

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: P908365

Luminaire Tested: DFN2DIP-PN2F0-050D020US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908365
REPORT IS A COMBINATION OF REPORTS P900987 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-050D020US840-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

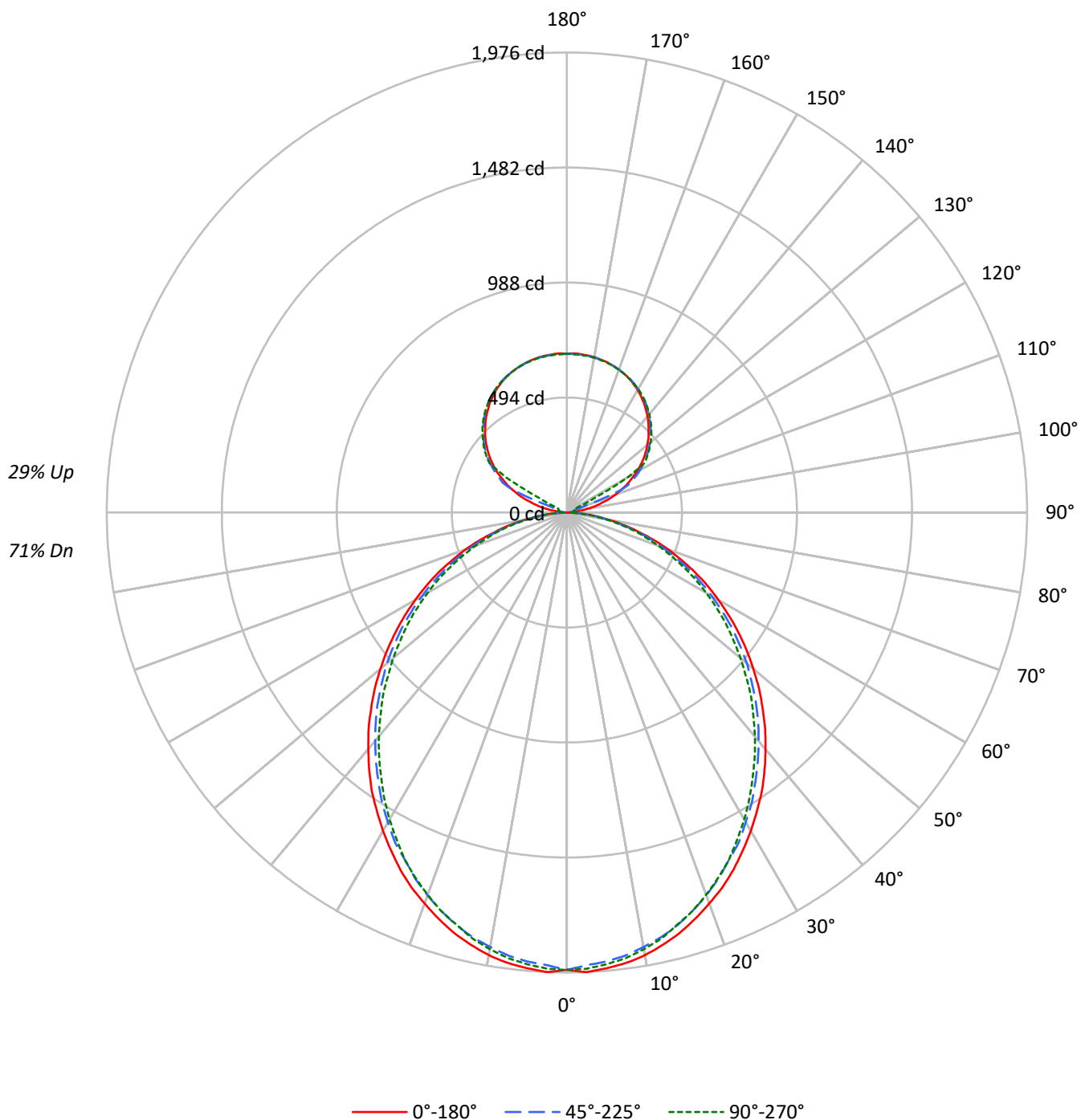
Lumens per Lamp: N/A
Luminaire Lumens: 6998.4 lumens
Efficiency: N/A
Efficacy: 104.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 67
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P908365

CATALOG NUMBER: DFN2DIP-PN2F0-050D020US840-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P908365

CATALOG NUMBER: DFN2DIP-PN2F0-050D020US840-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	112	112	112	112	106	106	106	106	95	95	95	85	85	85	76	76	76
1	103	98	94	90	97	93	90	86	84	81	78	75	73	71	67	66	64
2	93	86	79	74	88	81	76	71	73	69	65	66	62	59	59	56	54
3	85	75	68	62	80	72	65	59	65	59	55	58	54	50	52	49	46
4	78	67	59	52	74	64	56	50	58	52	47	52	47	43	47	43	40
5	72	60	51	45	68	57	49	44	52	45	40	47	42	38	42	38	35
6	66	54	45	39	63	51	44	38	47	40	35	42	37	33	38	34	31
7	61	49	40	35	58	47	39	34	42	36	31	39	33	29	35	31	27
8	57	44	36	31	54	42	35	30	39	33	28	35	30	26	32	28	24
9	53	41	33	28	50	39	32	27	36	30	25	33	27	24	30	25	22
10	50	37	30	25	47	36	29	24	33	27	23	30	25	21	28	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4255	4255	4255
5°	4255	4187	4218
10°	4214	4122	4155
15°	4145	4044	4059
20°	4055	3941	3962
25°	3964	3820	3850
30°	3853	3706	3710
35°	3747	3573	3562
40°	3617	3438	3420
45°	3488	3303	3275
50°	3346	3160	3108
55°	3196	2996	2952
60°	3027	2802	2775
65°	2842	2599	2565
70°	2606	2353	2338
75°	2283	2058	2119
80°	1889	1680	1719
85°	1282	1062	1077

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3488 cd/sqm

TEST NUMBER: P908365

CATALOG NUMBER: DFN2DIP-PN2F0-050D020US840-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.9	2.6
10°-20°	520.3	7.4
20°-30°	764.6	10.9
30°-40°	888.1	12.7
40°-50°	887.0	12.7
50°-60°	773.4	11.1
60°-70°	571.7	8.2
70°-80°	323.5	4.6
80°-90°	86.6	1.2
90°-100°	22.5	0.3
100°-110°	83.8	1.2
110°-120°	222.2	3.2
120°-130°	368.6	5.3
130°-140°	391.5	5.6
140°-150°	363.9	5.2
150°-160°	292.5	4.2
160°-170°	188.5	2.7
170°-180°	64.9	0.9
0°-30°	1469.8	21.0
0°-40°	2357.9	33.7
0°-60°	4018.3	57.4
0°-90°	5000.0	71.4
90°-120°	328.5	4.7
90°-150°	1452.4	20.8
90°-180°	1998.0	28.5
0°-180°	6998.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1965	1965	1965	1965	1965	
5°	1965	1957	1936	1952	1948	187
15°	1870	1859	1834	1842	1833	527
25°	1693	1678	1646	1649	1646	779
35°	1460	1442	1411	1400	1390	912
45°	1188	1175	1147	1126	1118	917
55°	899	888	865	843	833	804
65°	606	595	576	559	550	600
75°	317	314	304	293	297	339
85°	77	76	74	68	66	86
90°	0	6	10	12	13	6
95°	32	16	19	22	21	38
105°	150	165	30	35	38	160
115°	284	292	304	76	40	279
125°	401	407	417	420	422	358
135°	496	504	508	514	512	383
145°	576	575	584	587	584	360
155°	634	629	635	638	634	292
165°	668	665	666	670	666	189
175°	683	680	681	684	679	65
180°	682	682	682	682	682	

TEST NUMBER: P908365

CATALOG NUMBER: DFN2DIP-PN2F0-050D020US840-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.7	1964.7	1964.7	1964.7	1964.7
2.5°	1976.1	1966.7	1945.9	1964.7	1961.2
5°	1964.7	1957.3	1936.4	1951.5	1947.9
7.5°	1951.5	1940.3	1919.5	1934.7	1930.9
10°	1930.9	1917.6	1895.0	1910.0	1904.4
12.5°	1902.4	1891.2	1868.6	1877.9	1874.1
15°	1870.3	1859.1	1834.4	1842.1	1832.6
17.5°	1830.6	1819.4	1794.7	1804.1	1794.7
20°	1787.2	1775.9	1749.5	1755.0	1747.7
22.5°	1743.8	1726.8	1702.1	1702.1	1698.3
25°	1692.7	1677.7	1645.6	1649.2	1645.6
27.5°	1636.0	1622.8	1598.3	1592.7	1583.3
30°	1579.4	1564.3	1536.0	1530.4	1522.8
32.5°	1518.9	1507.7	1477.4	1466.0	1458.4
35°	1460.4	1441.6	1411.3	1399.9	1390.5
37.5°	1394.2	1377.3	1347.0	1333.7	1324.3
40°	1326.4	1311.1	1280.8	1263.9	1256.4
42.5°	1260.2	1245.0	1214.9	1195.8	1184.6
45°	1188.4	1175.2	1146.7	1126.1	1118.4
47.5°	1118.4	1105.2	1075.0	1054.1	1042.9
50°	1044.7	1035.3	1008.9	982.4	972.9
52.5°	972.9	959.7	935.2	914.4	901.2
55°	899.4	888.0	865.3	842.6	833.2
57.5°	825.6	816.2	791.5	768.9	761.2
60°	751.8	744.5	718.0	697.1	691.6
62.5°	680.1	666.9	648.0	629.1	621.6
65°	606.5	595.1	576.2	559.3	549.8
67.5°	531.0	521.4	504.5	491.3	483.6
70°	461.0	453.4	436.4	423.1	415.8
72.5°	389.3	381.6	372.2	359.0	353.4
75°	317.3	313.7	304.1	292.9	296.7
77.5°	253.2	245.5	241.8	236.1	230.6
80°	189.0	187.0	183.2	177.6	173.8
82.5°	128.5	128.5	126.6	119.1	119.1
85°	77.4	75.5	73.7	68.0	66.1
87.5°	34.0	30.3	26.5	20.8	18.9
90°	0.5	6.0	9.8	12.3	13.3
92.5°	12.3	10.4	11.8	12.8	13.3
95°	32.0	15.8	19.2	21.7	21.2
97.5°	57.7	17.3	25.1	26.7	27.2
100°	87.4	19.7	28.1	32.0	33.0
102.5°	119.9	118.9	29.1	34.5	36.1
105°	150.0	164.7	30.1	35.4	37.5
107.5°	185.0	197.2	31.1	36.5	38.5
110°	218.5	228.8	86.3	37.1	39.0



TEST NUMBER: P908365

CATALOG NUMBER: DFN2DIP-PN2F0-050D020US840-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	250.0	258.9	250.5	38.0	39.5
115°	283.6	292.0	304.4	75.9	40.5
117.5°	312.7	322.6	330.9	260.4	131.2
120°	345.3	352.6	361.5	367.5	300.8
122.5°	372.8	380.7	390.6	393.5	394.2
125°	401.0	407.4	416.8	420.2	421.7
127.5°	426.7	433.5	441.0	445.9	446.4
130°	450.8	458.7	464.1	469.6	469.1
132.5°	475.4	481.9	487.3	491.7	491.3
135°	496.2	504.1	508.5	513.5	512.5
137.5°	517.9	523.8	528.8	533.7	532.2
140°	539.1	543.1	548.5	552.9	550.5
142.5°	556.8	560.4	566.7	570.7	568.2
145°	575.6	575.1	583.5	586.9	584.5
147.5°	591.9	590.4	598.7	601.2	599.3
150°	607.6	604.2	612.1	615.0	612.6
152.5°	621.0	617.0	624.4	627.4	623.9
155°	633.8	629.3	635.3	638.2	634.3
157.5°	644.2	640.3	644.7	648.1	644.2
160°	653.1	650.1	653.1	656.0	652.6
162.5°	660.9	657.9	660.5	663.9	659.4
165°	667.8	664.9	666.3	669.8	666.3
167.5°	673.3	670.2	671.8	675.3	670.8
170°	677.7	674.7	675.7	679.1	674.7
172.5°	680.6	677.7	678.7	682.2	677.7
175°	683.1	679.6	680.6	684.1	679.1
177.5°	684.1	680.6	681.2	684.6	680.1
180°	681.7	681.7	681.7	681.7	681.7

TEST NUMBER: P908365

CATALOG NUMBER: DFN2DIP-PN2F0-050D020US840-FLONL

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	13.97	15.06	14.71	15.83	16.76	13.53	14.62	14.28	15.39	16.32
	3H	15.62	16.61	16.39	17.39	18.35	15.14	16.13	15.90	16.91	17.86
	4H	16.21	17.14	16.99	17.92	18.90	15.73	16.65	16.51	17.44	18.41
	6H	16.60	17.46	17.40	18.26	19.24	16.12	16.97	16.91	17.77	18.76
	8H	16.71	17.52	17.51	18.34	19.33	16.22	17.04	17.02	17.85	18.84
	12H	16.76	17.53	17.56	18.34	19.36	16.26	17.04	17.07	17.85	18.86
4H	2H	14.44	15.37	15.23	16.16	17.13	14.09	15.02	14.88	15.81	16.78
	3H	16.31	17.08	17.10	17.91	18.89	15.91	16.68	16.70	17.51	18.49
	4H	17.02	17.72	17.83	18.54	19.56	16.60	17.31	17.41	18.13	19.14
	6H	17.52	18.13	18.35	18.98	20.00	17.10	17.72	17.93	18.56	19.58
	8H	17.67	18.24	18.50	19.08	20.12	17.25	17.82	18.08	18.66	19.69
	12H	17.74	18.26	18.60	19.12	20.16	17.31	17.82	18.16	18.69	19.73
8H	4H	17.22	17.79	18.05	18.63	19.67	16.85	17.42	17.68	18.26	19.30
	6H	17.84	18.31	18.70	19.19	20.23	17.46	17.94	18.32	18.82	19.85
	8H	18.05	18.47	18.92	19.35	20.40	17.66	18.08	18.53	18.96	20.02
	12H	18.17	18.54	19.05	19.42	20.52	17.78	18.15	18.65	19.02	20.12
12H	4H	17.21	17.73	18.06	18.59	19.63	16.85	17.37	17.70	18.23	19.27
	6H	17.86	18.28	18.73	19.16	20.21	17.50	17.92	18.37	18.80	19.85
	8H	18.10	18.47	18.97	19.34	20.45	17.73	18.10	18.60	18.97	20.08