

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: P909761

Luminaire Tested: DFN2DIP-TR2F0-040D030US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909761
REPORT IS A COMBINATION OF REPORTS P901755 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-040D030US840-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

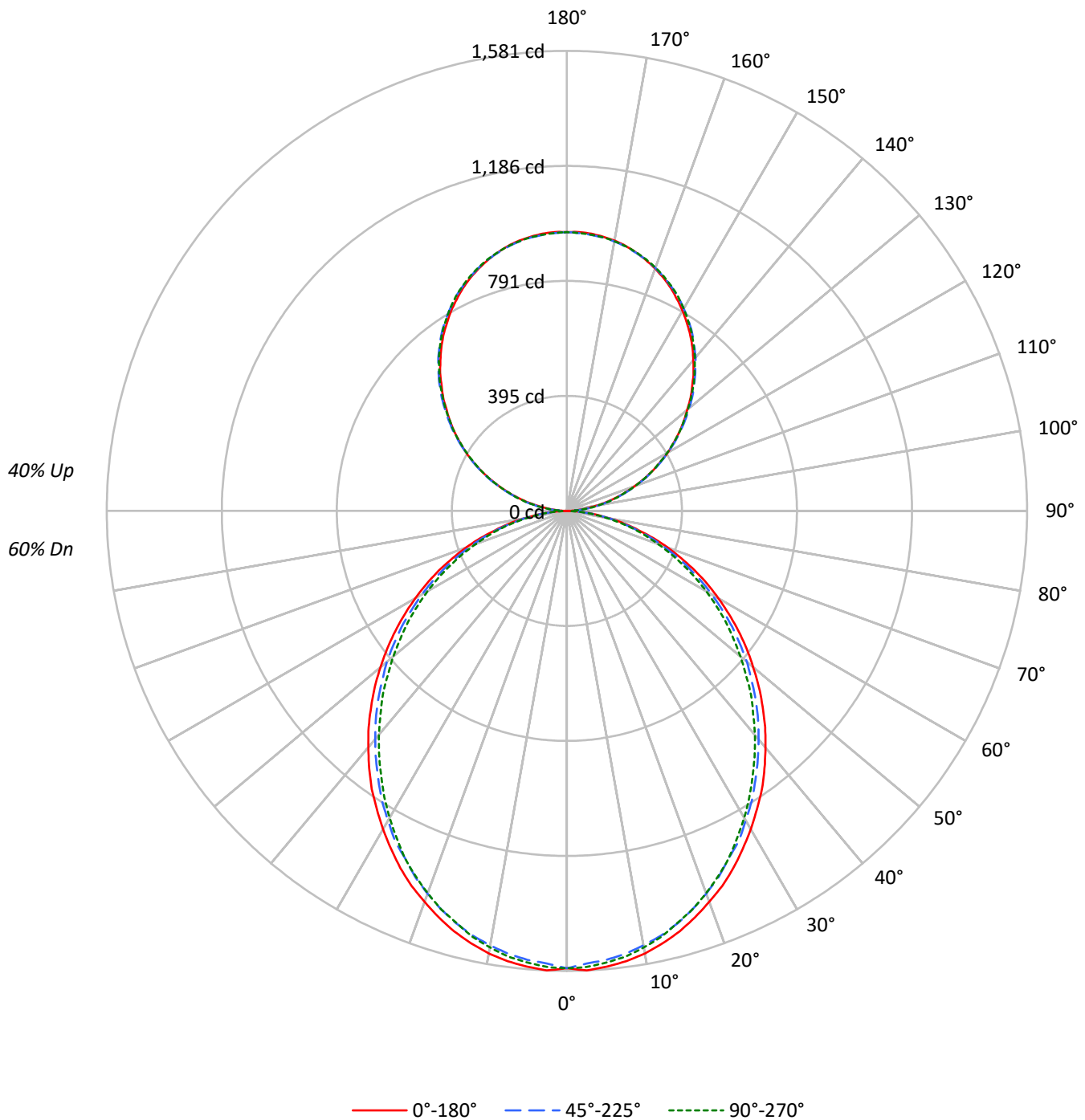
Lumens per Lamp: N/A
Luminaire Lumens: 6680.3 lumens
Efficiency: N/A
Efficacy: 115.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 57.8
Input Voltage (V): 120
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: P909761

CATALOG NUMBER: DFN2DIP-TR2F0-040D030US840-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P909761

CATALOG NUMBER: DFN2DIP-TR2F0-040D030US840-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	110	110	110	110	102	102	102	102	89	89	89	77	77	77	65	65	65
1	100	96	92	88	93	89	86	83	78	75	73	67	66	64	58	56	55
2	91	84	77	72	85	78	73	68	68	64	61	59	56	53	51	48	46
3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	45	42	40
4	76	65	57	51	71	61	54	48	54	48	43	47	42	39	40	37	34
5	70	58	50	44	65	55	47	42	48	42	38	42	37	34	36	33	30
6	64	52	44	38	60	49	42	36	43	37	33	38	33	29	33	29	26
7	60	47	39	33	56	44	37	32	39	33	29	35	30	26	30	26	23
8	55	43	35	30	52	40	33	28	36	30	26	32	27	23	28	24	21
9	52	39	32	26	48	37	30	25	33	27	23	29	24	21	26	22	19
10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	24	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3506	3506	3506
5°	3506	3449	3474
10°	3473	3395	3421
15°	3416	3331	3342
20°	3342	3246	3261
25°	3268	3145	3168
30°	3176	3051	3051
35°	3089	2941	2929
40°	2983	2830	2811
45°	2877	2718	2691
50°	2761	2601	2552
55°	2638	2465	2423
60°	2500	2305	2275
65°	2347	2137	2101
70°	2154	1934	1911
75°	1889	1690	1729
80°	1566	1378	1399
85°	1067	869	868

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2877 cd/sqm

TEST NUMBER: P909761

CATALOG NUMBER: DFN2DIP-TR2F0-040D030US840-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.9	2.2
10°-20°	416.2	6.2
20°-30°	611.7	9.2
30°-40°	710.5	10.6
40°-50°	709.6	10.6
50°-60°	618.7	9.3
60°-70°	457.4	6.8
70°-80°	258.8	3.9
80°-90°	71.0	1.1
90°-100°	59.3	0.9
100°-110°	188.4	2.8
110°-120°	322.4	4.8
120°-130°	424.0	6.3
130°-140°	475.9	7.1
140°-150°	466.7	7.0
150°-160°	391.5	5.9
160°-170°	259.6	3.9
170°-180°	90.7	1.4
0°-30°	1175.9	17.6
0°-40°	1886.3	28.2
0°-60°	3214.6	48.1
0°-90°	4001.8	59.9
90°-120°	570.1	8.5
90°-150°	1936.6	29.0
90°-180°	2678.0	40.1
0°-180°	6680.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1572	1572	1572	1572	1572	
5°	1572	1566	1549	1561	1558	149
15°	1496	1487	1468	1474	1466	421
25°	1354	1342	1316	1319	1316	623
35°	1168	1153	1129	1120	1112	730
45°	951	940	917	901	895	734
55°	720	710	692	674	667	643
65°	485	476	461	447	440	480
75°	254	251	243	234	237	271
85°	62	60	59	54	53	69
90°	1	10	28	27	28	6
95°	42	50	52	52	50	47
105°	174	176	178	179	179	184
115°	324	328	327	326	324	320
125°	471	478	475	473	472	420
135°	609	618	619	618	616	470
145°	739	745	749	750	747	462
155°	845	847	850	854	851	389
165°	919	918	918	924	920	259
175°	956	954	952	958	953	91
180°	958	958	958	958	958	

TEST NUMBER: P909761

CATALOG NUMBER: DFN2DIP-TR2F0-040D030US840-FLNL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1571.8	1571.8	1571.8	1571.8	1571.8
2.5°	1580.9	1573.4	1556.7	1571.8	1568.9
5°	1571.8	1565.8	1549.1	1561.2	1558.3
7.5°	1561.2	1552.2	1535.5	1547.7	1544.7
10°	1544.7	1534.1	1516.0	1528.0	1523.5
12.5°	1521.9	1512.9	1494.8	1502.4	1499.2
15°	1496.2	1487.2	1467.5	1473.6	1466.1
17.5°	1464.5	1455.5	1435.8	1443.3	1435.8
20°	1429.7	1420.7	1399.6	1404.0	1398.2
22.5°	1395.0	1381.4	1361.7	1361.7	1358.7
25°	1354.1	1342.1	1316.5	1319.4	1316.5
27.5°	1308.8	1298.2	1278.7	1274.1	1266.7
30°	1263.5	1251.4	1228.8	1224.3	1218.2
32.5°	1215.2	1206.2	1181.9	1172.9	1166.7
35°	1168.3	1153.3	1129.0	1119.9	1112.4
37.5°	1115.4	1101.8	1077.5	1067.0	1059.4
40°	1061.1	1048.8	1024.6	1011.2	1005.1
42.5°	1008.1	995.9	971.9	956.6	947.7
45°	950.7	940.2	917.4	900.9	894.7
47.5°	894.7	884.1	860.0	843.3	834.4
50°	835.8	828.2	807.1	785.9	778.3
52.5°	778.3	767.8	748.2	731.5	720.9
55°	719.5	710.3	692.3	674.1	666.6
57.5°	660.5	653.0	633.2	615.1	609.0
60°	601.5	595.5	574.4	557.7	553.2
62.5°	544.1	533.5	518.5	503.3	497.3
65°	485.2	476.1	461.0	447.4	439.9
67.5°	424.7	417.1	403.6	393.0	387.0
70°	368.8	362.7	349.1	338.5	332.5
72.5°	311.4	305.3	297.8	287.2	282.7
75°	253.9	251.0	243.3	234.3	237.3
77.5°	202.5	196.4	193.4	188.8	184.4
80°	151.2	149.6	146.5	142.1	139.1
82.5°	102.8	102.8	101.4	95.2	95.2
85°	61.9	60.5	59.0	54.3	52.9
87.5°	27.3	24.2	21.2	16.7	15.0
90°	0.9	10.4	28.3	26.6	27.5
92.5°	17.9	24.2	25.1	26.0	26.0
95°	42.2	50.3	51.7	51.7	50.3
97.5°	70.2	77.7	80.9	80.9	80.9
100°	102.5	109.2	111.5	111.5	110.7
102.5°	136.6	141.6	144.7	145.6	144.7
105°	173.9	176.2	177.9	179.4	179.4
107.5°	210.9	214.3	214.3	214.9	210.9
110°	246.7	251.4	251.4	251.4	249.0



TEST NUMBER: P909761

CATALOG NUMBER: DFN2DIP-TR2F0-040D030US840-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	285.4	290.3	289.4	287.1	285.4
115°	323.6	328.1	326.7	325.9	323.6
117.5°	361.3	367.7	363.7	361.3	359.0
120°	399.5	405.9	399.5	399.5	396.9
122.5°	434.1	442.2	438.2	435.9	434.1
125°	470.6	477.8	475.4	472.8	472.0
127.5°	506.0	515.0	511.9	508.4	506.0
130°	539.3	549.7	548.3	546.5	543.3
132.5°	576.5	584.6	585.2	581.2	578.9
135°	608.6	617.5	619.4	618.4	616.1
137.5°	644.4	651.7	653.1	652.6	649.0
140°	675.9	683.2	687.2	687.2	684.0
142.5°	708.3	715.5	717.8	718.7	715.5
145°	738.9	744.7	749.3	750.1	747.0
147.5°	766.4	773.6	777.0	778.5	775.3
150°	794.7	799.6	802.7	805.4	802.7
152.5°	819.8	824.7	828.7	831.9	828.7
155°	845.0	847.2	849.8	853.8	851.3
157.5°	866.6	868.3	869.8	875.6	871.5
160°	886.0	887.7	888.6	893.4	890.0
162.5°	903.8	903.8	904.7	910.2	906.2
165°	919.2	918.3	918.3	924.0	920.0
167.5°	933.0	930.4	930.4	936.1	932.1
170°	943.4	941.1	940.3	946.0	941.1
172.5°	950.6	948.4	947.5	953.2	948.4
175°	956.4	954.1	952.4	958.2	953.2
177.5°	959.6	957.3	955.5	960.5	955.5
180°	958.2	958.2	958.2	958.2	958.2

TEST NUMBER: P909761

CATALOG NUMBER: DFN2DIP-TR2F0-040D030US840-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	12.37	13.33	13.23	14.21	15.34	11.94	12.90	12.81	13.79	14.91
	3H	14.01	14.87	14.89	15.77	16.92	13.55	14.41	14.43	15.31	16.46
	4H	14.59	15.40	15.48	16.30	17.46	14.13	14.94	15.02	15.84	17.00
	6H	14.97	15.72	15.88	16.63	17.81	14.51	15.26	15.42	16.17	17.35
	8H	15.07	15.79	15.99	16.72	17.89	14.61	15.33	15.53	16.26	17.43
	12H	15.12	15.80	16.04	16.72	17.91	14.65	15.33	15.57	16.25	17.45
4H	2H	12.83	13.64	13.73	14.55	15.71	12.49	13.31	13.39	14.21	15.37
	3H	14.68	15.36	15.59	16.29	17.47	14.29	14.97	15.21	15.91	17.08
	4H	15.38	16.00	16.30	16.93	18.13	14.98	15.60	15.91	16.53	17.73
	6H	15.88	16.41	16.81	17.37	18.57	15.48	16.02	16.42	16.97	18.17
	8H	16.02	16.52	16.96	17.47	18.68	15.62	16.12	16.56	17.07	18.28
	12H	16.08	16.53	17.04	17.50	18.72	15.68	16.13	16.64	17.10	18.31
8H	4H	15.57	16.07	16.51	17.02	18.23	15.22	15.72	16.16	16.67	17.88
	6H	16.18	16.59	17.14	17.58	18.80	15.83	16.24	16.79	17.23	18.44
	8H	16.39	16.75	17.36	17.73	18.96	16.03	16.39	17.00	17.37	18.60
	12H	16.51	16.83	17.48	17.80	19.08	16.14	16.46	17.11	17.43	18.71
12H	4H	15.56	16.01	16.52	16.98	18.20	15.22	15.67	16.17	16.63	17.85
	6H	16.21	16.57	17.18	17.55	18.78	15.86	16.23	16.84	17.21	18.44
	8H	16.44	16.76	17.41	17.73	19.01	16.09	16.41	17.07	17.38	18.66