

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: P902960

Luminaire Tested: DFN2DIP-PN3F0-030D060US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902960
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-PN3F0-030D060US830-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

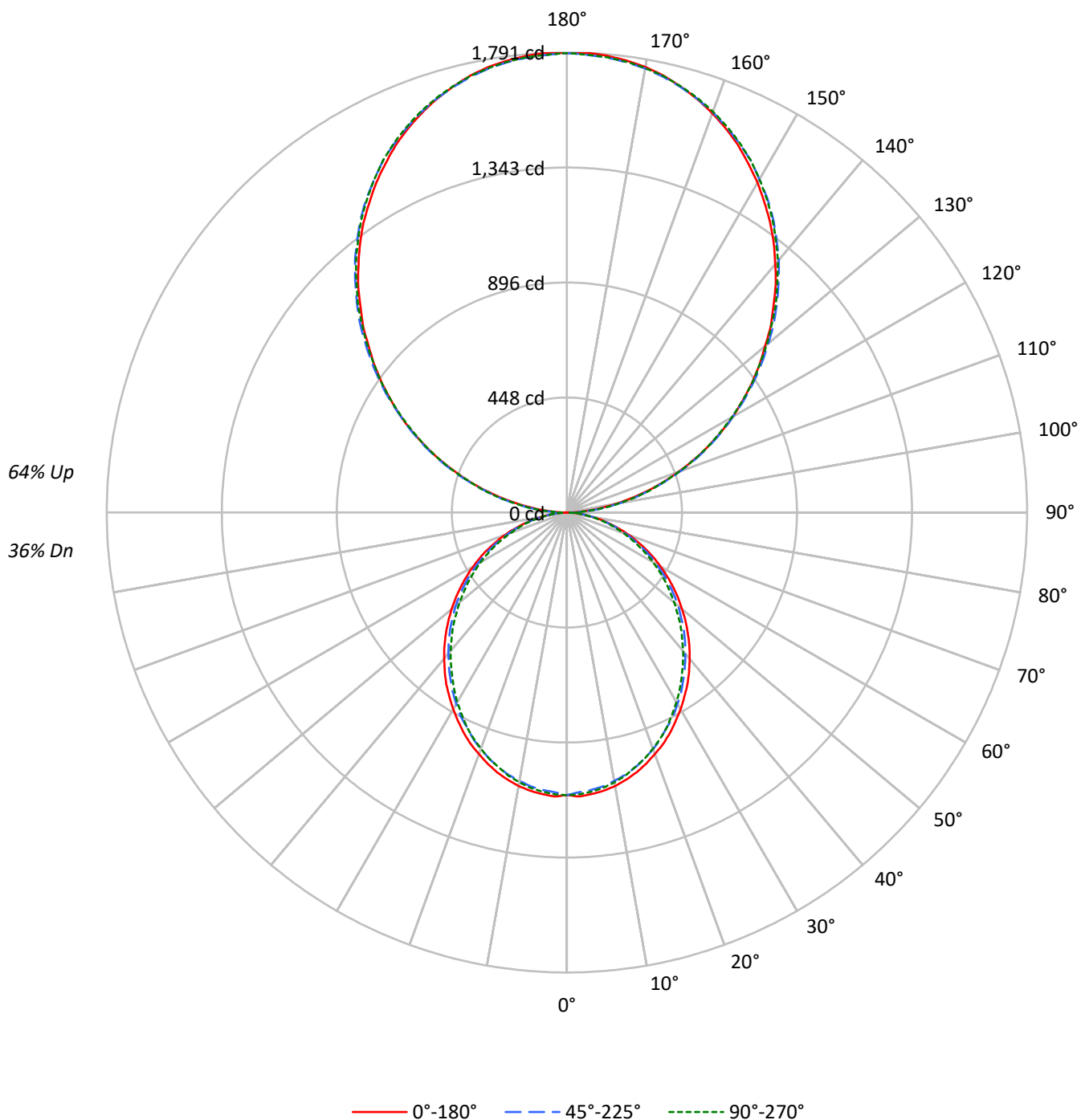
Lumens per Lamp: N/A
Luminaire Lumens: 7804.3 lumens
Efficiency: N/A
Efficacy: 111.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Indirect

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: P902960

CATALOG NUMBER: DFN2DIP-PN3F0-030D060US830-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902960

CATALOG NUMBER: DFN2DIP-PN3F0-030D060US830-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°	1286	1286	1286
5°	1287	1267	1276
10°	1276	1249	1258
15°	1257	1228	1231
20°	1231	1198	1203
25°	1205	1163	1170
30°	1172	1131	1129
35°	1141	1092	1085
40°	1104	1053	1044
45°	1066	1014	1002
50°	1025	973	953
55°	982	926	907
60°	932	870	855
65°	879	811	794
70°	811	740	728
75°	717	655	667
80°	602	546	550
85°	426	361	358

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1771 cd/sqm

TEST NUMBER: P902960

CATALOG NUMBER: DFN2DIP-PN3F0-030D060US830-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	1.3
10°-20°	291.4	3.7
20°-30°	428.2	5.5
30°-40°	497.3	6.4
40°-50°	496.7	6.4
50°-60°	433.1	5.5
60°-70°	320.2	4.1
70°-80°	181.1	2.3
80°-90°	52.9	0.7
90°-100°	110.7	1.4
100°-110°	351.6	4.5
110°-120°	601.8	7.7
120°-130°	791.4	10.1
130°-140°	888.4	11.4
140°-150°	871.1	11.2
150°-160°	730.8	9.4
160°-170°	484.6	6.2
170°-180°	169.4	2.2
0°-30°	823.1	10.5
0°-40°	1320.4	16.9
0°-60°	2250.3	28.8
0°-90°	2804.4	35.9
90°-120°	1064.1	13.6
90°-150°	3615.0	46.3
90°-180°	5000.0	64.1
0°-180°	7804.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1100	1100	1100	1100	1100	
5°	1100	1096	1084	1093	1091	104
15°	1047	1041	1027	1032	1026	295
25°	948	940	922	924	922	436
35°	818	807	790	784	779	511
45°	666	658	642	631	626	514
55°	504	497	485	472	467	450
65°	340	333	323	313	308	336
75°	178	176	170	164	166	190
85°	43	42	41	38	37	48
90°	2	19	53	50	51	8
95°	79	94	96	96	94	88
105°	325	329	332	335	335	343
115°	604	613	610	608	604	597
125°	878	892	888	883	881	785
135°	1136	1153	1156	1154	1150	878
145°	1379	1390	1399	1400	1394	862
155°	1577	1582	1586	1594	1589	726
165°	1716	1714	1714	1725	1717	484
175°	1785	1781	1778	1789	1779	170
180°	1789	1789	1789	1789	1789	

TEST NUMBER: P902960

CATALOG NUMBER: DFN2DIP-PN3F0-030D060US830-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1100.2	1100.2	1100.2	1100.2	1100.2
2.5°	1106.6	1101.4	1089.7	1100.2	1098.3
5°	1100.2	1096.1	1084.4	1092.9	1090.8
7.5°	1092.9	1086.6	1074.9	1083.5	1081.3
10°	1081.3	1073.8	1061.2	1069.6	1066.5
12.5°	1065.4	1059.0	1046.4	1051.6	1049.5
15°	1047.4	1041.1	1027.3	1031.5	1026.2
17.5°	1025.1	1018.9	1005.0	1010.3	1005.0
20°	1000.8	994.5	979.7	982.8	978.6
22.5°	976.6	967.0	953.2	953.2	951.0
25°	947.9	939.5	921.5	923.6	921.5
27.5°	916.2	908.7	895.0	891.9	886.6
30°	884.5	876.0	860.2	857.0	852.7
32.5°	850.6	844.3	827.4	821.0	816.7
35°	817.8	807.3	790.3	783.9	778.6
37.5°	780.8	771.3	754.3	746.9	741.6
40°	742.7	734.2	717.3	707.8	703.6
42.5°	705.7	697.2	680.3	669.7	663.4
45°	665.5	658.1	642.2	630.6	626.3
47.5°	626.3	619.0	602.0	590.3	584.0
50°	585.0	579.8	565.0	550.2	544.9
52.5°	544.9	537.4	523.8	512.1	504.6
55°	503.7	497.3	484.6	471.9	466.7
57.5°	462.3	457.0	443.3	430.6	426.3
60°	421.0	416.9	402.1	390.4	387.3
62.5°	380.9	373.4	362.9	352.3	348.1
65°	339.7	333.3	322.7	313.2	307.9
67.5°	297.4	292.0	282.5	275.1	270.9
70°	258.2	253.9	244.4	237.0	232.8
72.5°	218.0	213.7	208.4	201.0	197.9
75°	177.7	175.7	170.3	164.0	166.2
77.5°	141.8	137.5	135.3	132.2	129.1
80°	105.8	104.7	102.5	99.4	97.4
82.5°	71.9	71.9	71.0	66.6	66.6
85°	43.4	42.3	41.3	38.1	37.0
87.5°	19.0	17.0	14.8	11.7	10.6
90°	1.6	19.4	52.9	49.6	51.2
92.5°	33.5	45.3	46.9	48.5	48.5
95°	78.7	93.8	96.5	96.5	93.8
97.5°	131.0	145.1	151.0	151.0	151.0
100°	191.4	203.8	208.1	208.1	206.5
102.5°	255.1	264.2	270.1	271.7	270.1
105°	324.6	328.9	332.2	334.9	334.9
107.5°	393.6	400.1	400.1	401.1	393.6
110°	460.5	469.1	469.1	469.1	464.8

TEST NUMBER: P902960

CATALOG NUMBER: DFN2DIP-PN3F0-030D060US830-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	532.7	541.9	540.3	535.9	532.7
115°	603.9	612.6	609.8	608.2	603.9
117.5°	674.6	686.5	678.8	674.6	670.2
120°	745.7	757.6	745.7	745.7	740.8
122.5°	810.4	825.5	817.9	813.7	810.4
125°	878.4	891.8	887.5	882.7	881.1
127.5°	944.7	961.4	955.5	949.0	944.7
130°	1006.7	1026.1	1023.4	1020.2	1014.3
132.5°	1076.3	1091.4	1092.4	1084.9	1080.5
135°	1136.1	1152.8	1156.0	1154.4	1150.1
137.5°	1203.0	1216.4	1219.2	1218.0	1211.6
140°	1261.8	1275.3	1282.8	1282.8	1276.9
142.5°	1322.1	1335.6	1339.9	1341.5	1335.6
145°	1379.3	1390.1	1398.7	1400.3	1394.4
147.5°	1430.5	1444.0	1450.5	1453.1	1447.2
150°	1483.4	1492.5	1498.5	1503.3	1498.5
152.5°	1530.2	1539.5	1547.0	1552.9	1547.0
155°	1577.2	1581.5	1586.3	1593.9	1589.0
157.5°	1617.6	1620.9	1623.5	1634.4	1626.8
160°	1653.8	1657.0	1658.6	1667.7	1661.3
162.5°	1687.2	1687.2	1688.8	1699.0	1691.5
165°	1715.7	1714.1	1714.1	1724.9	1717.4
167.5°	1741.6	1736.8	1736.8	1747.6	1740.0
170°	1761.0	1756.7	1755.1	1765.9	1756.7
172.5°	1774.5	1770.2	1768.6	1779.3	1770.2
175°	1785.3	1781.0	1777.7	1788.6	1779.3
177.5°	1791.2	1787.0	1783.7	1792.8	1783.7
180°	1788.6	1788.6	1788.6	1788.6	1788.6

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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	6.64	7.39	7.71	8.46	9.92	6.20	6.95	7.27	8.02	9.48
	3H	8.29	8.96	9.37	10.04	11.52	7.81	8.48	8.88	9.56	11.03
	4H	8.87	9.50	9.96	10.58	12.07	8.38	9.02	9.47	10.10	11.58
	6H	9.26	9.84	10.35	10.93	12.42	8.77	9.35	9.87	10.44	11.93
	8H	9.36	9.91	10.46	11.01	12.50	8.87	9.42	9.97	10.52	12.01
	12H	9.40	9.93	10.50	11.02	12.53	8.90	9.43	10.01	10.52	12.04
4H	2H	7.09	7.72	8.18	8.80	10.29	6.74	7.37	7.83	8.45	9.94
	3H	8.94	9.47	10.04	10.57	12.07	8.53	9.06	9.64	10.17	11.67
	4H	9.64	10.13	10.75	11.23	12.74	9.22	9.71	10.33	10.81	12.33
	6H	10.14	10.56	11.26	11.68	13.19	9.72	10.14	10.84	11.26	12.77
	8H	10.29	10.68	11.40	11.79	13.32	9.86	10.25	10.98	11.36	12.89
	12H	10.35	10.70	11.48	11.83	13.36	9.91	10.27	11.05	11.39	12.92
8H	4H	9.82	10.21	10.94	11.33	12.85	9.45	9.84	10.57	10.96	12.48
	6H	10.44	10.76	11.58	11.92	13.44	10.07	10.39	11.20	11.54	13.07
	8H	10.66	10.94	11.80	12.07	13.62	10.27	10.56	11.42	11.69	13.23
	12H	10.78	11.03	11.93	12.16	13.74	10.38	10.63	11.53	11.76	13.34
12H	4H	9.80	10.16	10.93	11.28	12.81	9.44	9.79	10.57	10.92	12.45
	6H	10.47	10.75	11.61	11.89	13.43	10.11	10.39	11.25	11.52	13.07
	8H	10.70	10.95	11.85	12.08	13.66	10.33	10.58	11.48	11.71	13.29