

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: P923409

Luminaire Tested: DFN2DIP-TR2F0-040D050US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923409
REPORT IS A COMBINATION OF REPORTS P901775 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-040D050US940-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

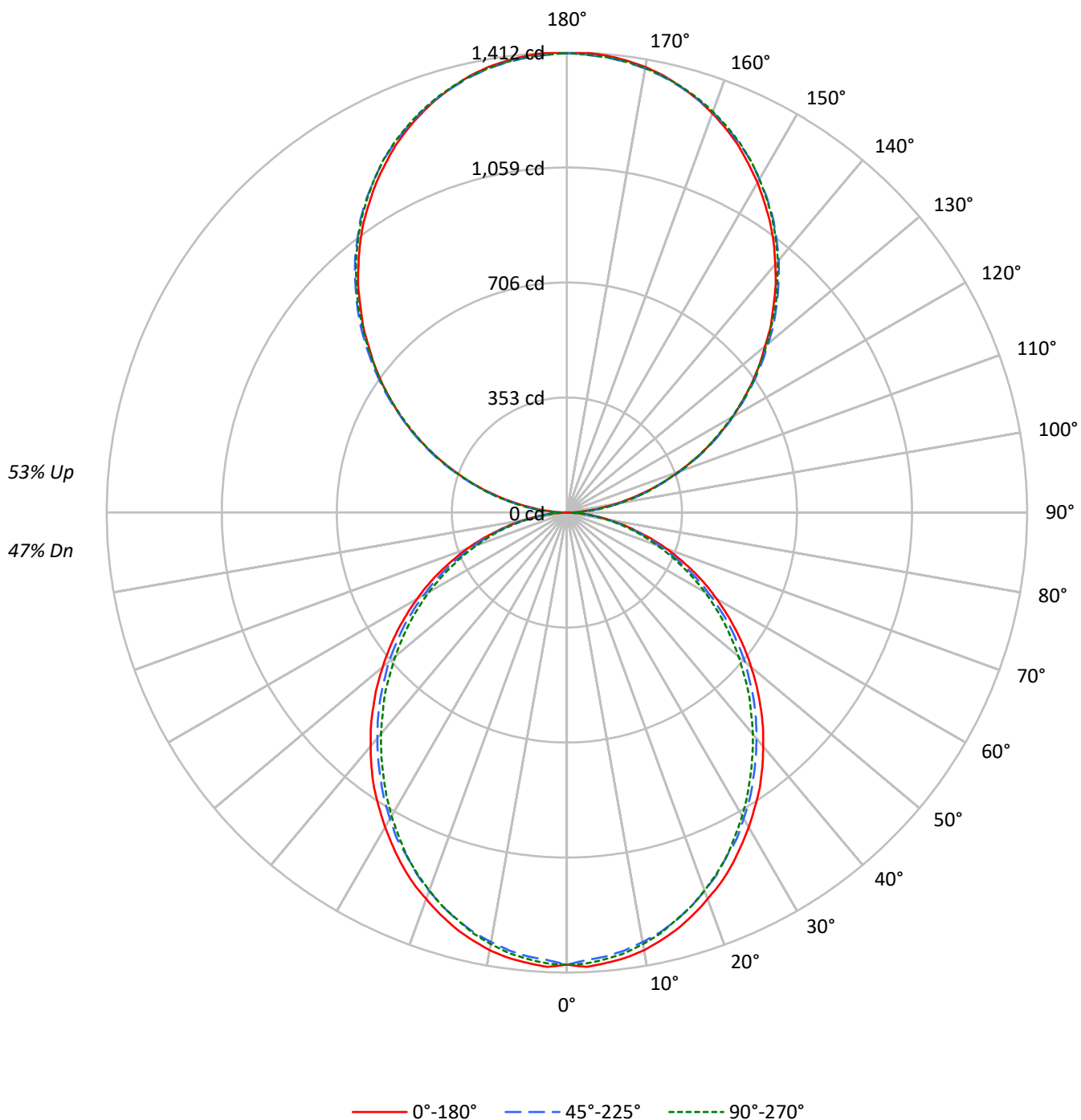
Lumens per Lamp: N/A
Luminaire Lumens: 7477.0 lumens
Efficiency: N/A
Efficacy: 100.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 74.5
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: P923409

CATALOG NUMBER: DFN2DIP-TR2F0-040D050US940-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P923409

CATALOG NUMBER: DFN2DIP-TR2F0-040D050US940-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	106	106	106	106	98	98	98	98	82	82	82	67	67	67	54	54	54
1	97	93	89	85	89	85	82	79	72	69	67	59	57	56	47	46	45
2	88	81	75	70	81	75	69	65	63	59	56	52	49	47	42	40	38
3	81	71	64	58	74	66	59	54	55	51	47	46	42	39	37	35	32
4	74	63	55	49	68	58	51	46	49	44	40	41	37	34	33	30	28
5	68	56	48	42	62	52	45	39	44	39	34	37	33	29	30	27	24
6	62	50	42	37	57	47	40	34	40	34	30	33	29	26	27	24	21
7	58	45	38	32	53	42	35	30	36	30	26	30	26	23	25	21	19
8	54	41	34	28	49	38	31	27	33	27	23	28	23	20	23	19	17
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15
10	47	35	27	23	43	32	26	21	28	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3096	3096	3096
5°	3096	3045	3068
10°	3066	2998	3021
15°	3017	2941	2951
20°	2951	2866	2879
25°	2886	2777	2797
30°	2805	2694	2694
35°	2728	2597	2586
40°	2634	2499	2482
45°	2540	2400	2376
50°	2438	2296	2253
55°	2330	2177	2139
60°	2207	2035	2009
65°	2073	1887	1855
70°	1903	1708	1688
75°	1668	1492	1527
80°	1383	1217	1235
85°	943	767	767

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2540 cd/sqm

TEST NUMBER: P923409

CATALOG NUMBER: DFN2DIP-TR2F0-040D050US940-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.6	1.7
10°-20°	367.5	4.9
20°-30°	540.1	7.2
30°-40°	627.3	8.4
40°-50°	626.6	8.4
50°-60°	546.3	7.3
60°-70°	403.9	5.4
70°-80°	228.5	3.1
80°-90°	64.3	0.9
90°-100°	87.3	1.2
100°-110°	277.2	3.7
110°-120°	474.5	6.3
120°-130°	624.0	8.3
130°-140°	700.4	9.4
140°-150°	686.8	9.2
150°-160°	576.1	7.7
160°-170°	382.1	5.1
170°-180°	133.5	1.8
0°-30°	1038.3	13.9
0°-40°	1665.6	22.3
0°-60°	2838.5	38.0
0°-90°	3535.2	47.3
90°-120°	838.9	11.2
90°-150°	2850.1	38.1
90°-180°	3942.0	52.7
0°-180°	7477.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1388	1388	1388	1388	1388	
5°	1388	1383	1368	1378	1376	132
15°	1321	1313	1296	1301	1295	372
25°	1196	1185	1162	1165	1162	550
35°	1032	1018	997	989	982	644
45°	840	830	810	796	790	648
55°	635	627	611	595	589	568
65°	428	420	407	395	388	424
75°	224	222	215	207	210	239
85°	55	53	52	48	47	61
90°	1	15	42	39	40	7
95°	62	74	76	76	74	69
105°	256	259	262	264	264	270
115°	476	483	481	480	476	471
125°	692	703	700	696	695	619
135°	896	909	911	910	907	692
145°	1087	1096	1103	1104	1099	679
155°	1243	1247	1251	1257	1253	572
165°	1353	1351	1351	1360	1354	382
175°	1408	1404	1402	1410	1403	134
180°	1410	1410	1410	1410	1410	

TEST NUMBER: P923409

CATALOG NUMBER: DFN2DIP-TR2F0-040D050US940-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1387.9	1387.9	1387.9	1387.9	1387.9
2.5°	1396.0	1389.3	1374.6	1387.9	1385.4
5°	1387.9	1382.6	1367.9	1378.5	1376.0
7.5°	1378.5	1370.6	1355.8	1366.6	1364.0
10°	1364.0	1354.6	1338.6	1349.2	1345.2
12.5°	1343.8	1335.9	1319.9	1326.6	1323.8
15°	1321.2	1313.2	1295.8	1301.2	1294.6
17.5°	1293.2	1285.2	1267.8	1274.4	1267.8
20°	1262.4	1254.5	1235.8	1239.7	1234.6
22.5°	1231.8	1219.8	1202.4	1202.4	1199.7
25°	1195.7	1185.1	1162.4	1165.0	1162.4
27.5°	1155.7	1146.3	1129.1	1125.1	1118.5
30°	1115.7	1105.0	1085.0	1081.0	1075.7
32.5°	1073.0	1065.1	1043.7	1035.6	1030.2
35°	1031.6	1018.3	996.9	988.9	982.2
37.5°	984.9	972.9	951.5	942.2	935.5
40°	936.9	926.1	904.7	892.9	887.5
42.5°	890.2	879.4	858.2	844.7	836.8
45°	839.5	830.2	810.0	795.5	790.1
47.5°	790.1	780.7	759.4	744.7	736.7
50°	738.0	731.3	712.7	693.9	687.2
52.5°	687.2	678.0	660.7	646.0	636.6
55°	635.3	627.2	611.3	595.2	588.6
57.5°	583.2	576.6	559.1	543.1	537.8
60°	531.1	525.8	507.2	492.5	488.5
62.5°	480.5	471.1	457.8	444.4	439.1
65°	428.5	420.4	407.1	395.0	388.4
67.5°	375.1	368.3	356.4	347.1	341.7
70°	325.7	320.3	308.3	298.9	293.6
72.5°	275.0	269.6	263.0	253.6	249.6
75°	224.2	221.6	214.8	206.9	209.6
77.5°	178.8	173.4	170.8	166.7	162.8
80°	133.5	132.1	129.4	125.5	122.8
82.5°	90.8	90.8	89.5	84.1	84.1
85°	54.7	53.4	52.1	48.0	46.7
87.5°	24.1	21.4	18.7	14.7	13.3
90°	1.2	15.3	41.6	39.1	40.4
92.5°	26.4	35.7	37.0	38.3	38.3
95°	62.1	74.0	76.1	76.1	74.0
97.5°	103.3	114.3	119.0	119.0	119.0
100°	150.9	160.7	164.1	164.1	162.8
102.5°	201.1	208.3	212.9	214.3	212.9
105°	255.9	259.3	261.9	263.9	263.9
107.5°	310.3	315.4	315.4	316.3	310.3
110°	363.0	369.9	369.9	369.9	366.4

TEST NUMBER: P923409

CATALOG NUMBER: DFN2DIP-TR2F0-040D050US940-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	420.0	427.2	426.0	422.6	420.0
115°	476.1	483.0	480.8	479.6	476.1
117.5°	531.8	541.2	535.2	531.8	528.4
120°	587.9	597.3	587.9	587.9	584.1
122.5°	638.9	650.9	644.9	641.5	638.9
125°	692.5	703.1	699.7	695.9	694.6
127.5°	744.8	758.0	753.3	748.1	744.8
130°	793.7	809.0	806.8	804.3	799.6
132.5°	848.6	860.4	861.3	855.3	851.9
135°	895.7	908.8	911.4	910.2	906.8
137.5°	948.4	959.0	961.2	960.3	955.2
140°	994.7	1005.4	1011.3	1011.3	1006.7
142.5°	1042.3	1053.0	1056.4	1057.7	1053.0
145°	1087.4	1095.9	1102.7	1104.0	1099.3
147.5°	1127.8	1138.4	1143.5	1145.7	1140.9
150°	1169.5	1176.7	1181.3	1185.2	1181.3
152.5°	1206.5	1213.7	1219.6	1224.3	1219.6
155°	1243.4	1246.8	1250.6	1256.6	1252.8
157.5°	1275.3	1277.8	1280.0	1288.5	1282.5
160°	1303.8	1306.4	1307.6	1314.8	1309.7
162.5°	1330.2	1330.2	1331.4	1339.5	1333.6
165°	1352.7	1351.4	1351.4	1359.9	1354.0
167.5°	1373.1	1369.2	1369.2	1377.8	1371.8
170°	1388.4	1385.0	1383.8	1392.2	1385.0
172.5°	1399.0	1395.6	1394.4	1402.8	1395.6
175°	1407.6	1404.1	1401.6	1410.1	1402.8
177.5°	1412.2	1408.8	1406.2	1413.5	1406.2
180°	1410.1	1410.1	1410.1	1410.1	1410.1

TEST NUMBER: P923409

CATALOG NUMBER: DFN2DIP-TR2F0-040D050US940-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	10.81	11.65	11.79	12.64	13.95	10.39	11.22	11.37	12.22	13.53
	3H	12.45	13.20	13.44	14.20	15.53	11.98	12.74	12.98	13.74	15.07
	4H	13.02	13.73	14.02	14.73	16.07	12.56	13.27	13.56	14.27	15.61
	6H	13.40	14.05	14.41	15.06	16.41	12.94	13.59	13.95	14.60	15.95
	8H	13.49	14.12	14.51	15.14	16.49	13.03	13.66	14.05	14.68	16.03
	12H	13.53	14.12	14.56	15.14	16.52	13.07	13.66	14.09	14.68	16.05
4H	2H	11.26	11.97	12.27	12.98	14.32	10.92	11.63	11.93	12.64	13.98
	3H	13.10	13.69	14.12	14.72	16.08	12.71	13.31	13.73	14.34	15.69
	4H	13.79	14.33	14.82	15.36	16.74	13.40	13.94	14.42	14.97	16.34
	6H	14.28	14.75	15.32	15.80	17.17	13.89	14.35	14.92	15.40	16.78
	8H	14.42	14.86	15.46	15.90	17.29	14.02	14.46	15.06	15.50	16.89
	12H	14.48	14.88	15.54	15.93	17.33	14.08	14.47	15.13	15.53	16.92
8H	4H	13.98	14.41	15.01	15.46	16.84	13.62	14.06	14.66	15.10	16.49
	6H	14.58	14.94	15.64	16.02	17.41	14.23	14.59	15.29	15.67	17.06
	8H	14.78	15.10	15.85	16.17	17.57	14.43	14.74	15.50	15.81	17.22
	12H	14.90	15.18	15.97	16.24	17.69	14.53	14.81	15.60	15.87	17.32
12H	4H	13.96	14.35	15.01	15.41	16.80	13.61	14.01	14.67	15.07	16.46
	6H	14.60	14.92	15.67	15.99	17.39	14.26	14.58	15.33	15.65	17.05
	8H	14.83	15.11	15.90	16.17	17.61	14.48	14.76	15.55	15.82	17.27