

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: P904297

Luminaire Tested: DFN2DIP-TR2F0-030D060US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904297
REPORT IS A COMBINATION OF REPORTS P901783 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-030D060US830-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

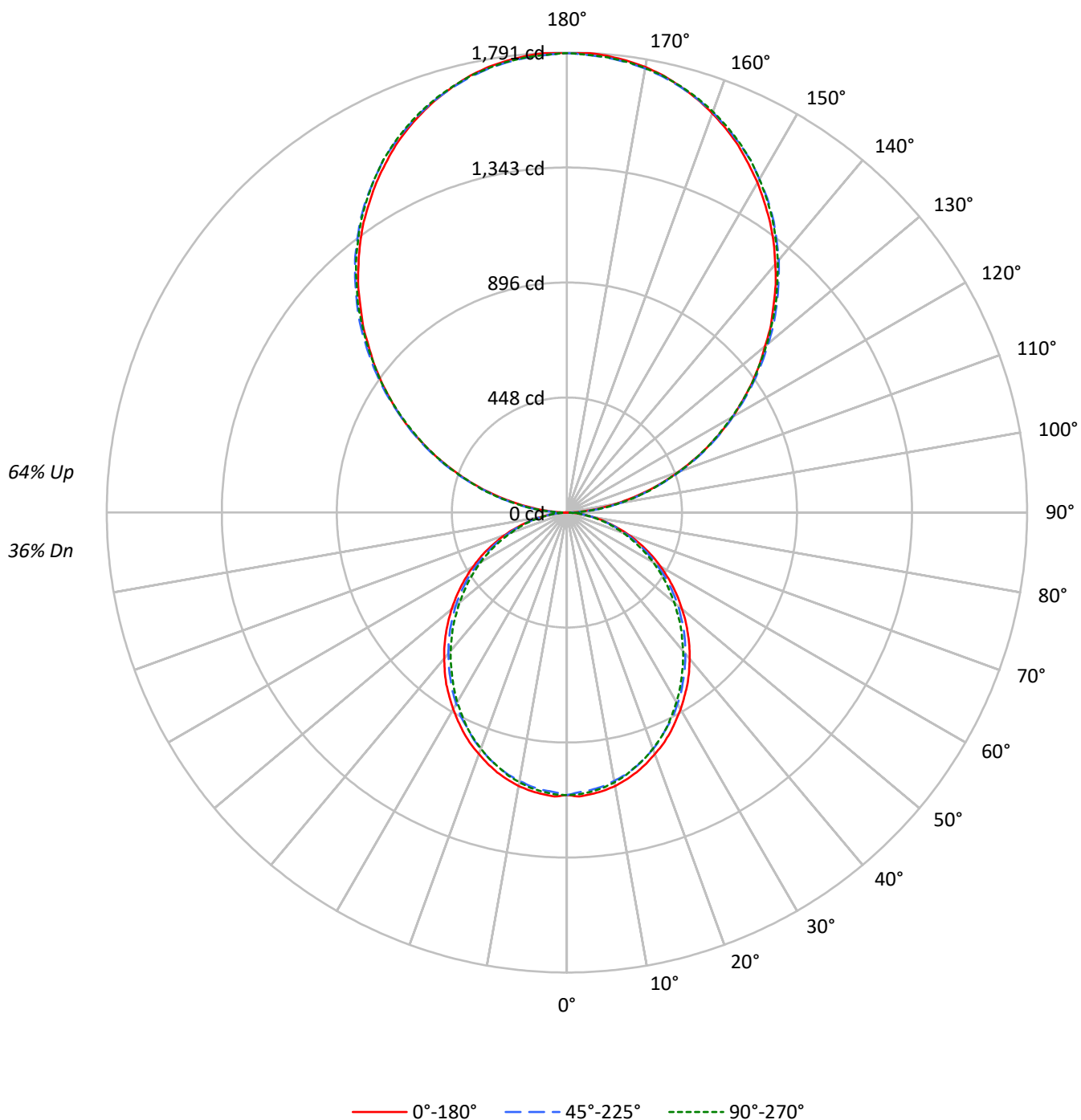
Lumens per Lamp: N/A
Luminaire Lumens: 7804.3 lumens
Efficiency: N/A
Efficacy: 106.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 73.6
Input Voltage (V): 120
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: P904297

CATALOG NUMBER: DFN2DIP-TR2F0-030D060US830-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P904297

CATALOG NUMBER: DFN2DIP-TR2F0-030D060US830-FLONL

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°	2454	2454	2454
5°	2454	2414	2432
10°	2431	2376	2395
15°	2391	2332	2339
20°	2339	2272	2282
25°	2288	2202	2217
30°	2224	2136	2136
35°	2163	2059	2050
40°	2088	1981	1968
45°	2014	1903	1883
50°	1932	1820	1787
55°	1847	1725	1696
60°	1750	1613	1593
65°	1644	1496	1471
70°	1508	1354	1338
75°	1322	1183	1211
80°	1096	964	979
85°	748	608	607

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2334 cd/sqm

TEST NUMBER: P904297

CATALOG NUMBER: DFN2DIP-TR2F0-030D060US830-FLLONL

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: P904297

CATALOG NUMBER: DFN2DIP-TR2F0-030D060US830-FLLONL

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: P904297

CATALOG NUMBER: DFN2DIP-TR2F0-030D060US830-FLLONL

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: P904297

CATALOG NUMBER: DFN2DIP-TR2F0-030D060US830-FLLONL

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	8.80	9.55	9.87	10.62	12.08	8.37	9.12	9.44	10.19	11.65
	3H	10.43	11.10	11.50	12.18	13.65	9.97	10.64	11.04	11.72	13.19
	4H	10.99	11.63	12.08	12.71	14.19	10.53	11.17	11.62	12.25	13.73
	6H	11.37	11.95	12.47	13.04	14.53	10.91	11.49	12.01	12.58	14.07
	8H	11.46	12.02	12.56	13.12	14.61	11.00	11.56	12.11	12.66	14.15
	12H	11.50	12.03	12.60	13.12	14.63	11.03	11.56	12.14	12.66	14.17
4H	2H	9.24	9.87	10.33	10.95	12.44	8.90	9.53	9.99	10.61	12.10
	3H	11.06	11.59	12.17	12.70	14.20	10.68	11.21	11.78	12.32	13.82
	4H	11.76	12.24	12.86	13.34	14.86	11.36	11.85	12.47	12.95	14.46
	6H	12.24	12.66	13.36	13.78	15.29	11.85	12.26	12.96	13.39	14.89
	8H	12.38	12.77	13.49	13.88	15.41	11.98	12.37	13.10	13.48	15.01
	12H	12.43	12.79	13.57	13.91	15.44	12.03	12.38	13.16	13.51	15.04
8H	4H	11.93	12.32	13.05	13.44	14.96	11.58	11.97	12.70	13.08	14.61
	6H	12.53	12.85	13.67	14.01	15.53	12.18	12.50	13.32	13.66	15.18
	8H	12.73	13.02	13.88	14.15	15.69	12.38	12.66	13.52	13.80	15.34
	12H	12.85	13.09	13.99	14.23	15.80	12.48	12.72	13.62	13.86	15.43
12H	4H	11.91	12.26	13.04	13.39	14.92	11.57	11.92	12.70	13.05	14.58
	6H	12.56	12.84	13.70	13.97	15.52	12.21	12.50	13.36	13.63	15.17
	8H	12.77	13.02	13.92	14.15	15.73	12.43	12.68	13.58	13.81	15.39