

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: P914282

Luminaire Tested: DFN2DIP-PN4F0-100D060US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914282
REPORT IS A COMBINATION OF REPORTS P899658 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-100D060US927-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

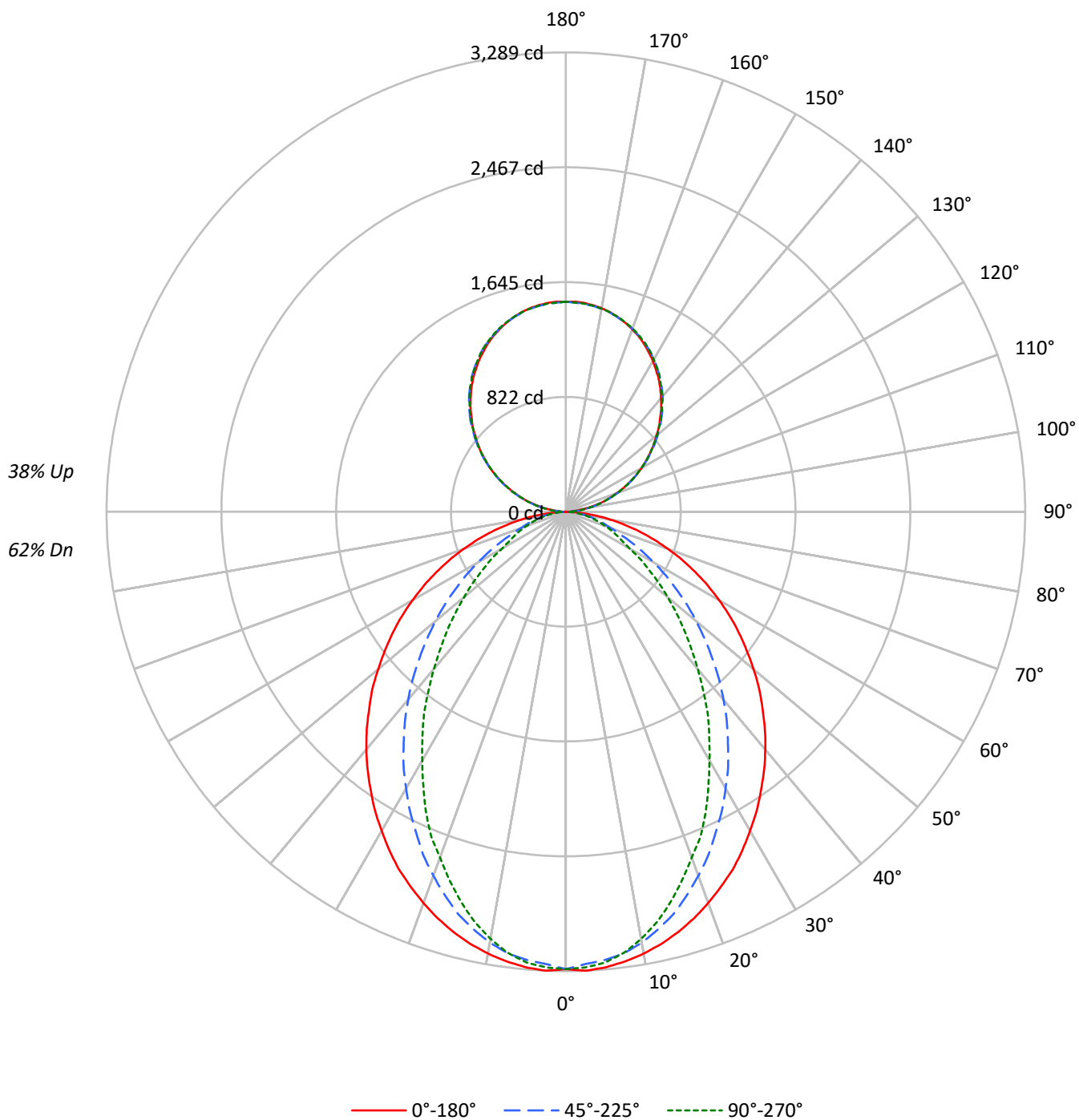
Lumens per Lamp: N/A
Luminaire Lumens: 10940.0 lumens
Efficiency: N/A
Efficacy: 74.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 146.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P914282

CATALOG NUMBER: DFN2DIP-PN4F0-100D060US927-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P914282

CATALOG NUMBER: DFN2DIP-PN4F0-100D060US927-RLLFLL

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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67
1	101	97	93	90	94	91	88	85	80	77	75	69	68	66	60	59	58
2	92	85	79	74	86	80	75	70	71	67	63	62	59	56	53	51	49
3	85	75	68	63	79	71	65	60	63	58	54	55	51	48	48	45	43
4	78	67	60	54	73	63	57	51	56	51	46	49	45	42	43	40	37
5	72	60	52	46	67	57	50	44	51	45	41	45	40	37	39	36	33
6	66	54	46	41	62	51	44	39	46	40	36	41	36	32	36	32	29
7	62	49	42	36	58	47	40	35	42	36	32	37	33	29	33	29	26
8	57	45	37	32	54	43	36	31	38	33	28	34	30	26	30	27	24
9	53	41	34	29	50	39	32	28	35	30	26	32	27	24	28	24	22
10	50	38	31	26	47	36	30	25	33	27	23	29	25	22	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2390	2390	2390
5°	2394	2352	2367
10°	2370	2307	2291
15°	2337	2231	2172
20°	2294	2126	2026
25°	2250	2008	1886
30°	2191	1888	1707
35°	2132	1758	1550
40°	2073	1624	1370
45°	2005	1475	1206
50°	1933	1325	1047
55°	1859	1164	894
60°	1773	996	736
65°	1675	825	663
70°	1555	666	601
75°	1404	588	547
80°	1186	494	476
85°	826	331	361

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2005 cd/sqm

TEST NUMBER: P914282

CATALOG NUMBER: DFN2DIP-PN4F0-100D060US927-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	306.9	2.8
10°-20°	842.4	7.7
20°-30°	1182.6	10.8
30°-40°	1289.2	11.8
40°-50°	1184.9	10.8
50°-60°	930.5	8.5
60°-70°	605.7	5.5
70°-80°	311.8	2.8
80°-90°	83.9	0.8
90°-100°	93.0	0.9
100°-110°	295.6	2.7
110°-120°	505.8	4.6
120°-130°	665.2	6.1
130°-140°	746.6	6.8
140°-150°	732.2	6.7
150°-160°	614.2	5.6
160°-170°	407.3	3.7
170°-180°	142.4	1.3
0°-30°	2331.9	21.3
0°-40°	3621.0	33.1
0°-60°	5736.5	52.4
0°-90°	6737.8	61.6
90°-120°	894.4	8.2
90°-150°	3038.4	27.8
90°-180°	4202.0	38.4
0°-180°	10940.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3274	3274	3274	3274	3274	
5°	3274	3259	3221	3247	3238	310
15°	3114	3081	2981	2924	2895	878
25°	2827	2732	2536	2415	2370	1300
35°	2436	2284	2024	1837	1772	1524
45°	1991	1792	1482	1271	1200	1538
55°	1514	1283	963	785	729	1353
65°	1022	782	516	415	406	1014
75°	545	338	237	216	213	577
85°	127	65	56	56	56	146
90°	1	16	44	42	43	11
95°	66	79	81	81	79	74
105°	273	276	279	282	282	288
115°	508	515	512	511	508	502
125°	738	750	746	742	740	660
135°	955	969	972	970	967	738
145°	1159	1168	1176	1177	1172	724
155°	1326	1329	1333	1340	1336	610
165°	1442	1441	1441	1450	1443	407
175°	1500	1497	1494	1503	1496	143
180°	1503	1503	1503	1503	1503	

TEST NUMBER: P914282

CATALOG NUMBER: DFN2DIP-PN4F0-100D060US927-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3274.1	3274.1	3274.1	3274.1	3274.1
2.5°	3288.8	3274.1	3241.4	3271.2	3265.3
5°	3274.1	3259.3	3220.6	3247.4	3238.5
7.5°	3247.4	3229.7	3188.2	3199.9	3185.1
10°	3211.8	3191.1	3132.0	3122.9	3105.3
12.5°	3167.5	3140.8	3060.6	3043.0	3010.3
15°	3114.1	3081.3	2980.7	2924.5	2894.9
17.5°	3051.8	3004.3	2879.9	2814.8	2767.3
20°	2980.7	2921.3	2773.3	2699.4	2634.0
22.5°	2903.7	2835.5	2663.6	2563.0	2518.7
25°	2826.7	2731.8	2536.2	2414.9	2370.3
27.5°	2734.9	2634.0	2417.7	2278.5	2210.3
30°	2637.2	2524.3	2287.3	2136.4	2056.3
32.5°	2542.3	2405.8	2163.1	1985.2	1911.0
35°	2435.6	2284.5	2023.9	1837.1	1771.7
37.5°	2331.9	2168.8	1893.4	1688.8	1614.9
40°	2222.2	2044.6	1757.0	1546.7	1469.7
42.5°	2109.7	1920.1	1620.9	1401.4	1327.5
45°	1991.1	1792.5	1481.6	1271.0	1199.9
47.5°	1878.7	1668.3	1348.3	1137.7	1072.6
50°	1754.1	1543.8	1217.8	1013.2	951.3
52.5°	1632.4	1410.2	1093.4	897.8	841.5
55°	1513.9	1282.9	962.9	785.3	729.0
57.5°	1392.7	1155.6	847.6	681.5	634.1
60°	1268.1	1031.1	725.9	575.0	527.5
62.5°	1146.8	909.7	622.1	480.1	456.5
65°	1022.3	782.1	515.6	414.9	405.8
67.5°	903.8	663.6	414.9	364.3	355.5
70°	779.3	548.3	343.6	314.0	302.1
72.5°	660.8	441.3	287.3	263.7	257.8
75°	545.1	337.6	237.0	216.3	213.4
77.5°	429.8	239.9	186.7	174.8	168.8
80°	322.8	172.0	142.1	130.5	130.5
82.5°	225.1	115.7	97.8	91.8	91.8
85°	127.3	65.0	56.2	56.2	56.2
87.5°	47.5	23.6	23.6	20.8	20.8
90°	1.3	16.3	44.4	41.7	43.0
92.5°	28.1	38.1	39.5	40.8	40.8
95°	66.1	78.8	81.1	81.1	78.8
97.5°	110.1	121.9	126.9	126.9	126.9
100°	160.9	171.3	174.9	174.9	173.6
102.5°	214.4	222.0	227.0	228.4	227.0
105°	272.8	276.5	279.2	281.5	281.5
107.5°	330.8	336.3	336.3	337.2	330.8
110°	387.1	394.3	394.3	394.3	390.6

TEST NUMBER: P914282

CATALOG NUMBER: DFN2DIP-PN4F0-100D060US927-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	447.7	455.4	454.1	450.4	447.7
115°	507.6	514.8	512.5	511.2	507.6
117.5°	567.0	576.9	570.5	567.0	563.3
120°	626.8	636.8	626.8	626.8	622.7
122.5°	681.1	693.8	687.5	683.9	681.1
125°	738.2	749.6	745.9	741.9	740.5
127.5°	794.0	808.0	803.0	797.6	794.0
130°	846.1	862.4	860.2	857.5	852.5
132.5°	904.6	917.3	918.1	911.8	908.2
135°	954.9	968.9	971.6	970.3	966.6
137.5°	1011.1	1022.4	1024.7	1023.7	1018.3
140°	1060.5	1071.8	1078.2	1078.2	1073.2
142.5°	1111.2	1122.5	1126.2	1127.5	1122.5
145°	1159.3	1168.3	1175.6	1176.9	1172.0
147.5°	1202.3	1213.6	1219.1	1221.3	1216.3
150°	1246.7	1254.4	1259.4	1263.4	1259.4
152.5°	1286.1	1293.9	1300.2	1305.2	1300.2
155°	1325.6	1329.2	1333.2	1339.7	1335.5
157.5°	1359.5	1362.3	1364.5	1373.6	1367.3
160°	1390.0	1392.7	1394.0	1401.7	1396.3
162.5°	1418.0	1418.0	1419.4	1428.0	1421.6
165°	1442.0	1440.7	1440.7	1449.8	1443.4
167.5°	1463.8	1459.8	1459.8	1468.8	1462.4
170°	1480.1	1476.5	1475.1	1484.2	1476.5
172.5°	1491.4	1487.8	1486.4	1495.5	1487.8
175°	1500.5	1496.9	1494.1	1503.2	1495.5
177.5°	1505.5	1501.9	1499.1	1506.8	1499.1
180°	1503.2	1503.2	1503.2	1503.2	1503.2

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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	11.20	12.13	12.06	13.01	14.11	7.16	8.10	8.02	8.97	10.07
	3H	12.89	13.72	13.76	14.61	15.73	8.36	9.20	9.23	10.08	11.21
	4H	13.50	14.29	14.39	15.18	16.32	8.82	9.60	9.70	10.50	11.63
	6H	13.93	14.66	14.83	15.56	16.70	9.14	9.87	10.04	10.77	11.91
	8H	14.06	14.75	14.97	15.67	16.82	9.24	9.93	10.14	10.84	11.99
	12H	14.13	14.79	15.04	15.69	16.87	9.28	9.94	10.20	10.85	12.02
4H	2H	11.23	12.02	12.12	12.91	14.04	7.77	8.56	8.66	9.45	10.59
	3H	13.07	13.73	13.97	14.65	15.80	9.13	9.79	10.04	10.71	11.86
	4H	13.77	14.37	14.68	15.28	16.46	9.69	10.28	10.60	11.20	12.38
	6H	14.29	14.81	15.22	15.75	16.93	10.11	10.63	11.04	11.57	12.75
	8H	14.47	14.95	15.40	15.89	17.08	10.24	10.72	11.17	11.66	12.85
	12H	14.57	15.01	15.52	15.96	17.16	10.31	10.75	11.26	11.70	12.90
8H	4H	13.75	14.23	14.68	15.16	16.35	9.98	10.46	10.91	11.39	12.58
	6H	14.32	14.71	15.27	15.69	16.88	10.50	10.90	11.46	11.87	13.06
	8H	14.54	14.89	15.50	15.86	17.06	10.69	11.04	11.66	12.01	13.22
	12H	14.68	14.99	15.65	15.95	17.21	10.82	11.12	11.78	12.09	13.34
12H	4H	13.70	14.13	14.65	15.09	16.28	9.99	10.42	10.93	11.37	12.57
	6H	14.29	14.64	15.26	15.61	16.82	10.55	10.90	11.52	11.87	13.08
	8H	14.52	14.83	15.49	15.79	17.05	10.77	11.07	11.73	12.04	13.29