

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: P909771

Luminaire Tested: DFN2DIP-TR2F0-040D050US840-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909771
REPORT IS A COMBINATION OF REPORTS P901776 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-040D050US840-RLLONL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

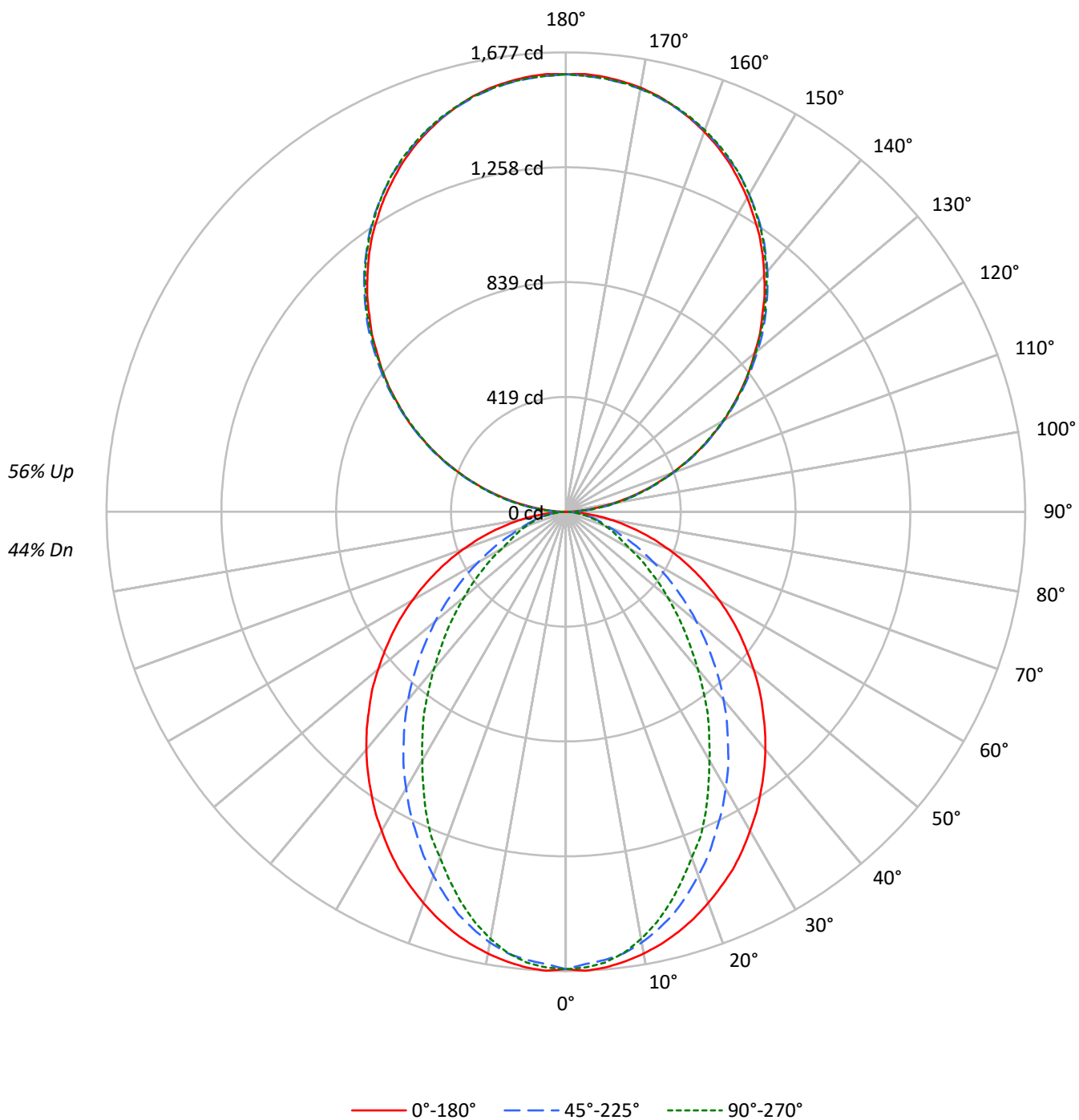
Lumens per Lamp: N/A
Luminaire Lumens: 7902.2 lumens
Efficiency: N/A
Efficacy: 106.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 74.5
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: P909771

CATALOG NUMBER: DFN2DIP-TR2F0-040D050US840-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P909771

CATALOG NUMBER: DFN2DIP-TR2F0-040D050US840-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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50
1	97	93	89	86	88	85	82	79	70	68	66	57	56	54	45	44	43
2	88	81	75	71	81	75	70	65	62	59	55	51	48	46	40	38	37
3	81	72	65	59	74	66	60	55	55	51	47	45	42	39	36	34	32
4	74	64	56	50	68	59	52	47	49	44	40	41	37	34	32	30	28
5	68	57	49	43	62	53	46	41	44	39	35	37	33	30	29	27	25
6	63	51	43	38	57	47	41	35	40	35	31	33	29	26	27	24	22
7	58	46	39	33	53	43	36	31	36	31	27	30	26	23	25	22	20
8	54	42	35	30	50	39	32	28	33	28	24	28	24	21	23	20	18
9	50	39	31	26	46	36	29	25	31	25	22	26	22	19	21	18	16
10	47	35	28	24	43	33	27	22	28	23	20	24	20	17	19	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3724	3724	3724
5°	3724	3656	3682
10°	3682	3576	3556
15°	3625	3450	3365
20°	3553	3279	3132
25°	3479	3090	2908
30°	3381	2896	2626
35°	3284	2688	2378
40°	3186	2475	2096
45°	3072	2239	1840
50°	2954	2001	1590
55°	2831	1748	1351
60°	2687	1485	1106
65°	2522	1219	988
70°	2321	970	885
75°	2068	840	794
80°	1705	681	670
85°	1119	423	471

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3072 cd/sqm

TEST NUMBER: P909771

CATALOG NUMBER: DFN2DIP-TR2F0-040D050US840-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.5	2.0
10°-20°	429.5	5.4
20°-30°	603.0	7.6
30°-40°	657.4	8.3
40°-50°	604.2	7.6
50°-60°	474.5	6.0
60°-70°	308.9	3.9
70°-80°	159.0	2.0
80°-90°	45.1	0.6
90°-100°	98.8	1.3
100°-110°	314.0	4.0
110°-120°	537.3	6.8
120°-130°	706.6	8.9
130°-140°	793.2	10.0
140°-150°	777.8	9.8
150°-160°	652.5	8.3
160°-170°	432.7	5.5
170°-180°	151.2	1.9
0°-30°	1189.0	15.0
0°-40°	1846.4	23.4
0°-60°	2925.1	37.0
0°-90°	3438.1	43.5
90°-120°	950.1	12.0
90°-150°	3227.7	40.8
90°-180°	4464.0	56.5
0°-180°	7902.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1670	1670	1670	1670	1670	
5°	1670	1662	1642	1656	1651	158
15°	1588	1571	1520	1491	1476	447
25°	1441	1393	1293	1231	1209	663
35°	1242	1165	1032	937	903	777
45°	1015	914	756	648	612	784
55°	772	654	491	400	372	690
65°	521	399	263	212	207	517
75°	278	172	121	110	109	294
85°	65	33	29	29	29	75
90°	1	17	47	44	46	8
95°	70	84	86	86	84	78
105°	290	294	297	299	299	306
115°	539	547	544	543	539	533
125°	784	796	792	788	787	701
135°	1014	1029	1032	1031	1027	784
145°	1232	1241	1249	1250	1245	769
155°	1408	1412	1416	1423	1419	648
165°	1532	1530	1530	1540	1533	432
175°	1594	1590	1587	1597	1589	151
180°	1597	1597	1597	1597	1597	

TEST NUMBER: P909771

CATALOG NUMBER: DFN2DIP-TR2F0-040D050US840-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1669.5	1669.5	1669.5	1669.5	1669.5
2.5°	1677.1	1669.5	1652.8	1668.1	1665.0
5°	1669.5	1661.9	1642.2	1655.9	1651.4
7.5°	1655.9	1646.9	1625.8	1631.6	1624.2
10°	1637.8	1627.2	1597.0	1592.4	1583.5
12.5°	1615.2	1601.5	1560.6	1551.7	1535.0
15°	1587.9	1571.2	1519.9	1491.3	1476.2
17.5°	1556.2	1532.0	1468.4	1435.3	1411.1
20°	1519.9	1489.7	1414.1	1376.4	1343.1
22.5°	1480.7	1445.9	1358.2	1306.9	1284.3
25°	1441.4	1393.0	1293.2	1231.4	1208.6
27.5°	1394.6	1343.1	1232.8	1161.9	1127.0
30°	1344.7	1287.2	1166.3	1089.3	1048.5
32.5°	1296.4	1226.8	1103.0	1012.3	974.4
35°	1242.0	1164.9	1032.0	936.8	903.4
37.5°	1189.1	1105.9	965.4	861.1	823.4
40°	1133.2	1042.6	896.0	788.7	749.4
42.5°	1075.7	979.1	826.5	714.6	676.9
45°	1015.3	914.0	755.5	648.1	611.9
47.5°	958.0	850.7	687.5	580.2	546.9
50°	894.4	787.2	621.0	516.6	485.0
52.5°	832.4	719.1	557.5	457.8	429.1
55°	772.0	654.2	491.0	400.4	371.7
57.5°	710.1	589.3	432.1	347.5	323.4
60°	646.6	525.7	370.1	293.2	269.0
62.5°	584.8	463.9	317.2	244.8	232.8
65°	521.3	398.8	262.9	211.6	206.9
67.5°	460.9	338.4	211.6	185.8	181.3
70°	397.4	279.5	175.2	160.2	154.0
72.5°	337.0	225.1	146.5	134.5	131.5
75°	277.9	172.2	120.9	110.3	108.9
77.5°	219.1	122.3	95.2	89.2	86.0
80°	164.6	87.7	72.4	66.6	66.6
82.5°	114.8	59.0	49.9	46.8	46.8
85°	64.9	33.2	28.7	28.7	28.7
87.5°	24.2	12.0	12.0	10.6	10.6
90°	1.4	17.4	47.2	44.3	45.7
92.5°	29.9	40.4	41.9	43.3	43.3
95°	70.3	83.8	86.1	86.1	83.8
97.5°	116.9	129.5	134.8	134.8	134.8
100°	170.9	182.0	185.8	185.8	184.4
102.5°	227.7	235.9	241.2	242.7	241.2
105°	289.8	293.7	296.6	298.9	298.9
107.5°	351.4	357.2	357.2	358.2	351.4
110°	411.1	418.9	418.9	418.9	415.0

TEST NUMBER: P909771

CATALOG NUMBER: DFN2DIP-TR2F0-040D050US840-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	475.6	483.8	482.4	478.6	475.6
115°	539.2	546.9	544.5	543.1	539.2
117.5°	602.3	612.9	606.1	602.3	598.4
120°	665.8	676.4	665.8	665.8	661.5
122.5°	723.6	737.1	730.3	726.5	723.6
125°	784.3	796.3	792.4	788.1	786.7
127.5°	843.4	858.4	853.1	847.3	843.4
130°	898.9	916.2	913.7	910.9	905.5
132.5°	961.0	974.4	975.4	968.7	964.8
135°	1014.4	1029.3	1032.2	1030.8	1026.9
137.5°	1074.1	1086.1	1088.5	1087.5	1081.8
140°	1126.5	1138.6	1145.3	1145.3	1140.0
142.5°	1180.4	1192.6	1196.4	1197.8	1192.6
145°	1231.5	1241.1	1248.8	1250.3	1245.0
147.5°	1277.3	1289.3	1295.1	1297.5	1292.1
150°	1324.4	1332.6	1337.9	1342.2	1337.9
152.5°	1366.3	1374.5	1381.2	1386.5	1381.2
155°	1408.2	1412.0	1416.3	1423.1	1418.8
157.5°	1444.3	1447.1	1449.6	1459.3	1452.5
160°	1476.5	1479.5	1480.9	1489.0	1483.3
162.5°	1506.4	1506.4	1507.8	1517.0	1510.3
165°	1532.0	1530.5	1530.5	1540.1	1533.4
167.5°	1555.0	1550.6	1550.6	1560.3	1553.6
170°	1572.4	1568.5	1567.1	1576.7	1568.5
172.5°	1584.4	1580.5	1579.1	1588.7	1580.5
175°	1594.1	1590.1	1587.3	1596.9	1588.7
177.5°	1599.3	1595.5	1592.6	1600.7	1592.6
180°	1596.9	1596.9	1596.9	1596.9	1596.9

TEST NUMBER: P909771

CATALOG NUMBER: DFN2DIP-TR2F0-040D050US840-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	10.95	11.73	11.96	12.75	14.11	6.93	7.71	7.95	8.73	10.09
	3H	12.60	13.29	13.62	14.32	15.71	8.10	8.79	9.13	9.83	11.21
	4H	13.19	13.85	14.23	14.88	16.27	8.53	9.19	9.57	10.23	11.62
	6H	13.59	14.19	14.64	15.23	16.63	8.84	9.45	9.89	10.48	11.89
	8H	13.70	14.28	14.76	15.33	16.73	8.92	9.50	9.98	10.55	11.95
	12H	13.75	14.30	14.81	15.35	16.77	8.96	9.50	10.02	10.55	11.97
4H	2H	10.95	11.62	12.00	12.65	14.04	7.50	8.16	8.55	9.20	10.59
	3H	12.75	13.30	13.81	14.36	15.77	8.83	9.38	9.89	10.44	11.85
	4H	13.42	13.93	14.48	14.98	16.41	9.36	9.87	10.42	10.92	12.35
	6H	13.91	14.35	14.98	15.42	16.84	9.76	10.20	10.83	11.27	12.69
	8H	14.08	14.48	15.15	15.55	16.98	9.88	10.29	10.95	11.35	12.79
	12H	14.16	14.52	15.24	15.60	17.04	9.94	10.30	11.02	11.38	12.82
8H	4H	13.38	13.79	14.45	14.86	16.29	9.63	10.03	10.70	11.10	12.53
	6H	13.92	14.26	15.02	15.37	16.80	10.12	10.45	11.21	11.56	13.00
	8H	14.12	14.42	15.22	15.51	16.96	10.30	10.59	11.40	11.68	13.14
	12H	14.24	14.50	15.35	15.59	17.08	10.40	10.66	11.51	11.75	13.24
12H	4H	13.33	13.70	14.42	14.78	16.22	9.63	9.99	10.71	11.07	12.51
	6H	13.90	14.19	15.00	15.28	16.74	10.16	10.46	11.26	11.55	13.00
	8H	14.10	14.36	15.20	15.44	16.94	10.36	10.61	11.46	11.70	13.20