

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: P921308

Luminaire Tested: DFN2DIP-4P3F0-030D060US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921308
REPORT IS A COMBINATION OF REPORTS P899072 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D060US940-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

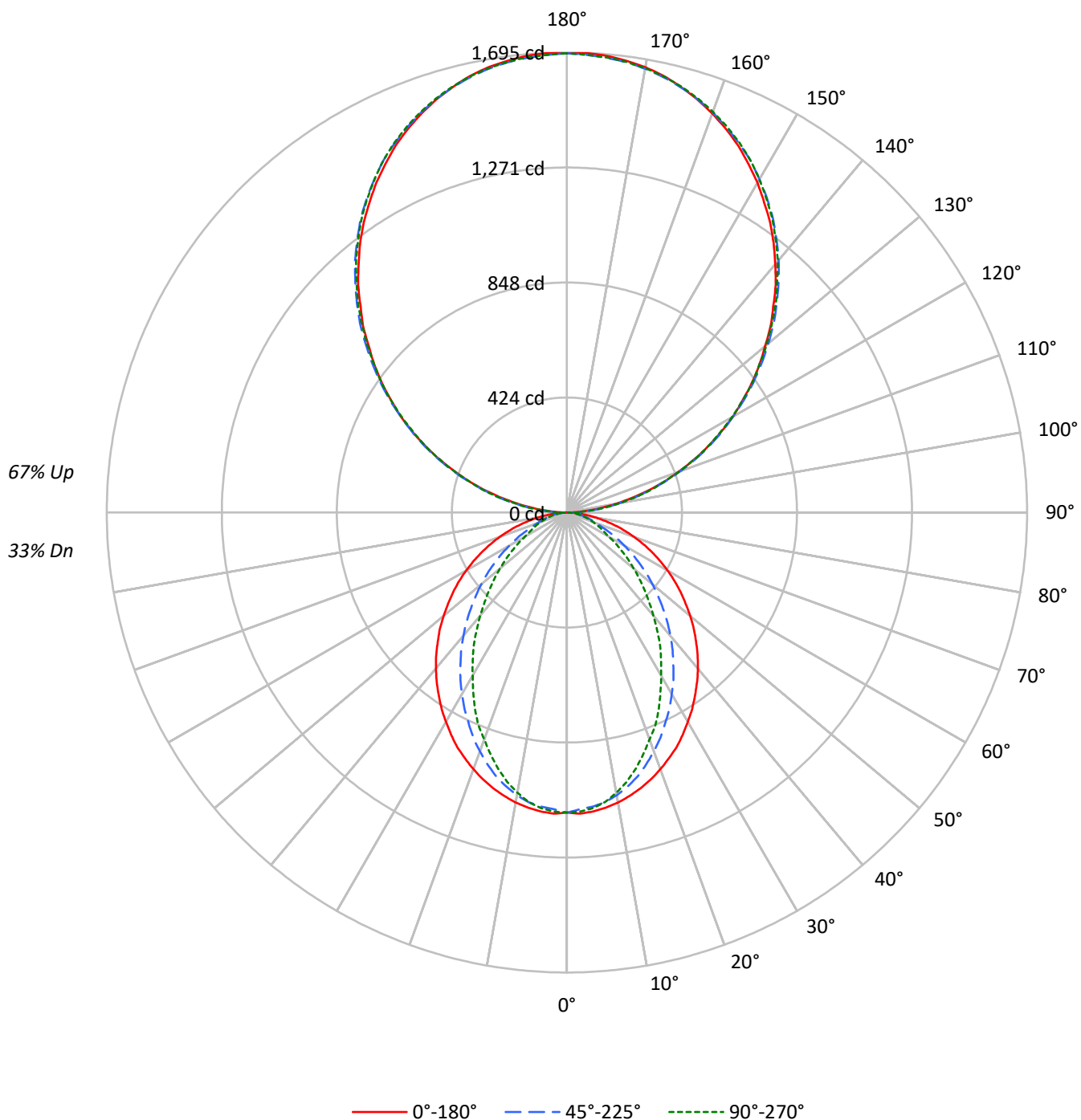
Lumens per Lamp: N/A
Luminaire Lumens: 7008.8 lumens
Efficiency: N/A
Efficacy: 95.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 73.1
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: P921308

CATALOG NUMBER: DFN2DIP-4P3F0-030D060US940-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P921308

CATALOG NUMBER: DFN2DIP-4P3F0-030D060US940-RLLFLL

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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1260	1260	1260
5°	1261	1239	1247
10°	1248	1214	1207
15°	1230	1173	1143
20°	1206	1117	1066
25°	1182	1054	991
30°	1150	990	897
35°	1119	921	814
40°	1087	850	719
45°	1050	771	632
50°	1011	691	548
55°	971	606	467
60°	924	517	384
65°	870	427	346
70°	805	343	312
75°	722	301	283
80°	604	250	244
85°	410	163	181

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1695 cd/sqm

TEST NUMBER: P921308

CATALOG NUMBER: DFN2DIP-4P3F0-030D060US940-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	1.5
10°-20°	284.5	4.1
20°-30°	399.4	5.7
30°-40°	435.3	6.2
40°-50°	400.1	5.7
50°-60°	314.2	4.5
60°-70°	204.5	2.9
70°-80°	105.3	1.5
80°-90°	31.7	0.5
90°-100°	104.7	1.5
100°-110°	332.7	4.7
110°-120°	569.3	8.1
120°-130°	748.8	10.7
130°-140°	840.5	12.0
140°-150°	824.2	11.8
150°-160°	691.4	9.9
160°-170°	458.5	6.5
170°-180°	160.3	2.3
0°-30°	787.5	11.2
0°-40°	1222.8	17.4
0°-60°	1937.2	27.6
0°-90°	2278.7	32.5
90°-120°	1006.7	14.4
90°-150°	3420.1	48.8
90°-180°	4730.0	67.5
0°-180°	7008.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1106	1106	1106	1106	1106	
5°	1106	1101	1088	1097	1094	105
15°	1052	1040	1007	988	978	296
25°	955	922	856	816	800	439
35°	822	771	683	620	598	515
45°	672	605	500	429	405	519
55°	511	433	325	265	246	457
65°	345	264	174	140	137	342
75°	184	114	80	73	72	195
85°	43	22	19	19	19	49
90°	2	18	50	47	48	7
95°	74	89	91	91	89	83
105°	307	311	314	317	317	324
115°	571	580	577	575	571	565
125°	831	844	840	835	834	743
135°	1075	1091	1094	1092	1088	831
145°	1305	1315	1323	1325	1319	815
155°	1492	1496	1501	1508	1503	687
165°	1623	1622	1622	1632	1625	458
175°	1689	1685	1682	1692	1683	160
180°	1692	1692	1692	1692	1692	

TEST NUMBER: P921308

CATALOG NUMBER: DFN2DIP-4P3F0-030D060US940-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1105.6	1105.6	1105.6	1105.6	1105.6
2.5°	1110.6	1105.6	1094.6	1104.7	1102.7
5°	1105.6	1100.6	1087.6	1096.6	1093.6
7.5°	1096.6	1090.7	1076.7	1080.6	1075.6
10°	1084.6	1077.6	1057.7	1054.5	1048.7
12.5°	1069.6	1060.6	1033.6	1027.6	1016.5
15°	1051.6	1040.5	1006.6	987.6	977.6
17.5°	1030.5	1014.6	972.5	950.6	934.5
20°	1006.6	986.5	936.5	911.6	889.5
22.5°	980.6	957.5	899.5	865.5	850.5
25°	954.6	922.5	856.5	815.5	800.4
27.5°	923.5	889.5	816.5	769.5	746.4
30°	890.6	852.5	772.4	721.5	694.4
32.5°	858.4	812.4	730.5	670.4	645.3
35°	822.5	771.4	683.4	620.4	598.3
37.5°	787.5	732.4	639.4	570.2	545.4
40°	750.5	690.5	593.3	522.3	496.3
42.5°	712.4	648.5	547.3	473.2	448.3
45°	672.4	605.3	500.3	429.2	405.2
47.5°	634.4	563.4	455.3	384.1	362.2
50°	592.4	521.3	411.3	342.1	321.2
52.5°	551.3	476.3	369.3	303.2	284.2
55°	511.2	433.2	325.1	265.2	246.2
57.5°	470.3	390.2	286.2	230.2	214.1
60°	428.2	348.2	245.1	194.1	178.2
62.5°	387.3	307.2	210.1	162.1	154.2
65°	345.2	264.1	174.1	140.1	137.1
67.5°	305.2	224.1	140.1	123.1	120.0
70°	263.1	185.1	116.0	106.0	102.0
72.5°	223.1	149.0	97.0	89.1	87.0
75°	184.0	114.0	80.1	73.0	72.1
77.5°	145.1	81.0	63.0	59.0	57.0
80°	109.1	58.1	48.0	44.1	44.1
82.5°	76.0	39.1	33.0	31.0	31.0
85°	43.0	21.9	19.0	19.0	19.0
87.5°	16.1	7.9	7.9	7.0	7.0
90°	1.5	18.4	50.0	46.9	48.4
92.5°	31.7	42.9	44.4	45.9	45.9
95°	74.5	88.7	91.3	91.3	88.7
97.5°	123.9	137.2	142.9	142.9	142.9
100°	181.1	192.8	196.9	196.9	195.4
102.5°	241.3	249.9	255.6	257.1	255.6
105°	307.1	311.2	314.2	316.8	316.8
107.5°	372.4	378.5	378.5	379.5	372.4
110°	435.7	443.8	443.8	443.8	439.7

TEST NUMBER: P921308

CATALOG NUMBER: DFN2DIP-4P3F0-030D060US940-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	504.0	512.6	511.1	507.0	504.0
115°	571.3	579.5	576.9	575.4	571.3
117.5°	638.2	649.4	642.2	638.2	634.1
120°	705.5	716.8	705.5	705.5	700.9
122.5°	766.7	781.0	773.8	769.8	766.7
125°	831.0	843.7	839.6	835.1	833.6
127.5°	893.8	909.5	903.9	897.9	893.8
130°	952.4	970.8	968.2	965.2	959.6
132.5°	1018.2	1032.5	1033.5	1026.4	1022.3
135°	1074.9	1090.7	1093.7	1092.2	1088.1
137.5°	1138.1	1150.8	1153.4	1152.4	1146.3
140°	1193.7	1206.5	1213.6	1213.6	1208.0
142.5°	1250.8	1263.6	1267.7	1269.2	1263.6
145°	1304.9	1315.1	1323.3	1324.8	1319.2
147.5°	1353.3	1366.1	1372.3	1374.7	1369.1
150°	1403.4	1412.0	1417.6	1422.2	1417.6
152.5°	1447.7	1456.4	1463.6	1469.2	1463.6
155°	1492.1	1496.2	1500.7	1508.0	1503.3
157.5°	1530.4	1533.5	1536.0	1546.2	1539.1
160°	1564.6	1567.6	1569.1	1577.8	1571.7
162.5°	1596.2	1596.2	1597.7	1607.4	1600.3
165°	1623.2	1621.7	1621.7	1631.9	1624.8
167.5°	1647.7	1643.2	1643.2	1653.3	1646.2
170°	1666.1	1662.0	1660.5	1670.6	1662.0
172.5°	1678.8	1674.7	1673.2	1683.4	1674.7
175°	1689.0	1685.0	1681.9	1692.1	1683.4
177.5°	1694.6	1690.6	1687.5	1696.1	1687.5
180°	1692.1	1692.1	1692.1	1692.1	1692.1

TEST NUMBER: P921308

CATALOG NUMBER: DFN2DIP-4P3F0-030D060US940-RLFL

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	6.01	6.72	7.11	7.81	9.32	1.98	2.68	3.08	3.78	5.28
	3H	7.68	8.31	8.79	9.41	10.93	3.15	3.78	4.26	4.88	6.40
	4H	8.28	8.88	9.40	9.98	11.50	3.59	4.19	4.71	5.29	6.82
	6H	8.69	9.24	9.82	10.35	11.88	3.90	4.45	5.02	5.55	7.09
	8H	8.81	9.33	9.94	10.45	11.98	3.98	4.50	5.11	5.63	7.16
	12H	8.87	9.36	10.00	10.48	12.03	4.02	4.51	5.15	5.63	7.18
4H	2H	6.02	6.61	7.14	7.72	9.24	2.55	3.15	3.68	4.25	5.78
	3H	7.83	8.33	8.96	9.45	10.99	3.88	4.38	5.02	5.51	7.05
	4H	8.51	8.97	9.65	10.09	11.65	4.42	4.88	5.56	6.00	7.56
	6H	9.02	9.41	10.16	10.55	12.10	4.83	5.22	5.97	6.36	7.91
	8H	9.19	9.55	10.33	10.68	12.25	4.95	5.32	6.09	6.45	8.02
	12H	9.27	9.60	10.43	10.75	12.32	5.01	5.34	6.16	6.48	8.05
8H	4H	8.47	8.83	9.61	9.97	11.53	4.69	5.06	5.83	6.19	7.75
	6H	9.03	9.33	10.19	10.50	12.06	5.20	5.50	6.36	6.67	8.23
	8H	9.24	9.50	10.40	10.66	12.24	5.38	5.64	6.55	6.80	8.38
	12H	9.37	9.60	10.54	10.75	12.37	5.49	5.72	6.66	6.87	8.49
12H	4H	8.41	8.75	9.57	9.89	11.46	4.69	5.02	5.85	6.16	7.73
	6H	9.00	9.26	10.17	10.42	12.00	5.24	5.51	6.41	6.66	8.24
	8H	9.21	9.44	10.38	10.59	12.21	5.44	5.67	6.61	6.83	8.44