

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: P924784

Luminaire Tested: DFN2DIP-PN3F0-030D060US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924784
REPORT IS A COMBINATION OF REPORTS P899553 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-030D060US950-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

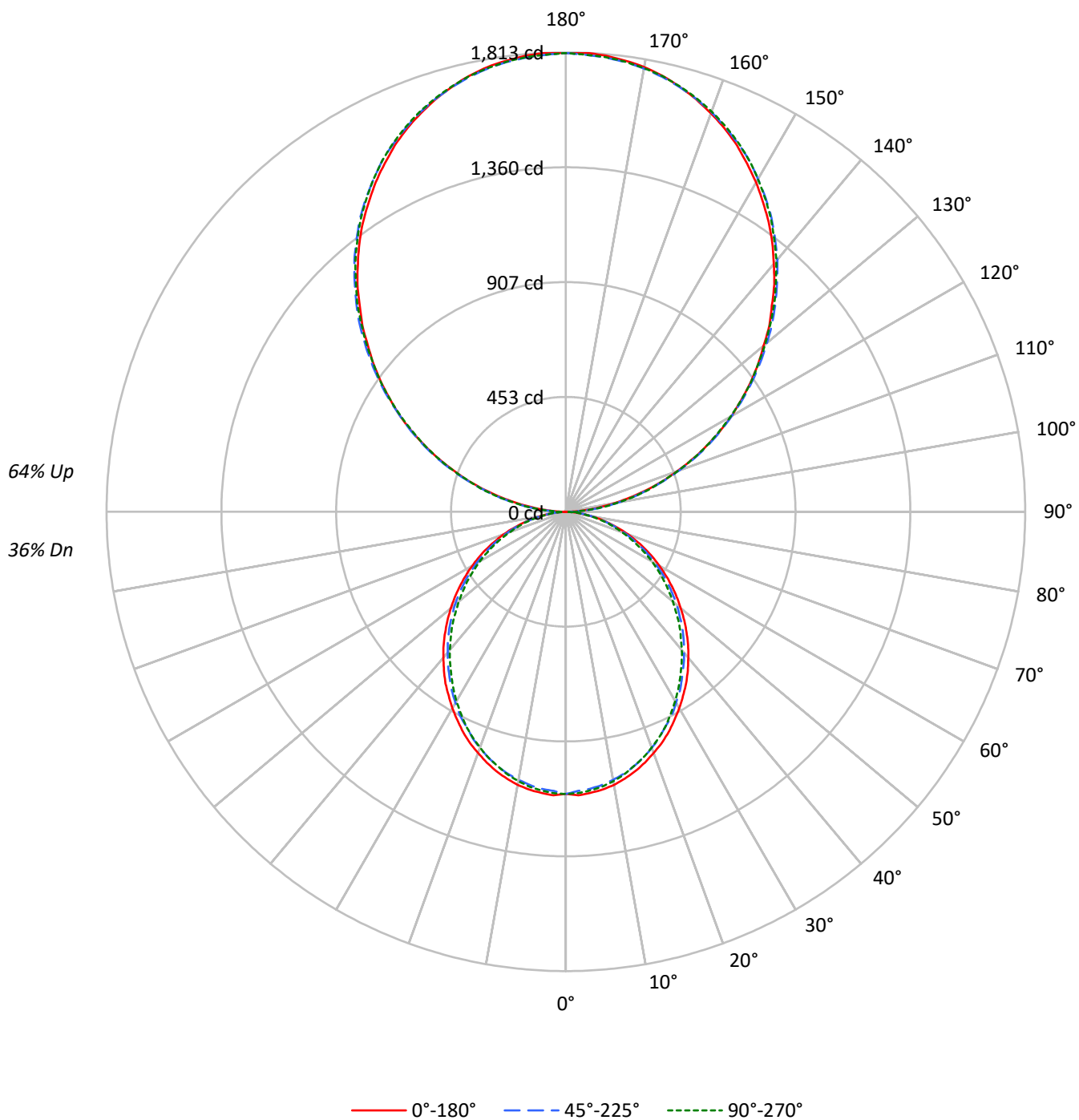
Lumens per Lamp: N/A
Luminaire Lumens: 7899.1 lumens
Efficiency: N/A
Efficacy: 113.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 69.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P924784

CATALOG NUMBER: DFN2DIP-PN3F0-030D060US950-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P924784

CATALOG NUMBER: DFN2DIP-PN3F0-030D060US950-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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	43	43	43
1	95	90	87	83	85	82	79	76	66	64	62	52	50	49	38	37	36
2	86	79	73	68	78	72	66	62	58	54	51	45	43	41	34	32	31
3	79	69	62	56	71	63	57	52	51	47	43	40	37	34	30	28	26
4	72	61	54	48	65	56	49	44	45	40	37	36	32	29	27	24	22
5	66	54	47	41	59	50	43	38	40	35	31	32	28	25	24	22	20
6	61	49	41	35	55	45	38	33	36	31	27	29	25	22	22	19	17
7	56	44	36	31	50	40	33	28	33	28	24	26	22	20	20	17	15
8	52	40	32	27	47	36	30	25	30	25	21	24	20	17	18	16	14
9	48	36	29	24	44	33	27	22	27	22	19	22	18	16	17	14	12
10	45	33	26	21	41	30	24	20	25	20	17	20	17	14	16	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1302	1302	1302
5°	1303	1283	1292
10°	1292	1265	1274
15°	1272	1243	1246
20°	1246	1213	1217
25°	1219	1177	1184
30°	1186	1144	1143
35°	1155	1105	1099
40°	1117	1066	1057
45°	1079	1027	1014
50°	1037	985	964
55°	993	937	918
60°	944	880	866
65°	890	821	804
70°	821	750	737
75°	725	663	675
80°	610	553	556
85°	431	366	363

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1792 cd/sqm

TEST NUMBER: P924784

CATALOG NUMBER: DFN2DIP-PN3F0-030D060US950-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.8	1.3
10°-20°	294.9	3.7
20°-30°	433.4	5.5
30°-40°	503.4	6.4
40°-50°	502.7	6.4
50°-60°	438.4	5.5
60°-70°	324.1	4.1
70°-80°	183.3	2.3
80°-90°	53.5	0.7
90°-100°	112.0	1.4
100°-110°	355.9	4.5
110°-120°	609.1	7.7
120°-130°	801.1	10.1
130°-140°	899.2	11.4
140°-150°	881.7	11.2
150°-160°	739.6	9.4
160°-170°	490.5	6.2
170°-180°	171.4	2.2
0°-30°	833.1	10.5
0°-40°	1336.5	16.9
0°-60°	2277.6	28.8
0°-90°	2838.5	35.9
90°-120°	1077.0	13.6
90°-150°	3659.0	46.3
90°-180°	5061.0	64.1
0°-180°	7899.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1114	1114	1114	1114	1114	
5°	1114	1109	1098	1106	1104	106
15°	1060	1054	1040	1044	1039	299
25°	959	951	933	935	933	441
35°	828	817	800	793	788	517
45°	674	666	650	638	634	520
55°	510	503	490	478	472	456
65°	344	337	327	317	312	340
75°	180	178	172	166	168	192
85°	44	43	42	38	38	49
90°	2	20	54	50	52	8
95°	80	95	98	98	95	89
105°	329	333	336	339	339	347
115°	611	620	617	616	611	605
125°	889	903	898	893	892	794
135°	1150	1167	1170	1168	1164	889
145°	1396	1407	1416	1417	1411	872
155°	1596	1601	1606	1613	1608	735
165°	1737	1735	1735	1746	1738	490
175°	1807	1803	1799	1810	1801	172
180°	1810	1810	1810	1810	1810	

TEST NUMBER: P924784

CATALOG NUMBER: DFN2DIP-PN3F0-030D060US950-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1113.6	1113.6	1113.6	1113.6	1113.6
2.5°	1120.1	1114.7	1102.9	1113.6	1111.6
5°	1113.6	1109.4	1097.6	1106.2	1104.1
7.5°	1106.2	1099.8	1087.9	1096.6	1094.4
10°	1094.4	1086.9	1074.1	1082.6	1079.5
12.5°	1078.3	1071.9	1059.1	1064.4	1062.3
15°	1060.1	1053.8	1039.8	1044.1	1038.7
17.5°	1037.6	1031.3	1017.3	1022.6	1017.3
20°	1013.0	1006.6	991.6	994.7	990.5
22.5°	988.4	978.8	964.8	964.8	962.6
25°	959.4	950.9	932.7	934.8	932.7
27.5°	927.3	919.8	905.9	902.8	897.4
30°	895.2	886.6	870.6	867.4	863.1
32.5°	861.0	854.6	837.4	830.9	826.6
35°	827.8	817.1	799.9	793.4	788.1
37.5°	790.3	780.7	763.5	755.9	750.6
40°	751.8	743.2	726.0	716.5	712.2
42.5°	714.3	705.7	688.6	677.8	671.4
45°	673.6	666.1	650.0	638.2	633.9
47.5°	633.9	626.5	609.3	597.5	591.1
50°	592.1	586.8	571.8	556.8	551.5
52.5°	551.5	544.0	530.1	518.3	510.8
55°	509.8	503.3	490.5	477.7	472.3
57.5°	467.9	462.6	448.7	435.8	431.5
60°	426.2	422.0	407.0	395.1	392.0
62.5°	385.5	378.0	367.3	356.6	352.3
65°	343.8	337.3	326.6	317.0	311.7
67.5°	301.0	295.5	285.9	278.5	274.2
70°	261.3	257.0	247.4	239.8	235.6
72.5°	220.7	216.3	210.9	203.5	200.3
75°	179.8	177.8	172.4	166.0	168.2
77.5°	143.5	139.2	137.0	133.8	130.7
80°	107.1	106.0	103.8	100.6	98.5
82.5°	72.8	72.8	71.8	67.4	67.4
85°	43.9	42.8	41.8	38.5	37.5
87.5°	19.3	17.2	15.0	11.8	10.7
90°	1.6	19.7	53.5	50.2	51.8
92.5°	33.9	45.9	47.5	49.1	49.1
95°	79.7	94.9	97.7	97.7	94.9
97.5°	132.6	146.8	152.8	152.8	152.8
100°	193.8	206.3	210.6	210.6	209.0
102.5°	258.2	267.4	273.4	275.0	273.4
105°	328.6	332.9	336.2	339.0	339.0
107.5°	398.4	405.0	405.0	406.0	398.4
110°	466.1	474.8	474.8	474.8	470.4

TEST NUMBER: P924784

CATALOG NUMBER: DFN2DIP-PN3F0-030D060US950-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	539.2	548.5	546.8	542.4	539.2
115°	611.2	620.0	617.2	615.6	611.2
117.5°	682.8	694.8	687.1	682.8	678.4
120°	754.8	766.8	754.8	754.8	749.8
122.5°	820.2	835.5	827.9	823.6	820.2
125°	889.0	902.7	898.3	893.4	891.8
127.5°	956.2	973.1	967.1	960.6	956.2
130°	1019.0	1038.6	1035.9	1032.6	1026.6
132.5°	1089.4	1104.6	1105.7	1098.1	1093.7
135°	1150.0	1166.8	1170.1	1168.5	1164.1
137.5°	1217.6	1231.2	1234.0	1232.9	1226.4
140°	1277.1	1290.8	1298.4	1298.4	1292.4
142.5°	1338.2	1351.8	1356.2	1357.8	1351.8
145°	1396.1	1407.0	1415.7	1417.4	1411.3
147.5°	1447.9	1461.5	1468.1	1470.8	1464.8
150°	1501.4	1510.7	1516.7	1521.5	1516.7
152.5°	1548.8	1558.2	1565.8	1571.8	1565.8
155°	1596.3	1600.7	1605.6	1613.3	1608.3
157.5°	1637.3	1640.6	1643.3	1654.2	1646.6
160°	1673.9	1677.1	1678.8	1688.0	1681.5
162.5°	1707.7	1707.7	1709.3	1719.7	1712.0
165°	1736.6	1734.9	1734.9	1745.9	1738.3
167.5°	1762.8	1757.9	1757.9	1768.8	1761.2
170°	1782.5	1778.1	1776.4	1787.3	1778.1
172.5°	1796.1	1791.7	1790.1	1801.0	1791.7
175°	1807.0	1802.7	1799.3	1810.3	1801.0
177.5°	1813.0	1808.7	1805.3	1814.6	1805.3
180°	1810.3	1810.3	1810.3	1810.3	1810.3



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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	6.68	7.43	7.75	8.50	9.96	6.25	6.99	7.32	8.06	9.52
	3H	8.33	9.00	9.41	10.08	11.56	7.85	8.52	8.93	9.60	11.07
	4H	8.91	9.54	10.00	10.63	12.11	8.42	9.06	9.51	10.14	11.62
	6H	9.30	9.88	10.40	10.97	12.46	8.81	9.39	9.91	10.48	11.97
	8H	9.40	9.95	10.50	11.05	12.54	8.91	9.46	10.01	10.56	12.05
	12H	9.44	9.97	10.55	11.06	12.58	8.94	9.47	10.05	10.57	12.08
4H	2H	7.13	7.76	8.22	8.85	10.33	6.78	7.41	7.87	8.49	9.98
	3H	8.98	9.51	10.08	10.62	12.11	8.58	9.11	9.68	10.21	11.71
	4H	9.68	10.17	10.79	11.27	12.78	9.27	9.75	10.37	10.85	12.37
	6H	10.18	10.60	11.30	11.72	13.23	9.76	10.18	10.88	11.30	12.81
	8H	10.33	10.72	11.44	11.83	13.36	9.90	10.29	11.02	11.40	12.93
	12H	10.39	10.75	11.53	11.87	13.40	9.96	10.31	11.09	11.43	12.96
8H	4H	9.87	10.26	10.98	11.37	12.89	9.50	9.89	10.61	11.00	12.52
	6H	10.48	10.81	11.62	11.96	13.48	10.11	10.43	11.25	11.59	13.11
	8H	10.70	10.98	11.84	12.12	13.66	10.32	10.60	11.46	11.73	13.28
	12H	10.82	11.07	11.97	12.20	13.78	10.42	10.67	11.57	11.80	13.38
12H	4H	9.84	10.20	10.98	11.32	12.85	9.48	9.84	10.61	10.96	12.49
	6H	10.51	10.79	11.65	11.93	13.47	10.15	10.43	11.29	11.56	13.11
	8H	10.74	10.99	11.89	12.12	13.70	10.37	10.62	11.52	11.75	13.33