

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: P916812

Luminaire Tested: DFN2DIP-PN4F0-040D110US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916812
REPORT IS A COMBINATION OF REPORTS P899735 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D110US930-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

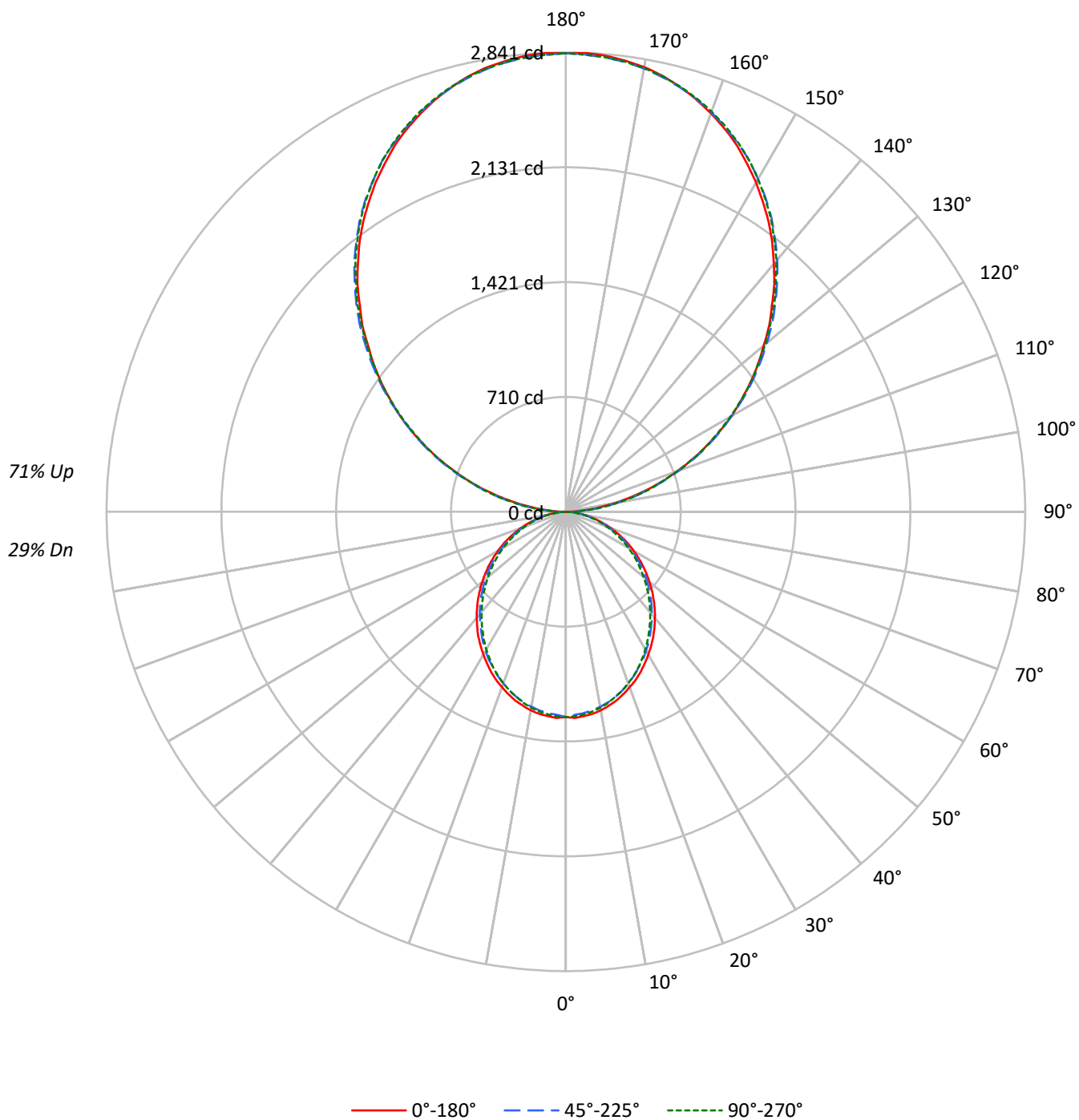
Lumens per Lamp: N/A
Luminaire Lumens: 11165.5 lumens
Efficiency: N/A
Efficacy: 89.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 125
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P916812

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US930-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P916812

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US930-FLLFL

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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37
1	93	89	85	82	83	80	77	74	63	61	59	47	46	44	32	32	31
2	85	78	72	67	76	70	65	60	55	51	48	41	39	37	29	27	26
3	77	68	61	55	69	61	55	50	48	44	41	36	34	31	25	24	22
4	71	60	53	47	63	54	48	43	43	38	35	32	29	27	23	21	19
5	65	53	46	40	58	48	41	36	38	33	30	29	26	23	20	18	17
6	59	48	40	34	53	43	36	31	34	29	26	26	23	20	18	16	15
7	55	43	35	30	49	39	32	27	31	26	23	24	20	18	17	15	13
8	51	39	31	26	45	35	29	24	28	23	20	22	18	16	15	13	12
9	47	35	28	23	42	32	26	21	26	21	18	20	16	14	14	12	10
10	44	32	25	21	39	29	23	19	24	19	16	18	15	13	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	926	926	926
5°	928	914	920
10°	920	901	907
15°	907	887	888
20°	888	866	868
25°	870	842	845
30°	847	819	816
35°	826	792	786
40°	799	765	756
45°	773	737	726
50°	744	709	692
55°	713	676	660
60°	679	636	623
65°	642	596	580
70°	594	546	534
75°	528	487	491
80°	449	411	410
85°	325	281	274

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2220 cd/sqm

TEST NUMBER: P916812

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US930-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.4	1.1
10°-20°	336.0	3.0
20°-30°	493.8	4.4
30°-40°	573.6	5.1
40°-50°	572.9	5.1
50°-60°	499.5	4.5
60°-70°	369.3	3.3
70°-80°	208.9	1.9
80°-90°	63.2	0.6
90°-100°	175.5	1.6
100°-110°	557.7	5.0
110°-120°	954.3	8.5
120°-130°	1255.1	11.2
130°-140°	1408.8	12.6
140°-150°	1381.5	12.4
150°-160°	1158.9	10.4
160°-170°	768.5	6.9
170°-180°	268.6	2.4
0°-30°	949.3	8.5
0°-40°	1522.9	13.6
0°-60°	2595.3	23.2
0°-90°	3236.6	29.0
90°-120°	1687.5	15.1
90°-150°	5732.8	51.3
90°-180°	7929.0	71.0
0°-180°	11165.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1269	1269	1269	1269	1269	
5°	1269	1264	1251	1260	1258	120
15°	1208	1201	1185	1190	1184	340
25°	1093	1084	1063	1065	1063	503
35°	943	931	912	904	898	589
45°	768	759	741	727	722	592
55°	581	574	559	544	538	519
65°	392	384	372	361	355	387
75°	205	203	196	189	192	219
85°	50	49	48	44	43	56
90°	2	31	84	79	81	11
95°	125	149	153	153	149	139
105°	515	522	527	531	531	543
115°	958	971	967	965	958	947
125°	1393	1414	1407	1400	1397	1245
135°	1802	1828	1833	1831	1824	1393
145°	2187	2204	2218	2221	2211	1367
155°	2501	2508	2516	2528	2520	1151
165°	2721	2718	2718	2735	2723	768
175°	2831	2824	2819	2836	2822	269
180°	2836	2836	2836	2836	2836	

TEST NUMBER: P916812

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US930-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1268.9	1268.9	1268.9	1268.9	1268.9
2.5°	1276.3	1270.2	1256.8	1268.9	1266.6
5°	1268.9	1264.1	1250.7	1260.4	1258.1
7.5°	1260.4	1253.1	1239.7	1249.5	1247.1
10°	1247.1	1238.5	1223.9	1233.6	1230.0
12.5°	1228.7	1221.4	1206.8	1212.9	1210.4
15°	1207.9	1200.7	1184.8	1189.7	1183.6
17.5°	1182.3	1175.1	1159.2	1165.2	1159.2
20°	1154.2	1147.0	1129.9	1133.5	1128.8
22.5°	1126.3	1115.2	1099.3	1099.3	1096.9
25°	1093.2	1083.5	1062.8	1065.2	1062.8
27.5°	1056.6	1048.1	1032.3	1028.7	1022.6
30°	1020.1	1010.3	992.1	988.4	983.5
32.5°	981.0	973.8	954.2	946.9	941.9
35°	943.2	931.1	911.5	904.2	898.1
37.5°	900.5	889.5	869.9	861.4	855.3
40°	856.6	846.8	827.2	816.4	811.5
42.5°	813.9	804.0	784.6	772.3	765.1
45°	767.5	759.0	740.6	727.3	722.4
47.5°	722.4	713.8	694.3	680.9	673.6
50°	674.7	668.6	651.6	634.5	628.4
52.5°	628.4	619.9	604.1	590.6	582.0
55°	580.9	573.5	558.9	544.2	538.2
57.5°	533.2	527.2	511.2	496.6	491.7
60°	485.6	480.8	463.7	450.3	446.6
62.5°	439.3	430.7	418.6	406.3	401.5
65°	391.8	384.3	372.2	361.2	355.1
67.5°	342.9	336.7	325.9	317.3	312.4
70°	297.7	292.9	281.8	273.3	268.5
72.5°	251.4	246.5	240.4	231.9	228.2
75°	205.0	202.6	196.4	189.1	191.6
77.5°	163.5	158.6	156.1	152.5	148.9
80°	122.1	120.7	118.3	114.7	112.3
82.5°	83.0	83.0	81.9	76.9	76.9
85°	50.0	48.8	47.6	43.9	42.7
87.5°	22.0	19.6	17.1	13.5	12.1
90°	2.5	30.8	83.8	78.7	81.2
92.5°	53.0	71.8	74.4	77.0	77.0
95°	124.8	148.8	153.0	153.0	148.8
97.5°	207.8	230.0	239.5	239.5	239.5
100°	303.5	323.2	330.0	330.0	327.5
102.5°	404.5	419.0	428.4	431.0	428.4
105°	514.8	521.6	526.8	531.0	531.0
107.5°	624.2	634.5	634.5	636.2	624.2
110°	730.3	744.0	744.0	744.0	737.1

TEST NUMBER: P916812

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US930-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	844.8	859.3	856.8	849.9	844.8
115°	957.7	971.3	967.1	964.6	957.7
117.5°	1069.8	1088.5	1076.5	1069.8	1062.9
120°	1182.6	1201.4	1182.6	1182.6	1174.9
122.5°	1285.2	1309.1	1297.1	1290.3	1285.2
125°	1392.9	1414.3	1407.4	1399.8	1397.2
127.5°	1498.1	1524.6	1515.2	1505.0	1498.1
130°	1596.4	1627.3	1622.9	1617.8	1608.4
132.5°	1706.7	1730.7	1732.4	1720.4	1713.6
135°	1801.6	1828.1	1833.3	1830.8	1823.9
137.5°	1907.7	1929.1	1933.3	1931.6	1921.4
140°	2000.9	2022.3	2034.3	2034.3	2024.9
142.5°	2096.7	2118.1	2124.9	2127.4	2118.1
145°	2187.3	2204.4	2218.1	2220.6	2211.3
147.5°	2268.6	2289.9	2300.2	2304.4	2295.1
150°	2352.4	2366.9	2376.3	2384.0	2376.3
152.5°	2426.7	2441.2	2453.2	2462.7	2453.2
155°	2501.2	2507.9	2515.7	2527.7	2519.9
157.5°	2565.3	2570.4	2574.6	2591.8	2579.8
160°	2622.6	2627.7	2630.2	2644.8	2634.6
162.5°	2675.6	2675.6	2678.2	2694.4	2682.4
165°	2720.9	2718.3	2718.3	2735.4	2723.4
167.5°	2761.9	2754.2	2754.2	2771.4	2759.4
170°	2792.7	2785.9	2783.3	2800.4	2785.9
172.5°	2814.1	2807.2	2804.7	2821.8	2807.2
175°	2831.2	2824.4	2819.2	2836.3	2821.8
177.5°	2840.6	2833.7	2828.6	2843.2	2828.6
180°	2836.3	2836.3	2836.3	2836.3	2836.3

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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	4.66	5.36	5.77	6.47	8.01	4.22	4.92	5.33	6.03	7.57
	3H	6.31	6.93	7.43	8.05	9.61	5.82	6.45	6.95	7.57	9.13
	4H	6.89	7.48	8.02	8.61	10.17	6.40	7.00	7.54	8.12	9.68
	6H	7.28	7.83	8.43	8.95	10.53	6.79	7.34	7.93	8.46	10.04
	8H	7.38	7.90	8.53	9.04	10.61	6.89	7.41	8.04	8.55	10.12
	12H	7.43	7.92	8.58	9.06	10.65	6.93	7.42	8.08	8.56	10.15
4H	2H	5.10	5.69	6.24	6.81	8.38	4.75	5.34	5.89	6.46	8.03
	3H	6.95	7.45	8.10	8.60	10.17	6.55	7.05	7.70	8.19	9.77
	4H	7.66	8.12	8.81	9.25	10.85	7.24	7.70	8.40	8.84	10.43
	6H	8.17	8.56	9.33	9.72	11.31	7.75	8.14	8.90	9.30	10.88
	8H	8.32	8.68	9.47	9.83	11.44	7.89	8.25	9.05	9.40	11.01
	12H	8.38	8.72	9.56	9.88	11.49	7.94	8.28	9.12	9.44	11.05
8H	4H	7.84	8.21	9.00	9.36	10.96	7.47	7.84	8.63	8.99	10.59
	6H	8.47	8.77	9.65	9.97	11.57	8.10	8.40	9.27	9.59	11.19
	8H	8.69	8.96	9.88	10.13	11.75	8.31	8.57	9.49	9.74	11.36
	12H	8.82	9.05	10.01	10.22	11.87	8.42	8.65	9.60	9.82	11.47
12H	4H	7.82	8.15	9.00	9.32	10.92	7.46	7.79	8.63	8.95	10.56
	6H	8.50	8.76	9.68	9.94	11.56	8.14	8.40	9.32	9.57	11.19
	8H	8.74	8.97	9.92	10.14	11.79	8.37	8.60	9.55	9.77	11.42

END OF REPORT