

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: P904319

Luminaire Tested: DFN2DIP-TR2F0-040D060US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904319
REPORT IS A COMBINATION OF REPORTS P901786 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-040D060US830-RLLONL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

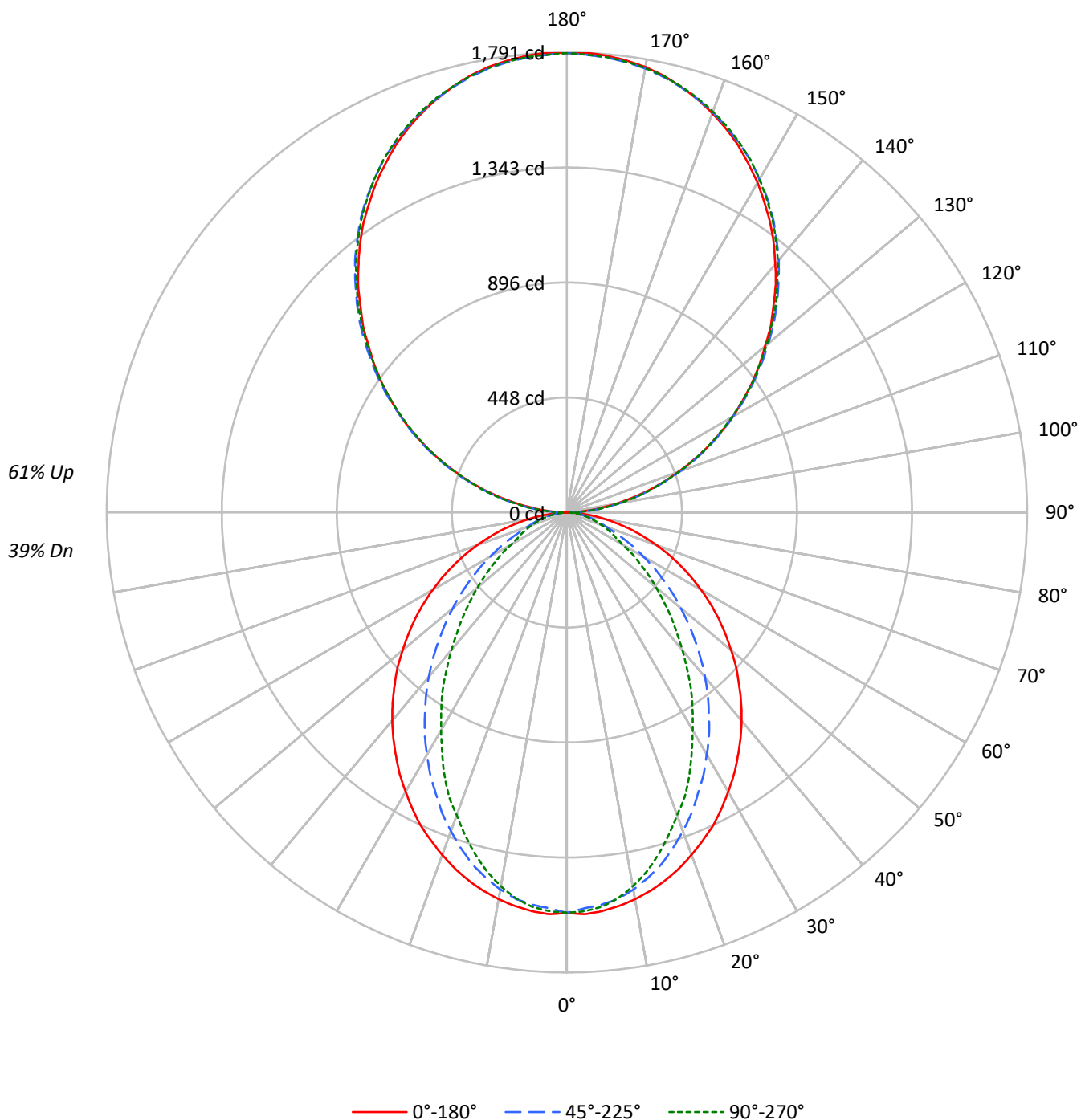
Lumens per Lamp: N/A
Luminaire Lumens: 8209.5 lumens
Efficiency: N/A
Efficacy: 97.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 84.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P904319

CATALOG NUMBER: DFN2DIP-TR2F0-040D060US830-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P904319

CATALOG NUMBER: DFN2DIP-TR2F0-040D060US830-RLLONL

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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46
1	96	92	88	85	87	83	80	78	68	66	64	54	53	51	41	40	40
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29
4	73	63	55	50	66	58	51	46	48	43	39	38	35	32	30	27	26
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	24	22
6	62	51	43	37	56	46	40	35	39	33	30	31	28	25	25	22	20
7	57	46	38	33	52	42	35	30	35	30	26	29	25	22	22	20	18
8	53	41	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3475	3475	3475
5°	3476	3413	3436
10°	3436	3338	3319
15°	3384	3220	3140
20°	3316	3061	2923
25°	3247	2884	2714
30°	3155	2703	2451
35°	3065	2509	2220
40°	2974	2310	1956
45°	2868	2089	1717
50°	2758	1868	1484
55°	2642	1632	1261
60°	2508	1386	1033
65°	2354	1137	922
70°	2167	906	826
75°	1930	783	740
80°	1591	636	624
85°	1045	395	440

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2868 cd/sqm

TEST NUMBER: P904319

CATALOG NUMBER: DFN2DIP-TR2F0-040D060US830-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	1.8
10°-20°	400.9	4.9
20°-30°	562.8	6.9
30°-40°	613.5	7.5
40°-50°	563.9	6.9
50°-60°	442.9	5.4
60°-70°	288.3	3.5
70°-80°	148.4	1.8
80°-90°	43.0	0.5
90°-100°	110.7	1.3
100°-110°	351.6	4.3
110°-120°	601.8	7.3
120°-130°	791.4	9.6
130°-140°	888.4	10.8
140°-150°	871.1	10.6
150°-160°	730.8	8.9
160°-170°	484.6	5.9
170°-180°	169.4	2.1
0°-30°	1109.8	13.5
0°-40°	1723.3	21.0
0°-60°	2730.1	33.3
0°-90°	3209.7	39.1
90°-120°	1064.1	13.0
90°-150°	3615.0	44.0
90°-180°	5000.0	60.9
0°-180°	8209.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1558	1558	1558	1558	1558	
5°	1558	1551	1533	1546	1541	148
15°	1482	1466	1419	1392	1378	418
25°	1345	1300	1207	1149	1128	619
35°	1159	1087	963	874	843	726
45°	948	853	705	605	571	732
55°	721	611	458	374	347	644
65°	486	372	245	198	193	482
75°	259	161	113	103	102	274
85°	61	31	27	27	27	70
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: P904319

CATALOG NUMBER: DFN2DIP-TR2F0-040D060US830-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1558.2	1558.2	1558.2	1558.2	1558.2
2.5°	1565.3	1558.2	1542.7	1556.9	1554.0
5°	1558.2	1551.1	1532.8	1545.5	1541.3
7.5°	1545.5	1537.1	1517.4	1522.9	1515.9
10°	1528.6	1518.7	1490.5	1486.2	1477.9
12.5°	1507.5	1494.8	1456.6	1448.2	1432.7
15°	1482.1	1466.5	1418.6	1391.9	1377.8
17.5°	1452.5	1429.8	1370.6	1339.6	1317.0
20°	1418.6	1390.3	1319.8	1284.7	1253.6
22.5°	1382.0	1349.5	1267.6	1219.7	1198.7
25°	1345.3	1300.1	1207.0	1149.3	1128.0
27.5°	1301.7	1253.6	1150.7	1084.4	1051.9
30°	1255.1	1201.4	1088.5	1016.7	978.6
32.5°	1209.9	1145.0	1029.4	944.8	909.5
35°	1159.2	1087.2	963.2	874.3	843.2
37.5°	1109.8	1032.2	901.1	803.7	768.5
40°	1057.6	973.1	836.2	736.1	699.5
42.5°	1004.0	913.8	771.4	666.9	631.8
45°	947.6	853.1	705.1	604.9	571.1
47.5°	894.1	794.0	641.7	541.5	510.5
50°	834.8	734.7	579.6	482.2	452.7
52.5°	776.9	671.2	520.4	427.3	400.5
55°	720.6	610.6	458.3	373.7	346.9
57.5°	662.8	550.0	403.3	324.3	301.8
60°	603.5	490.7	345.4	273.6	251.1
62.5°	545.8	433.0	296.1	228.5	217.3
65°	486.5	372.2	245.3	197.5	193.1
67.5°	430.2	315.8	197.5	173.4	169.2
70°	370.9	260.9	163.5	149.5	143.7
72.5°	314.5	210.1	136.8	125.5	122.7
75°	259.4	160.7	112.8	102.9	101.6
77.5°	204.5	114.1	88.9	83.2	80.3
80°	153.6	81.8	67.6	62.1	62.1
82.5°	107.2	55.0	46.6	43.6	43.6
85°	60.6	31.0	26.8	26.8	26.8
87.5°	22.6	11.2	11.2	9.9	9.9
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: P904319

CATALOG NUMBER: DFN2DIP-TR2F0-040D060US830-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

TEST NUMBER: P904319

CATALOG NUMBER: DFN2DIP-TR2F0-040D060US830-RLONL

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	10.23	10.98	11.29	12.03	13.46	6.21	6.96	7.27	8.01	9.44
	3H	11.88	12.55	12.94	13.61	15.05	7.38	8.05	8.44	9.11	10.55
	4H	12.47	13.10	13.54	14.17	15.61	7.82	8.45	8.89	9.51	10.96
	6H	12.87	13.45	13.95	14.52	15.98	8.12	8.70	9.20	9.77	11.23
	8H	12.98	13.54	14.07	14.62	16.07	8.20	8.76	9.29	9.84	11.29
	12H	13.03	13.56	14.12	14.63	16.11	8.23	8.76	9.32	9.84	11.31
4H	2H	10.24	10.87	11.32	11.93	13.38	6.79	7.42	7.87	8.48	9.93
	3H	12.03	12.56	13.12	13.65	15.11	8.11	8.64	9.20	9.73	11.19
	4H	12.70	13.19	13.79	14.27	15.75	8.64	9.13	9.73	10.21	11.69
	6H	13.19	13.61	14.29	14.71	16.18	9.04	9.45	10.14	10.56	12.03
	8H	13.35	13.74	14.45	14.83	16.32	9.16	9.54	10.26	10.64	12.13
	12H	13.43	13.78	14.55	14.89	16.38	9.21	9.56	10.33	10.67	12.16
8H	4H	12.66	13.05	13.76	14.14	15.63	8.90	9.29	10.00	10.38	11.87
	6H	13.20	13.52	14.32	14.66	16.14	9.40	9.71	10.52	10.85	12.34
	8H	13.40	13.68	14.53	14.80	16.30	9.57	9.85	10.70	10.97	12.48
	12H	13.52	13.76	14.65	14.88	16.42	9.68	9.92	10.81	11.04	12.58
12H	4H	12.61	12.96	13.72	14.07	15.56	8.90	9.25	10.02	10.36	11.85
	6H	13.17	13.45	14.30	14.57	16.08	9.44	9.72	10.57	10.84	12.34
	8H	13.37	13.62	14.50	14.73	16.28	9.63	9.88	10.76	10.99	12.54

END OF REPORT