

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: P918228

Luminaire Tested: DFN2DIP-TR4F0-050D060US930-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918228
REPORT IS A COMBINATION OF REPORTS P900408 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D060US930-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

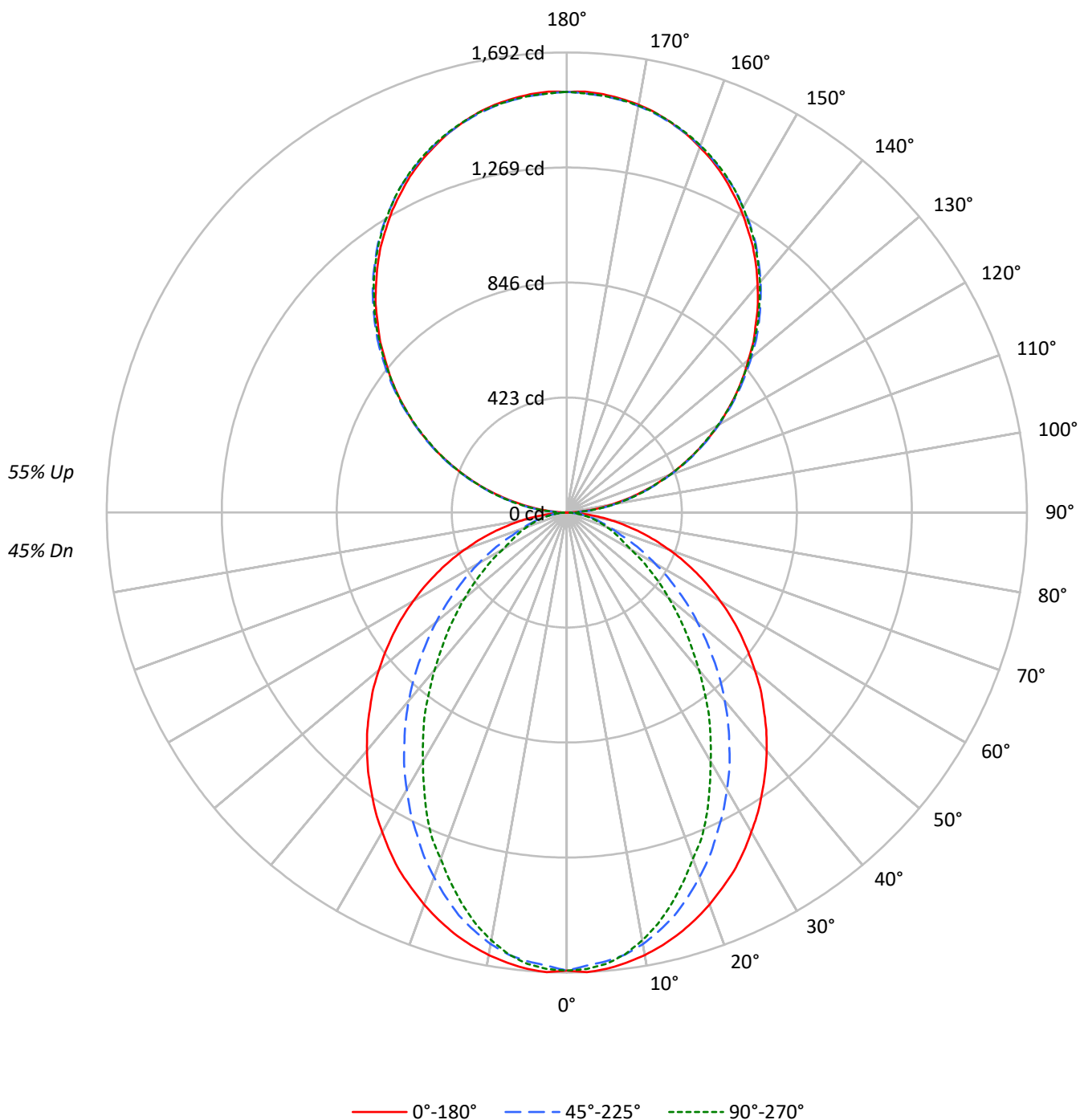
Lumens per Lamp: N/A
Luminaire Lumens: 7794.2 lumens
Efficiency: N/A
Efficacy: 89.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 86.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P918228

CATALOG NUMBER: DFN2DIP-TR4F0-050D060US930-RLLFLL

Luminous Intensity Polar Plot



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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	65	65	65	51	51	51
1	97	93	89	86	89	85	82	79	71	69	67	58	56	55	46	45	44
2	89	82	76	71	81	75	70	66	63	59	56	51	49	47	41	39	38
3	81	72	65	59	74	66	60	55	56	51	47	46	43	40	37	34	33
4	74	64	56	51	68	59	52	47	50	45	41	41	37	35	33	30	28
5	68	57	49	44	63	53	46	41	45	39	35	37	33	30	30	27	25
6	63	51	44	38	58	48	41	36	40	35	31	34	30	27	27	24	22
7	58	47	39	33	54	43	36	31	37	31	28	31	27	24	25	22	20
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18
9	51	39	31	27	46	36	29	25	31	26	22	26	22	19	21	18	16
10	47	36	29	24	43	33	27	23	28	23	20	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1338	1338	1338
5°	1341	1317	1326
10°	1327	1291	1282
15°	1309	1249	1216
20°	1285	1190	1134
25°	1260	1124	1055
30°	1227	1056	955
35°	1194	984	866
40°	1161	908	766
45°	1123	825	674
50°	1083	741	585
55°	1041	651	499
60°	993	556	410
65°	938	461	370
70°	871	371	334
75°	787	327	304
80°	665	274	263
85°	463	183	198

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1206 cd/sqm

TEST NUMBER: P918228

CATALOG NUMBER: DFN2DIP-TR4F0-050D060US930-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.9	2.0
10°-20°	433.5	5.6
20°-30°	608.6	7.8
30°-40°	663.4	8.5
40°-50°	609.7	7.8
50°-60°	478.8	6.1
60°-70°	311.7	4.0
70°-80°	160.4	2.1
80°-90°	45.3	0.6
90°-100°	95.7	1.2
100°-110°	304.2	3.9
110°-120°	520.6	6.7
120°-130°	684.6	8.8
130°-140°	768.4	9.9
140°-150°	753.5	9.7
150°-160°	632.1	8.1
160°-170°	419.2	5.4
170°-180°	146.5	1.9
0°-30°	1200.0	15.4
0°-40°	1863.4	23.9
0°-60°	2951.9	37.9
0°-90°	3469.4	44.5
90°-120°	920.5	11.8
90°-150°	3127.0	40.1
90°-180°	4325.0	55.5
0°-180°	7794.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1685	1685	1685	1685	1685	
5°	1685	1677	1657	1671	1667	160
15°	1602	1586	1534	1505	1490	452
25°	1455	1406	1305	1243	1220	669
35°	1253	1176	1042	945	912	784
45°	1025	922	762	654	617	791
55°	779	660	496	404	375	696
65°	526	402	265	214	209	521
75°	280	174	122	111	110	297
85°	66	34	29	29	29	75
90°	1	17	46	43	44	8
95°	68	81	84	84	81	76
105°	281	284	287	290	290	296
115°	522	530	528	526	522	517
125°	760	771	768	764	762	679
135°	983	997	1000	999	995	760
145°	1193	1202	1210	1211	1206	745
155°	1364	1368	1372	1379	1374	628
165°	1484	1483	1483	1492	1486	419
175°	1544	1541	1538	1547	1539	147
180°	1547	1547	1547	1547	1547	

TEST NUMBER: P918228

CATALOG NUMBER: DFN2DIP-TR4F0-050D060US930-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1684.8	1684.8	1684.8	1684.8	1684.8
2.5°	1692.4	1684.8	1668.0	1683.3	1680.2
5°	1684.8	1677.2	1657.3	1671.0	1666.6
7.5°	1671.0	1662.0	1640.6	1646.7	1639.0
10°	1652.8	1642.1	1611.7	1607.0	1597.9
12.5°	1629.9	1616.2	1575.0	1565.9	1549.1
15°	1602.5	1585.7	1533.9	1505.0	1489.7
17.5°	1570.4	1546.1	1482.0	1448.5	1424.0
20°	1533.9	1503.3	1427.1	1389.1	1355.4
22.5°	1494.3	1459.1	1370.7	1318.9	1296.1
25°	1454.6	1405.7	1305.1	1242.7	1219.7
27.5°	1407.4	1355.4	1244.1	1172.5	1137.4
30°	1357.1	1299.0	1177.0	1099.3	1058.1
32.5°	1308.2	1238.0	1113.1	1021.6	983.4
35°	1253.4	1175.6	1041.5	945.3	911.7
37.5°	1200.0	1116.1	974.4	869.0	831.0
40°	1143.5	1052.1	904.1	795.9	756.3
42.5°	1085.7	988.1	834.1	721.1	683.1
45°	1024.7	922.4	762.4	654.0	617.4
47.5°	966.7	858.5	693.8	585.5	552.0
50°	902.7	794.4	626.7	521.4	489.5
52.5°	840.1	725.7	562.6	462.0	433.1
55°	779.1	660.1	495.5	404.1	375.1
57.5°	716.6	594.7	436.1	350.7	326.3
60°	652.6	530.6	373.5	295.9	271.4
62.5°	590.1	468.1	320.2	247.0	234.9
65°	526.0	402.5	265.3	213.5	208.9
67.5°	465.0	341.5	213.5	187.5	183.0
70°	401.0	282.1	176.8	161.6	155.5
72.5°	340.1	227.1	147.9	135.7	132.6
75°	280.5	173.7	122.0	111.3	109.8
77.5°	221.1	123.4	96.1	89.9	86.8
80°	166.2	88.5	73.1	67.1	67.1
82.5°	115.9	59.5	50.3	47.2	47.2
85°	65.5	33.5	28.9	28.9	28.9
87.5°	24.5	12.1	12.1	10.7	10.7
90°	1.4	16.8	45.7	42.9	44.3
92.5°	28.9	39.2	40.6	42.0	42.0
95°	68.1	81.1	83.5	83.5	81.1
97.5°	113.3	125.5	130.6	130.6	130.6
100°	165.6	176.3	180.0	180.0	178.6
102.5°	220.6	228.5	233.7	235.1	233.7
105°	280.8	284.5	287.3	289.7	289.7
107.5°	340.5	346.1	346.1	347.0	340.5
110°	398.4	405.8	405.8	405.8	402.0

TEST NUMBER: P918228

CATALOG NUMBER: DFN2DIP-TR4F0-050D060US930-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	460.8	468.7	467.3	463.6	460.8
115°	522.4	529.9	527.5	526.1	522.4
117.5°	583.5	593.8	587.2	583.5	579.8
120°	645.1	655.3	645.1	645.1	640.8
122.5°	701.0	714.0	707.5	703.8	701.0
125°	759.8	771.4	767.7	763.5	762.1
127.5°	817.2	831.6	826.5	820.9	817.2
130°	870.8	887.6	885.3	882.5	877.3
132.5°	931.0	944.0	944.9	938.4	934.7
135°	982.8	997.2	1000.0	998.6	994.8
137.5°	1040.6	1052.2	1054.6	1053.6	1048.1
140°	1091.4	1103.1	1109.6	1109.6	1104.5
142.5°	1143.6	1155.3	1159.0	1160.4	1155.3
145°	1193.1	1202.4	1209.9	1211.3	1206.2
147.5°	1237.4	1249.0	1254.7	1256.9	1251.8
150°	1283.1	1291.0	1296.2	1300.3	1296.2
152.5°	1323.6	1331.6	1338.1	1343.3	1338.1
155°	1364.2	1368.0	1372.1	1378.8	1374.5
157.5°	1399.2	1402.1	1404.4	1413.7	1407.2
160°	1430.5	1433.3	1434.7	1442.6	1437.0
162.5°	1459.4	1459.4	1460.8	1469.7	1463.1
165°	1484.1	1482.7	1482.7	1492.1	1485.6
167.5°	1506.5	1502.4	1502.4	1511.6	1505.1
170°	1523.3	1519.6	1518.2	1527.5	1519.6
172.5°	1535.0	1531.2	1529.8	1539.1	1531.2
175°	1544.3	1540.6	1537.7	1547.1	1539.1
177.5°	1549.4	1545.7	1542.9	1550.8	1542.9
180°	1547.1	1547.1	1547.1	1547.1	1547.1

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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	7.62	8.41	8.63	9.42	10.77	3.59	4.38	4.60	5.39	6.74
	3H	9.29	10.00	10.31	11.02	12.39	4.78	5.48	5.80	6.51	7.88
	4H	9.90	10.56	10.93	11.59	12.97	5.23	5.89	6.26	6.92	8.30
	6H	10.32	10.93	11.36	11.96	13.35	5.55	6.16	6.59	7.19	8.58
	8H	10.44	11.03	11.49	12.07	13.46	5.64	6.22	6.68	7.27	8.65
	12H	10.50	11.06	11.55	12.10	13.51	5.68	6.23	6.73	7.27	8.68
4H	2H	7.63	8.30	8.67	9.32	10.70	4.18	4.85	5.22	5.87	7.25
	3H	9.46	10.01	10.50	11.06	12.46	5.53	6.08	6.57	7.14	8.53
	4H	10.15	10.65	11.20	11.70	13.11	6.08	6.58	7.13	7.63	9.04
	6H	10.66	11.09	11.72	12.16	13.57	6.49	6.93	7.56	8.00	9.41
	8H	10.83	11.24	11.90	12.30	13.73	6.62	7.03	7.68	8.09	9.51
	12H	10.93	11.29	12.01	12.37	13.80	6.68	7.05	7.76	8.13	9.56
8H	4H	10.11	10.52	11.17	11.58	13.00	6.35	6.76	7.42	7.82	9.24
	6H	10.68	11.01	11.76	12.11	13.54	6.87	7.20	7.96	8.31	9.73
	8H	10.89	11.19	11.98	12.27	13.71	7.06	7.36	8.15	8.44	9.88
	12H	11.03	11.29	12.12	12.37	13.85	7.18	7.44	8.27	8.52	10.00
12H	4H	10.06	10.43	11.14	11.50	12.93	6.36	6.72	7.44	7.80	9.23
	6H	10.65	10.95	11.74	12.03	13.47	6.92	7.21	8.01	8.30	9.74
	8H	10.87	11.13	11.97	12.21	13.69	7.13	7.39	8.22	8.47	9.95