

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: P919818

Luminaire Tested: DFN2DIP-PN4F0-120D080US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919818
REPORT IS A COMBINATION OF REPORTS P899698 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-120D080US935-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

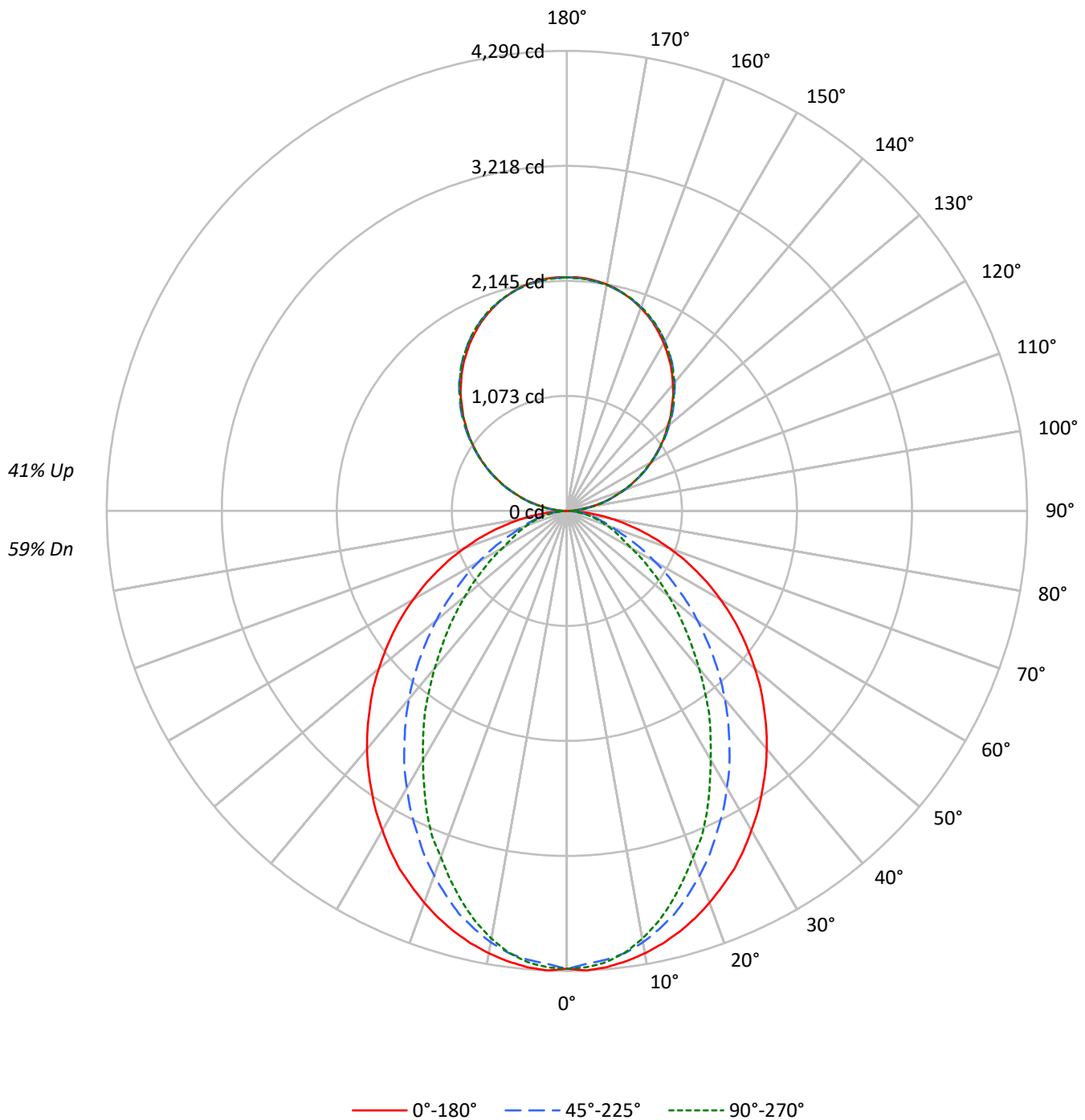
Lumens per Lamp: N/A
Luminaire Lumens: 14878.1 lumens
Efficiency: N/A
Efficacy: 80.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 184.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P919818

CATALOG NUMBER: DFN2DIP-PN4F0-120D080US935-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P919818

CATALOG NUMBER: DFN2DIP-PN4F0-120D080US935-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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3117	3117	3117
5°	3122	3068	3088
10°	3091	3008	2988
15°	3049	2909	2833
20°	2992	2773	2643
25°	2935	2619	2459
30°	2857	2462	2226
35°	2781	2293	2021
40°	2704	2118	1786
45°	2614	1924	1573
50°	2522	1728	1366
55°	2425	1518	1166
60°	2313	1299	960
65°	2184	1076	865
70°	2028	868	783
75°	1831	767	714
80°	1547	644	621
85°	1078	433	471

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2614 cd/sqm

TEST NUMBER: P919818

CATALOG NUMBER: DFN2DIP-PN4F0-120D080US935-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	400.2	2.7
10°-20°	1098.7	7.4
20°-30°	1542.5	10.4
30°-40°	1681.4	11.3
40°-50°	1545.4	10.4
50°-60°	1213.7	8.2
60°-70°	790.0	5.3
70°-80°	406.7	2.7
80°-90°	110.0	0.7
90°-100°	134.8	0.9
100°-110°	428.3	2.9
110°-120°	733.0	4.9
120°-130°	964.0	6.5
130°-140°	1082.0	7.3
140°-150°	1061.0	7.1
150°-160°	890.1	6.0
160°-170°	590.3	4.0
170°-180°	206.3	1.4
0°-30°	3041.3	20.4
0°-40°	4722.7	31.7
0°-60°	7481.7	50.3
0°-90°	8788.4	59.1
90°-120°	1296.1	8.7
90°-150°	4403.1	29.6
90°-180°	6090.0	40.9
0°-180°	14878.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4270	4270	4270	4270	4270	
5°	4270	4251	4200	4235	4224	405
15°	4062	4019	3888	3814	3776	1144
25°	3687	3563	3308	3150	3091	1696
35°	3177	2980	2640	2396	2311	1988
45°	2597	2338	1932	1658	1565	2006
55°	1975	1673	1256	1024	951	1764
65°	1333	1020	672	541	529	1322
75°	711	440	309	282	278	752
85°	166	85	73	73	73	191
90°	2	24	64	60	62	15
95°	96	114	118	118	114	107
105°	395	401	405	408	408	417
115°	736	746	743	741	736	728
125°	1070	1086	1081	1075	1073	956
135°	1384	1404	1408	1406	1401	1070
145°	1680	1693	1704	1706	1698	1050
155°	1921	1926	1932	1941	1935	884
165°	2090	2088	2088	2101	2092	590
175°	2174	2169	2165	2178	2167	207
180°	2178	2178	2178	2178	2178	

TEST NUMBER: P919818

CATALOG NUMBER: DFN2DIP-PN4F0-120D080US935-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4270.2	4270.2	4270.2	4270.2	4270.2
2.5°	4289.5	4270.2	4227.6	4266.5	4258.7
5°	4270.2	4250.9	4200.5	4235.3	4223.9
7.5°	4235.3	4212.3	4158.3	4173.4	4154.1
10°	4189.0	4162.0	4084.8	4073.0	4050.0
12.5°	4131.2	4096.4	3991.8	3968.9	3926.2
15°	4061.5	4018.9	3887.7	3814.2	3775.7
17.5°	3980.3	3918.4	3756.0	3671.2	3609.3
20°	3887.7	3810.2	3617.1	3520.7	3435.4
22.5°	3787.2	3698.2	3474.0	3342.7	3285.0
25°	3686.8	3562.9	3307.9	3149.6	3091.4
27.5°	3567.0	3435.4	3153.3	2971.7	2882.7
30°	3439.5	3292.4	2983.2	2786.4	2681.8
32.5°	3315.7	3137.7	2821.2	2589.2	2492.4
35°	3176.7	2979.5	2639.6	2396.1	2310.7
37.5°	3041.4	2828.6	2469.4	2202.5	2106.2
40°	2898.3	2666.7	2291.5	2017.2	1916.8
42.5°	2751.5	2504.3	2114.0	1827.8	1731.5
45°	2596.9	2337.9	1932.3	1657.7	1564.9
47.5°	2450.1	2175.9	1758.5	1483.8	1398.9
50°	2287.8	2013.5	1588.4	1321.5	1240.7
52.5°	2129.2	1839.3	1426.0	1171.0	1097.6
55°	1974.6	1673.3	1255.9	1024.2	950.8
57.5°	1816.3	1507.2	1105.3	888.9	827.0
60°	1654.0	1344.8	946.7	749.9	688.0
62.5°	1495.7	1186.5	811.4	626.1	595.3
65°	1333.3	1020.1	672.4	541.2	529.3
67.5°	1178.8	865.5	541.2	475.2	463.7
70°	1016.4	715.1	448.1	409.6	394.0
72.5°	861.9	575.7	374.7	344.0	336.2
75°	710.9	440.3	309.2	282.1	278.4
77.5°	560.5	312.8	243.6	228.0	220.2
80°	421.1	224.3	185.3	170.1	170.1
82.5°	293.6	150.8	127.5	119.7	119.7
85°	166.1	84.9	73.4	73.4	73.4
87.5°	61.9	30.7	30.7	27.0	27.0
90°	2.0	23.7	64.4	60.4	62.4
92.5°	40.7	55.2	57.2	59.1	59.1
95°	95.9	114.3	117.5	117.5	114.3
97.5°	159.6	176.7	183.9	183.9	183.9
100°	233.2	248.2	253.5	253.5	251.5
102.5°	310.6	321.8	329.0	331.0	329.0
105°	395.4	400.6	404.6	407.9	407.9
107.5°	479.4	487.3	487.3	488.6	479.4
110°	560.9	571.4	571.4	571.4	566.1



TEST NUMBER: P919818

CATALOG NUMBER: DFN2DIP-PN4F0-120D080US935-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	648.8	660.0	658.1	652.8	648.8
115°	735.6	746.1	742.8	740.8	735.6
117.5°	821.6	836.0	826.8	821.6	816.3
120°	908.3	922.7	908.3	908.3	902.3
122.5°	987.0	1005.5	996.3	991.0	987.0
125°	1069.8	1086.2	1081.0	1075.0	1073.1
127.5°	1150.6	1171.0	1163.7	1155.9	1150.6
130°	1226.1	1249.7	1246.5	1242.6	1235.4
132.5°	1310.9	1329.2	1330.6	1321.4	1316.1
135°	1383.7	1404.1	1408.1	1406.1	1400.8
137.5°	1465.2	1481.6	1484.9	1483.6	1475.7
140°	1536.8	1553.2	1562.4	1562.4	1555.1
142.5°	1610.3	1626.8	1632.0	1634.0	1626.8
145°	1680.0	1693.1	1703.6	1705.6	1698.3
147.5°	1742.3	1758.8	1766.6	1770.0	1762.7
150°	1806.7	1817.8	1825.1	1831.0	1825.1
152.5°	1863.8	1875.0	1884.2	1891.4	1884.2
155°	1921.0	1926.2	1932.2	1941.3	1935.4
157.5°	1970.2	1974.2	1977.5	1990.5	1981.4
160°	2014.2	2018.2	2020.2	2031.3	2023.4
162.5°	2054.9	2054.9	2056.9	2069.4	2060.2
165°	2089.7	2087.7	2087.7	2100.9	2091.7
167.5°	2121.2	2115.4	2115.4	2128.5	2119.3
170°	2144.9	2139.7	2137.7	2150.9	2139.7
172.5°	2161.4	2156.1	2154.1	2167.2	2156.1
175°	2174.5	2169.2	2165.2	2178.4	2167.2
177.5°	2181.7	2176.4	2172.5	2183.7	2172.5
180°	2178.4	2178.4	2178.4	2178.4	2178.4

TEST NUMBER: P919818

CATALOG NUMBER: DFN2DIP-PN4F0-120D080US935-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	11.91	12.82	12.79	13.72	14.86	7.87	8.79	8.76	9.68	10.82
	3H	13.60	14.41	14.49	15.32	16.48	9.07	9.88	9.97	10.79	11.96
	4H	14.21	14.98	15.12	15.89	17.07	9.53	10.29	10.44	11.21	12.38
	6H	14.64	15.35	15.56	16.27	17.45	9.85	10.56	10.77	11.48	12.66
	8H	14.77	15.44	15.70	16.38	17.56	9.94	10.62	10.87	11.55	12.74
	12H	14.83	15.48	15.77	16.41	17.62	9.99	10.63	10.92	11.56	12.77
4H	2H	11.94	12.71	12.85	13.62	14.79	8.48	9.25	9.40	10.16	11.34
	3H	13.78	14.42	14.70	15.36	16.55	9.84	10.48	10.77	11.42	12.61
	4H	14.48	15.06	15.41	16.00	17.21	10.39	10.97	11.33	11.91	13.13
	6H	15.00	15.50	15.95	16.46	17.68	10.82	11.32	11.77	12.28	13.49
	8H	15.18	15.64	16.13	16.60	17.83	10.95	11.42	11.90	12.37	13.60
	12H	15.28	15.70	16.25	16.67	17.90	11.02	11.44	11.99	12.41	13.64
8H	4H	14.45	14.92	15.40	15.87	17.10	10.68	11.15	11.63	12.10	13.33
	6H	15.02	15.41	16.00	16.41	17.63	11.20	11.59	12.18	12.59	13.81
	8H	15.24	15.58	16.23	16.57	17.81	11.39	11.74	12.38	12.72	13.97
	12H	15.38	15.68	16.37	16.67	17.96	11.52	11.82	12.51	12.80	14.09
12H	4H	14.40	14.83	15.37	15.80	17.03	10.69	11.11	11.66	12.08	13.32
	6H	15.00	15.34	15.98	16.33	17.57	11.25	11.59	12.24	12.58	13.83
	8H	15.22	15.52	16.21	16.50	17.80	11.47	11.77	12.46	12.75	14.04