

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: P919770

Luminaire Tested: DFN2DIP-PN4F0-110D050US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919770
REPORT IS A COMBINATION OF REPORTS P899642 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-110D050US935-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

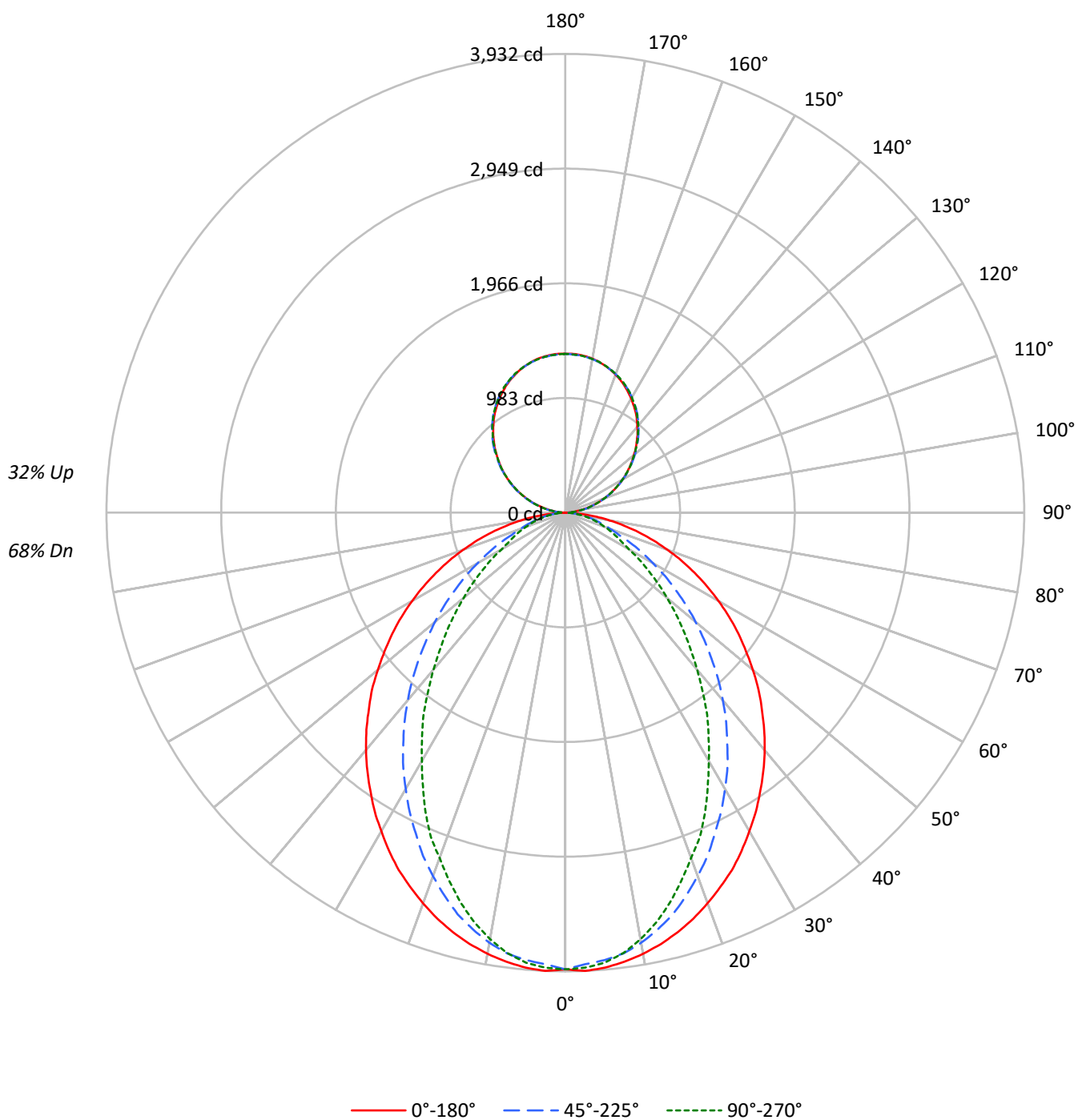
Lumens per Lamp: N/A
Luminaire Lumens: 11860.2 lumens
Efficiency: N/A
Efficacy: 78.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 151.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
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: P919770

CATALOG NUMBER: DFN2DIP-PN4F0-110D050US935-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P919770

CATALOG NUMBER: DFN2DIP-PN4F0-110D050US935-RLLFLL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20			
RC	80				70				50				30				10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	73	73	73	65	65	65
1	102	98	94	91	97	93	90	87	83	80	78	74	72	70	65	64	63	59	58	57
2	94	87	81	76	88	82	77	72	73	69	66	66	62	60	58	56	54	50	49	48
3	86	77	70	64	81	73	66	61	65	60	56	59	55	51	52	49	47	43	42	41
4	79	68	61	55	74	65	58	53	59	53	49	53	48	45	47	44	41	38	37	36
5	73	61	53	47	69	58	51	46	53	47	42	48	43	39	43	39	36	33	32	31
6	68	56	47	42	64	53	46	40	48	42	37	43	38	35	39	35	32	29	28	27
7	63	50	42	37	59	48	41	36	44	38	33	40	35	31	36	32	29	26	25	24
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26	24	23	22
9	55	42	35	30	52	40	34	29	37	31	27	34	29	25	31	27	24	22	21	20
10	51	39	32	27	48	37	31	26	34	29	25	31	27	23	29	25	22	20	19	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2857	2857	2857
5°	2862	2812	2831
10°	2834	2758	2739
15°	2794	2667	2597
20°	2743	2541	2423
25°	2690	2401	2254
30°	2619	2257	2041
35°	2550	2102	1853
40°	2479	1942	1638
45°	2397	1764	1442
50°	2312	1584	1252
55°	2223	1392	1068
60°	2120	1191	880
65°	2002	987	793
70°	1859	796	718
75°	1679	703	655
80°	1418	591	570
85°	988	396	431

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2397 cd/sqm

TEST NUMBER: P919770

CATALOG NUMBER: DFN2DIP-PN4F0-110D050US935-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	366.9	3.1
10°-20°	1007.1	8.5
20°-30°	1413.9	11.9
30°-40°	1541.3	13.0
40°-50°	1416.6	11.9
50°-60°	1112.5	9.4
60°-70°	724.2	6.1
70°-80°	372.8	3.1
80°-90°	99.0	0.8
90°-100°	84.2	0.7
100°-110°	267.7	2.3
110°-120°	458.1	3.9
120°-130°	602.5	5.1
130°-140°	676.3	5.7
140°-150°	663.1	5.6
150°-160°	556.3	4.7
160°-170°	368.9	3.1
170°-180°	128.9	1.1
0°-30°	2787.9	23.5
0°-40°	4329.1	36.5
0°-60°	6858.3	57.8
0°-90°	8054.2	67.9
90°-120°	810.0	6.8
90°-150°	2751.9	23.2
90°-180°	3806.0	32.1
0°-180°	11860.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3914	3914	3914	3914	3914	
5°	3914	3897	3850	3882	3872	371
15°	3723	3684	3564	3496	3461	1049
25°	3380	3266	3032	2887	2834	1554
35°	2912	2731	2420	2196	2118	1823
45°	2381	2143	1771	1520	1435	1838
55°	1810	1534	1151	939	872	1617
65°	1222	935	616	496	485	1212
75°	652	404	283	259	255	689
85°	152	78	67	67	67	175
90°	1	15	40	38	39	12
95°	60	72	73	73	72	67
105°	247	250	253	255	255	261
115°	460	466	464	463	460	455
125°	669	679	676	672	671	598
135°	865	878	880	879	876	669
145°	1050	1058	1065	1066	1061	656
155°	1201	1204	1208	1213	1210	553
165°	1306	1305	1305	1313	1307	368
175°	1359	1356	1353	1362	1354	129
180°	1362	1362	1362	1362	1362	

TEST NUMBER: P919770

CATALOG NUMBER: DFN2DIP-PN4F0-110D050US935-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3914.4	3914.4	3914.4	3914.4	3914.4
2.5°	3932.0	3914.4	3875.3	3911.0	3903.9
5°	3914.4	3896.7	3850.5	3882.4	3871.9
7.5°	3882.4	3861.3	3811.7	3825.7	3807.9
10°	3840.0	3815.1	3744.5	3733.5	3712.5
12.5°	3786.9	3755.0	3659.2	3638.1	3599.0
15°	3723.0	3684.0	3563.7	3496.4	3461.0
17.5°	3648.7	3591.9	3443.0	3365.2	3308.5
20°	3563.7	3492.6	3315.6	3227.3	3149.1
22.5°	3471.6	3390.0	3184.5	3064.2	3011.2
25°	3379.5	3266.0	3032.3	2887.2	2833.8
27.5°	3269.8	3149.1	2890.5	2724.0	2642.5
30°	3152.9	3018.0	2734.6	2554.2	2458.3
32.5°	3039.4	2876.2	2586.1	2373.4	2284.7
35°	2912.0	2731.2	2419.7	2196.4	2118.2
37.5°	2788.0	2592.9	2263.6	2019.0	1930.7
40°	2656.8	2444.5	2100.6	1849.1	1757.0
42.5°	2522.2	2295.6	1937.8	1675.5	1587.2
45°	2380.6	2143.0	1771.3	1519.5	1434.6
47.5°	2246.0	1994.6	1612.0	1360.1	1282.4
50°	2097.1	1845.7	1456.0	1211.3	1137.3
52.5°	1951.7	1686.0	1307.2	1073.4	1006.1
55°	1810.0	1533.8	1151.2	938.8	871.6
57.5°	1665.0	1381.6	1013.2	814.8	758.0
60°	1516.1	1232.8	867.8	687.4	630.7
62.5°	1371.1	1087.7	743.8	573.9	545.7
65°	1222.2	935.0	616.4	496.1	485.2
67.5°	1080.6	793.4	496.1	435.6	425.1
70°	931.7	655.5	410.8	375.5	361.2
72.5°	790.0	527.7	343.5	315.3	308.2
75°	651.7	403.6	283.4	258.6	255.2
77.5°	513.8	286.8	223.3	209.0	201.8
80°	386.0	205.6	169.9	156.0	156.0
82.5°	269.1	138.3	116.9	109.8	109.8
85°	152.2	77.8	67.2	67.2	67.2
87.5°	56.7	28.2	28.2	24.8	24.8
90°	1.2	14.8	40.2	37.8	39.0
92.5°	25.5	34.4	35.7	36.9	36.9
95°	59.9	71.5	73.4	73.4	71.5
97.5°	99.7	110.4	114.9	114.9	114.9
100°	145.7	155.2	158.4	158.4	157.2
102.5°	194.2	201.1	205.6	206.9	205.6
105°	247.1	250.4	252.9	254.9	254.9
107.5°	299.6	304.5	304.5	305.4	299.6
110°	350.5	357.1	357.1	357.1	353.8

TEST NUMBER: P919770

CATALOG NUMBER: DFN2DIP-PN4F0-110D050US935-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	405.5	412.5	411.3	408.0	405.5
115°	459.7	466.3	464.3	463.0	459.7
117.5°	513.5	522.5	516.8	513.5	510.2
120°	567.7	576.7	567.7	567.7	564.0
122.5°	616.9	628.4	622.7	619.4	616.9
125°	668.7	678.9	675.6	671.9	670.7
127.5°	719.1	731.8	727.4	722.4	719.1
130°	766.4	781.1	779.0	776.6	772.1
132.5°	819.3	830.8	831.6	825.9	822.6
135°	864.9	877.5	880.0	878.8	875.5
137.5°	915.8	926.0	928.1	927.2	922.3
140°	960.4	970.8	976.5	976.5	972.0
142.5°	1006.4	1016.8	1020.0	1021.2	1016.8
145°	1050.0	1058.2	1064.7	1066.0	1061.4
147.5°	1089.0	1099.2	1104.1	1106.2	1101.6
150°	1129.2	1136.2	1140.6	1144.4	1140.6
152.5°	1164.9	1171.9	1177.6	1182.2	1177.6
155°	1200.6	1203.8	1207.5	1213.3	1209.6
157.5°	1231.4	1233.8	1235.9	1244.1	1238.4
160°	1258.9	1261.4	1262.6	1269.5	1264.6
162.5°	1284.4	1284.4	1285.6	1293.4	1287.6
165°	1306.1	1304.8	1304.8	1313.1	1307.3
167.5°	1325.8	1322.1	1322.1	1330.3	1324.6
170°	1340.6	1337.3	1336.1	1344.3	1337.3
172.5°	1350.8	1347.5	1346.3	1354.5	1347.5
175°	1359.1	1355.7	1353.3	1361.5	1354.5
177.5°	1363.6	1360.3	1357.8	1364.8	1357.8
180°	1361.5	1361.5	1361.5	1361.5	1361.5

TEST NUMBER: P919770

CATALOG NUMBER: DFN2DIP-PN4F0-110D050US935-RLLFLL

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	12.33	13.33	13.12	14.14	15.14	8.29	9.30	9.09	10.11	11.10
	3H	14.02	14.92	14.83	15.74	16.76	9.50	10.39	10.30	11.21	12.24
	4H	14.64	15.49	15.47	16.31	17.35	9.96	10.80	10.78	11.63	12.66
	6H	15.07	15.85	15.91	16.69	17.74	10.29	11.06	11.12	11.90	12.95
	8H	15.21	15.95	16.05	16.80	17.85	10.38	11.12	11.23	11.98	13.02
	12H	15.28	15.98	16.13	16.83	17.90	10.43	11.14	11.28	11.98	13.06
4H	2H	12.37	13.21	13.20	14.04	15.08	8.91	9.76	9.74	10.59	11.62
	3H	14.22	14.92	15.06	15.78	16.83	10.28	10.98	11.12	11.84	12.89
	4H	14.92	15.55	15.77	16.42	17.49	10.83	11.47	11.69	12.33	13.41
	6H	15.44	15.99	16.31	16.88	17.96	11.26	11.81	12.13	12.70	13.78
	8H	15.63	16.14	16.50	17.02	18.11	11.40	11.91	12.27	12.79	13.88
	12H	15.73	16.19	16.62	17.09	18.19	11.47	11.93	12.36	12.83	13.93
8H	4H	14.90	15.41	15.77	16.29	17.38	11.13	11.64	12.00	12.52	13.61
	6H	15.47	15.90	16.37	16.82	17.91	11.65	12.08	12.55	13.00	14.09
	8H	15.69	16.07	16.60	16.98	18.09	11.85	12.22	12.76	13.14	14.25
	12H	15.84	16.17	16.75	17.08	18.24	11.97	12.31	12.89	13.21	14.38
12H	4H	14.86	15.32	15.75	16.22	17.32	11.14	11.60	12.03	12.50	13.60
	6H	15.45	15.83	16.36	16.74	17.85	11.71	12.08	12.62	13.00	14.11
	8H	15.68	16.01	16.59	16.92	18.08	11.92	12.26	12.84	13.16	14.33

END OF REPORT