

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: P902192

Luminaire Tested: DFN2DIP-4P3F0-020D060US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902192
REPORT IS A COMBINATION OF REPORTS P899070 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D060US830-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

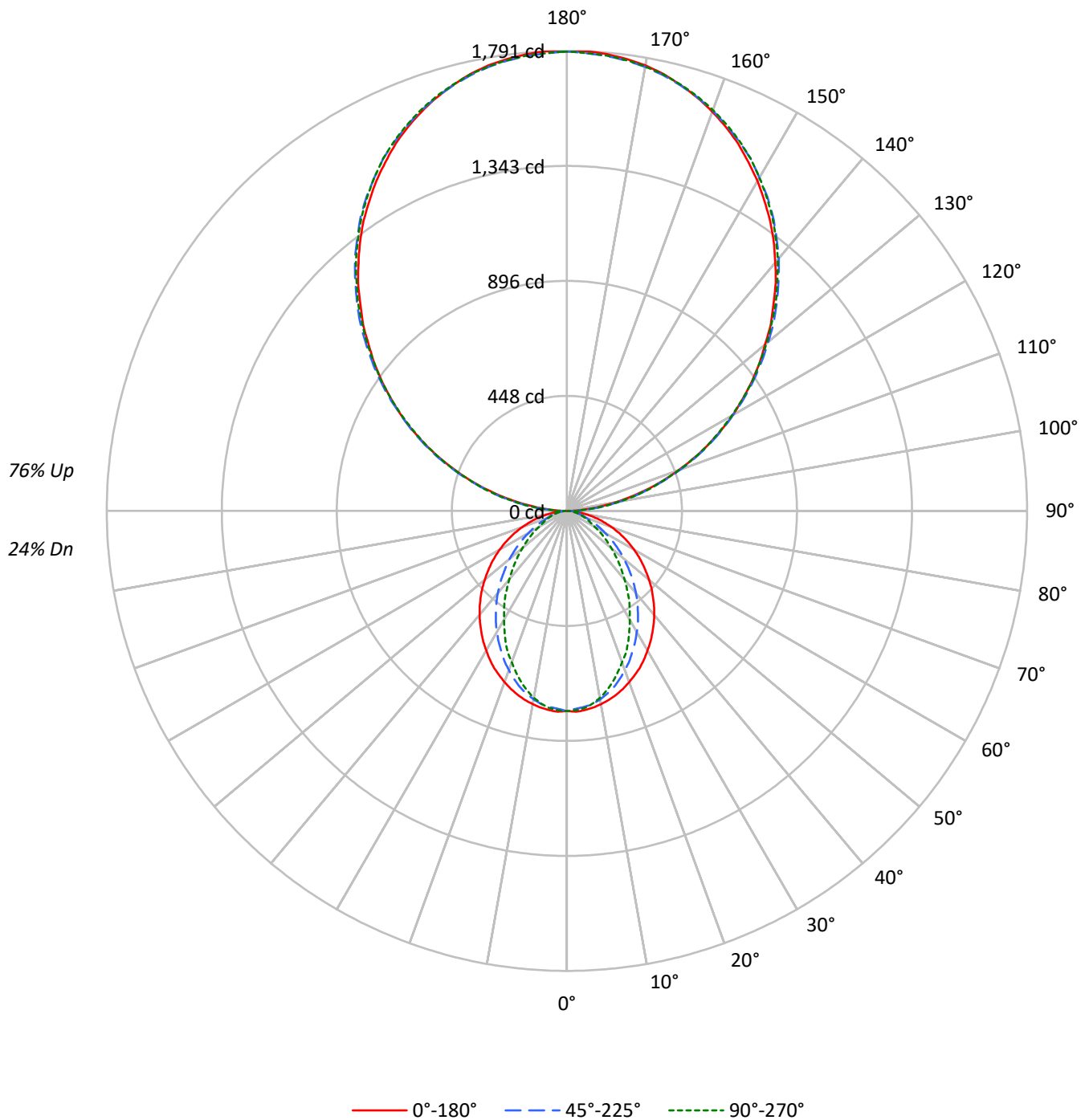
Lumens per Lamp: N/A
Luminaire Lumens: 6607.2 lumens
Efficiency: N/A
Efficacy: 105.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 62.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P902192

CATALOG NUMBER: DFN2DIP-4P3F0-020D060US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902192

CATALOG NUMBER: DFN2DIP-4P3F0-020D060US830-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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	33	33	33
1	92	88	85	81	82	79	76	73	61	59	57	44	43	42	29	28	28
2	84	77	71	67	75	69	64	60	53	50	47	39	37	35	26	25	24
3	77	68	61	56	68	61	55	50	47	43	40	35	32	30	23	22	20
4	70	60	53	47	62	54	48	43	42	38	34	31	28	26	21	19	18
5	64	54	46	40	57	48	42	37	38	33	29	28	25	22	19	17	16
6	59	48	40	35	53	43	37	32	34	29	26	25	22	20	17	15	14
7	55	43	36	30	49	39	32	28	31	26	23	23	20	17	16	14	12
8	51	39	32	27	45	35	29	24	28	23	20	21	18	16	14	12	11
9	47	36	29	24	42	32	26	22	25	21	18	19	16	14	13	11	10
10	44	33	26	21	39	29	23	19	23	19	16	18	15	13	12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	888	888	888
5°	889	873	879
10°	879	856	850
15°	867	827	806
20°	850	787	751
25°	833	743	699
30°	810	698	632
35°	788	649	573
40°	766	599	506
45°	740	543	446
50°	713	487	386
55°	684	427	329
60°	651	365	271
65°	613	301	243
70°	567	242	220
75°	509	212	199
80°	425	176	172
85°	289	115	128

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1793 cd/sqm

TEST NUMBER: P902192

CATALOG NUMBER: DFN2DIP-4P3F0-020D060US830-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.0	1.1
10°-20°	200.4	3.0
20°-30°	281.4	4.3
30°-40°	306.8	4.6
40°-50°	282.0	4.3
50°-60°	221.4	3.4
60°-70°	144.1	2.2
70°-80°	74.2	1.1
80°-90°	24.0	0.4
90°-100°	110.7	1.7
100°-110°	351.6	5.3
110°-120°	601.8	9.1
120°-130°	791.4	12.0
130°-140°	888.4	13.4
140°-150°	871.1	13.2
150°-160°	730.8	11.1
160°-170°	484.6	7.3
170°-180°	169.4	2.6
0°-30°	554.9	8.4
0°-40°	861.7	13.0
0°-60°	1365.1	20.7
0°-90°	1607.4	24.3
90°-120°	1064.1	16.1
90°-150°	3615.0	54.7
90°-180°	5000.0	75.7
0°-180°	6607.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	779	779	779	779	779	
5°	779	776	766	773	771	74
15°	741	733	709	696	689	209
25°	673	650	604	575	564	309
35°	580	544	482	437	422	363
45°	474	426	353	302	286	366
55°	360	305	229	187	173	322
65°	243	186	123	99	97	241
75°	130	80	56	52	51	137
85°	30	16	13	13	13	35
90°	2	19	53	50	51	7
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: P902192

CATALOG NUMBER: DFN2DIP-4P3F0-020D060US830-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	779.1	779.1	779.1	779.1	779.1
2.5°	782.6	779.1	771.3	778.4	777.0
5°	779.1	775.6	766.4	772.8	770.6
7.5°	772.8	768.5	758.7	761.5	757.9
10°	764.3	759.3	745.3	743.1	739.0
12.5°	753.8	747.3	728.3	724.2	716.3
15°	741.0	733.2	709.3	695.9	688.9
17.5°	726.2	714.9	685.3	669.8	658.6
20°	709.3	695.1	660.0	642.3	626.8
22.5°	691.0	674.8	633.9	609.9	599.4
25°	672.7	650.1	603.5	574.7	564.0
27.5°	650.8	626.8	575.3	542.2	525.9
30°	627.5	600.7	544.3	508.4	489.3
32.5°	604.9	572.5	514.7	472.4	454.8
35°	579.6	543.7	481.6	437.2	421.6
37.5°	554.9	516.0	450.5	401.9	384.3
40°	528.8	486.5	418.1	368.1	349.7
42.5°	502.0	456.9	385.7	333.5	315.9
45°	473.8	426.5	352.6	302.5	285.5
47.5°	447.0	397.0	320.8	270.7	255.2
50°	417.5	367.4	289.8	241.1	226.4
52.5°	388.4	335.5	260.1	213.7	200.3
55°	360.2	305.3	229.1	186.9	173.4
57.5°	331.4	274.9	201.7	162.2	150.9
60°	301.8	245.3	172.8	136.9	125.5
62.5°	272.9	216.5	148.1	114.2	108.6
65°	243.3	186.2	122.7	98.8	96.6
67.5°	215.1	157.9	98.8	86.7	84.6
70°	185.4	130.4	81.7	74.7	71.9
72.5°	157.2	105.0	68.3	62.8	61.4
75°	129.7	80.3	56.4	51.5	50.8
77.5°	102.3	57.1	44.4	41.6	40.2
80°	76.8	40.9	33.8	31.0	31.0
82.5°	53.5	27.5	23.3	21.9	21.9
85°	30.3	15.5	13.4	13.4	13.4
87.5°	11.3	5.7	5.7	4.9	4.9
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: P902192

CATALOG NUMBER: DFN2DIP-4P3F0-020D060US830-RLLFLL

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

TEST NUMBER: P902192

CATALOG NUMBER: DFN2DIP-4P3F0-020D060US830-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	3.61	4.27	4.77	5.41	7.01	0.00	0.23	0.73	1.37	2.97
	3H	5.27	5.86	6.44	7.01	8.62	0.75	1.33	1.91	2.48	4.09
	4H	5.87	6.43	7.04	7.58	9.19	1.18	1.74	2.35	2.89	4.51
	6H	6.28	6.79	7.46	7.94	9.57	1.49	2.00	2.67	3.15	4.78
	8H	6.40	6.89	7.58	8.05	9.67	1.57	2.06	2.75	3.22	4.84
	12H	6.45	6.92	7.64	8.07	9.72	1.61	2.07	2.79	3.23	4.87
4H	2H	3.61	4.17	4.79	5.31	6.93	0.15	0.71	1.33	1.85	3.47
	3H	5.42	5.88	6.60	7.05	8.68	1.47	1.94	2.66	3.11	4.74
	4H	6.10	6.53	7.28	7.69	9.33	2.01	2.44	3.19	3.60	5.25
	6H	6.60	6.97	7.79	8.15	9.79	2.41	2.78	3.60	3.96	5.60
	8H	6.77	7.11	7.96	8.28	9.94	2.54	2.88	3.72	4.05	5.71
	12H	6.85	7.16	8.06	8.35	10.01	2.59	2.90	3.79	4.08	5.74
8H	4H	6.05	6.39	7.24	7.57	9.22	2.28	2.62	3.46	3.79	5.45
	6H	6.61	6.89	7.81	8.10	9.76	2.78	3.06	3.98	4.28	5.93
	8H	6.82	7.06	8.03	8.26	9.93	2.96	3.21	4.18	4.40	6.07
	12H	6.95	7.16	8.16	8.35	10.06	3.07	3.29	4.28	4.48	6.18
12H	4H	6.00	6.31	7.20	7.49	9.15	2.27	2.58	3.47	3.77	5.42
	6H	6.58	6.83	7.79	8.02	9.69	2.83	3.07	4.04	4.26	5.94
	8H	6.79	7.00	8.00	8.20	9.90	3.02	3.24	4.24	4.43	6.13

END OF REPORT