1262.4	1254.5	1235.8	1239.7	1234.6
22.5°	1231.8	1219.8	1202.4	1202.4	1199.7
25°	1195.7	1185.1	1162.4	1165.0	1162.4
27.5°	1155.7	1146.3	1129.1	1125.1	1118.5
30°	1115.7	1105.0	1085.0	1081.0	1075.7
32.5°	1073.0	1065.1	1043.7	1035.6	1030.2
35°	1031.6	1018.3	996.9	988.9	982.2
37.5°	984.9	972.9	951.5	942.2	935.5
40°	936.9	926.1	904.7	892.9	887.5
42.5°	890.2	879.4	858.2	844.7	836.8
45°	839.5	830.2	810.0	795.5	790.1
47.5°	790.1	780.7	759.4	744.7	736.7
50°	738.0	731.3	712.7	693.9	687.2
52.5°	687.2	678.0	660.7	646.0	636.6
55°	635.3	627.2	611.3	595.2	588.6
57.5°	583.2	576.6	559.1	543.1	537.8
60°	531.1	525.8	507.2	492.5	488.5
62.5°	480.5	471.1	457.8	444.4	439.1
65°	428.5	420.4	407.1	395.0	388.4
67.5°	375.1	368.3	356.4	347.1	341.7
70°	325.7	320.3	308.3	298.9	293.6
72.5°	275.0	269.6	263.0	253.6	249.6
75°	224.2	221.6	214.8	206.9	209.6
77.5°	178.8	173.4	170.8	166.7	162.8
80°	133.5	132.1	129.4	125.5	122.8
82.5°	90.8	90.8	89.5	84.1	84.1
85°	54.7	53.4	52.1	48.0	46.7
87.5°	24.1	21.4	18.7	14.7	13.3
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: P921989

CATALOG NUMBER: DFN2DIP-PN2F0-040D030US940-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	11.62	12.55	12.51	13.46	14.62	11.18	12.11	12.07	13.02	14.19
	3H	13.26	14.10	14.17	15.02	16.21	12.78	13.62	13.69	14.54	15.73
	4H	13.84	14.63	14.76	15.56	16.76	13.36	14.15	14.28	15.07	16.27
	6H	14.23	14.95	15.16	15.89	17.10	13.74	14.47	14.67	15.40	16.61
	8H	14.33	15.02	15.26	15.97	17.18	13.84	14.53	14.78	15.48	16.69
	12H	14.37	15.03	15.31	15.97	17.21	13.88	14.53	14.82	15.48	16.72
4H	2H	12.08	12.86	13.00	13.79	14.99	11.73	12.51	12.65	13.44	14.64
	3H	13.92	14.58	14.86	15.54	16.76	13.52	14.18	14.46	15.14	16.36
	4H	14.63	15.23	15.57	16.18	17.42	14.21	14.81	15.16	15.77	17.00
	6H	15.12	15.64	16.08	16.62	17.86	14.70	15.22	15.66	16.20	17.44
	8H	15.27	15.75	16.23	16.72	17.97	14.84	15.33	15.80	16.30	17.55
	12H	15.33	15.77	16.31	16.76	18.02	14.90	15.34	15.88	16.32	17.58
8H	4H	14.82	15.30	15.78	16.27	17.52	14.45	14.93	15.41	15.90	17.16
	6H	15.43	15.83	16.41	16.84	18.09	15.05	15.45	16.04	16.47	17.72
	8H	15.63	15.99	16.63	16.99	18.26	15.25	15.61	16.25	16.61	17.88
	12H	15.75	16.07	16.75	17.06	18.38	15.36	15.67	16.36	16.66	17.98
12H	4H	14.80	15.24	15.78	16.23	17.49	14.44	14.88	15.42	15.87	17.12
	6H	15.45	15.81	16.45	16.81	18.08	15.09	15.44	16.08	16.44	17.71
	8H	15.68	15.99	16.68	16.99	18.30	15.31	15.62	16.31	16.62	17.93