

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: P904359

Luminaire Tested: DFN2DIP-TR2F0-060D060US830-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904359
REPORT IS A COMBINATION OF REPORTS P901790 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-060D060US830-RLLONL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

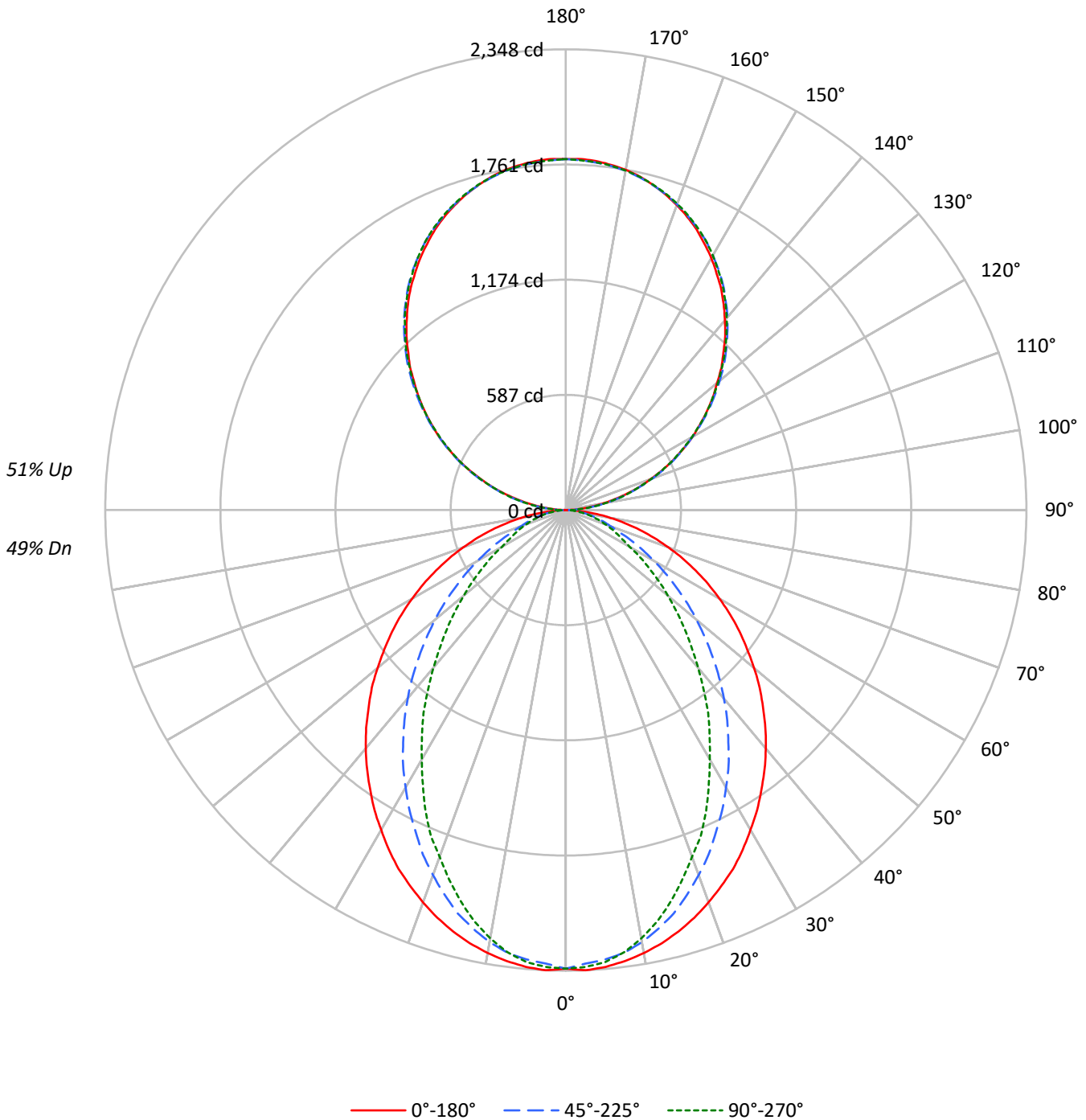
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9811.8 lumens
Efficiency: N/A
Efficacy: 91.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 107.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20	
RC	80				70				50				30				10				0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55	49				49
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48	42				42
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41	36				36
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35	31				31
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31	27				27
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27	24				24
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24	21				21
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22	19				19
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20	17				17
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18	16				16
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16	14				14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5213	5213	5213
5°	5214	5119	5154
10°	5154	5007	4978
15°	5076	4830	4710
20°	4974	4591	4385
25°	4870	4326	4071
30°	4733	4054	3677
35°	4598	3764	3330
40°	4460	3464	2934
45°	4301	3134	2576
50°	4137	2801	2227
55°	3963	2447	1891
60°	3762	2079	1548
65°	3531	1707	1384
70°	3250	1358	1240
75°	2896	1175	1111
80°	2387	953	936
85°	1567	592	660

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4301 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.1	2.2
10°-20°	601.3	6.1
20°-30°	844.3	8.6
30°-40°	920.3	9.4
40°-50°	845.9	8.6
50°-60°	664.3	6.8
60°-70°	432.4	4.4
70°-80°	222.6	2.3
80°-90°	61.9	0.6
90°-100°	110.7	1.1
100°-110°	351.6	3.6
110°-120°	601.8	6.1
120°-130°	791.4	8.1
130°-140°	888.4	9.1
140°-150°	871.1	8.9
150°-160°	730.8	7.4
160°-170°	484.6	4.9
170°-180°	169.4	1.7
0°-30°	1664.7	17.0
0°-40°	2585.0	26.3
0°-60°	4095.1	41.7
0°-90°	4812.0	49.0
90°-120°	1064.1	10.8
90°-150°	3615.0	36.8
90°-180°	5000.0	51.0
0°-180°	9811.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2337	2337	2337	2337	2337	
5°	2337	2327	2299	2318	2312	222
15°	2223	2200	2128	2088	2067	626
25°	2018	1950	1811	1724	1692	928
35°	1739	1631	1445	1312	1265	1088
45°	1421	1280	1058	907	857	1098
55°	1081	916	687	561	520	966
65°	730	558	368	296	290	724
75°	389	241	169	154	152	412
85°	91	46	40	40	40	104
90°	2	19	53	50	51	10
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: P904359

CATALOG NUMBER: DFN2DIP-TR2FO-060D060US830-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2337.3	2337.3	2337.3	2337.3	2337.3
2.5°	2347.9	2337.3	2313.9	2335.2	2331.0
5°	2337.3	2326.8	2299.1	2318.3	2312.0
7.5°	2318.3	2305.6	2276.1	2284.3	2273.8
10°	2292.8	2278.0	2235.9	2229.4	2216.8
12.5°	2261.3	2242.1	2184.9	2172.4	2149.0
15°	2223.1	2199.7	2127.9	2087.7	2066.6
17.5°	2178.7	2144.8	2055.9	2009.4	1975.6
20°	2127.9	2085.5	1979.8	1927.0	1880.4
22.5°	2072.9	2024.2	1901.5	1829.7	1798.0
25°	2018.0	1950.2	1810.6	1724.0	1692.1
27.5°	1952.5	1880.4	1726.0	1626.5	1577.9
30°	1882.6	1802.0	1632.9	1525.1	1467.9
32.5°	1814.9	1717.5	1544.3	1417.2	1364.2
35°	1738.8	1630.9	1444.8	1311.5	1264.8
37.5°	1664.7	1548.2	1351.7	1205.6	1152.8
40°	1586.4	1459.6	1254.2	1104.1	1049.1
42.5°	1506.1	1370.7	1157.1	1000.4	947.7
45°	1421.4	1279.6	1057.7	907.3	856.6
47.5°	1341.1	1191.0	962.5	812.2	765.7
50°	1252.3	1102.1	869.4	723.3	679.1
52.5°	1165.4	1006.7	780.5	640.9	600.8
55°	1080.8	915.9	687.4	560.6	520.4
57.5°	994.2	824.9	605.0	486.5	452.6
60°	905.3	736.1	518.2	410.5	376.5
62.5°	818.7	649.5	444.1	342.7	325.8
65°	729.8	558.4	368.1	296.2	289.7
67.5°	645.2	473.7	296.2	260.1	253.8
70°	556.3	391.3	245.2	224.2	215.7
72.5°	471.7	315.1	205.1	188.3	184.0
75°	389.2	241.0	169.2	154.4	152.4
77.5°	306.8	171.3	133.3	124.8	120.6
80°	230.5	122.7	101.4	93.1	93.1
82.5°	160.7	82.6	69.7	65.5	65.5
85°	90.9	46.5	40.2	40.2	40.2
87.5°	33.9	16.9	16.9	14.8	14.8
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



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CATALOG NUMBER: DFN2DIP-TR2FO-060D060US830-RLLONL

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	12.66	13.49	13.64	14.47	15.75	8.64	9.47	9.62	10.45	11.74
	3H	14.32	15.05	15.30	16.04	17.35	9.82	10.55	10.80	11.54	12.85
	4H	14.91	15.60	15.91	16.60	17.92	10.26	10.95	11.25	11.95	13.26
	6H	15.31	15.95	16.32	16.95	18.28	10.56	11.20	11.57	12.20	13.53
	8H	15.43	16.04	16.44	17.05	18.38	10.65	11.26	11.66	12.27	13.60
	12H	15.48	16.06	16.50	17.07	18.42	10.68	11.26	11.70	12.27	13.62
4H	2H	12.68	13.37	13.68	14.37	15.68	9.23	9.92	10.23	10.92	12.23
	3H	14.48	15.06	15.49	16.08	17.41	10.56	11.14	11.57	12.16	13.49
	4H	15.15	15.68	16.17	16.70	18.05	11.09	11.62	12.11	12.64	13.99
	6H	15.64	16.10	16.67	17.14	18.49	11.49	11.95	12.52	12.99	14.34
	8H	15.81	16.23	16.84	17.26	18.63	11.61	12.04	12.64	13.07	14.43
	12H	15.89	16.27	16.94	17.32	18.69	11.67	12.05	12.72	13.10	14.47
8H	4H	15.12	15.54	16.15	16.57	17.94	11.36	11.78	12.39	12.81	14.18
	6H	15.66	16.01	16.71	17.08	18.44	11.85	12.20	12.91	13.28	14.64
	8H	15.86	16.16	16.92	17.22	18.61	12.03	12.34	13.09	13.40	14.78
	12H	15.98	16.25	17.04	17.30	18.73	12.14	12.41	13.20	13.46	14.89
12H	4H	15.07	15.45	16.11	16.50	17.87	11.36	11.74	12.41	12.79	14.16
	6H	15.63	15.94	16.69	17.00	18.38	11.90	12.20	12.96	13.26	14.65
	8H	15.83	16.10	16.90	17.16	18.58	12.09	12.36	13.16	13.42	14.84