

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: P921960

Luminaire Tested: DFN2DIP-PN2F0-020D060US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921960
REPORT IS A COMBINATION OF REPORTS P899501 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D060US940-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

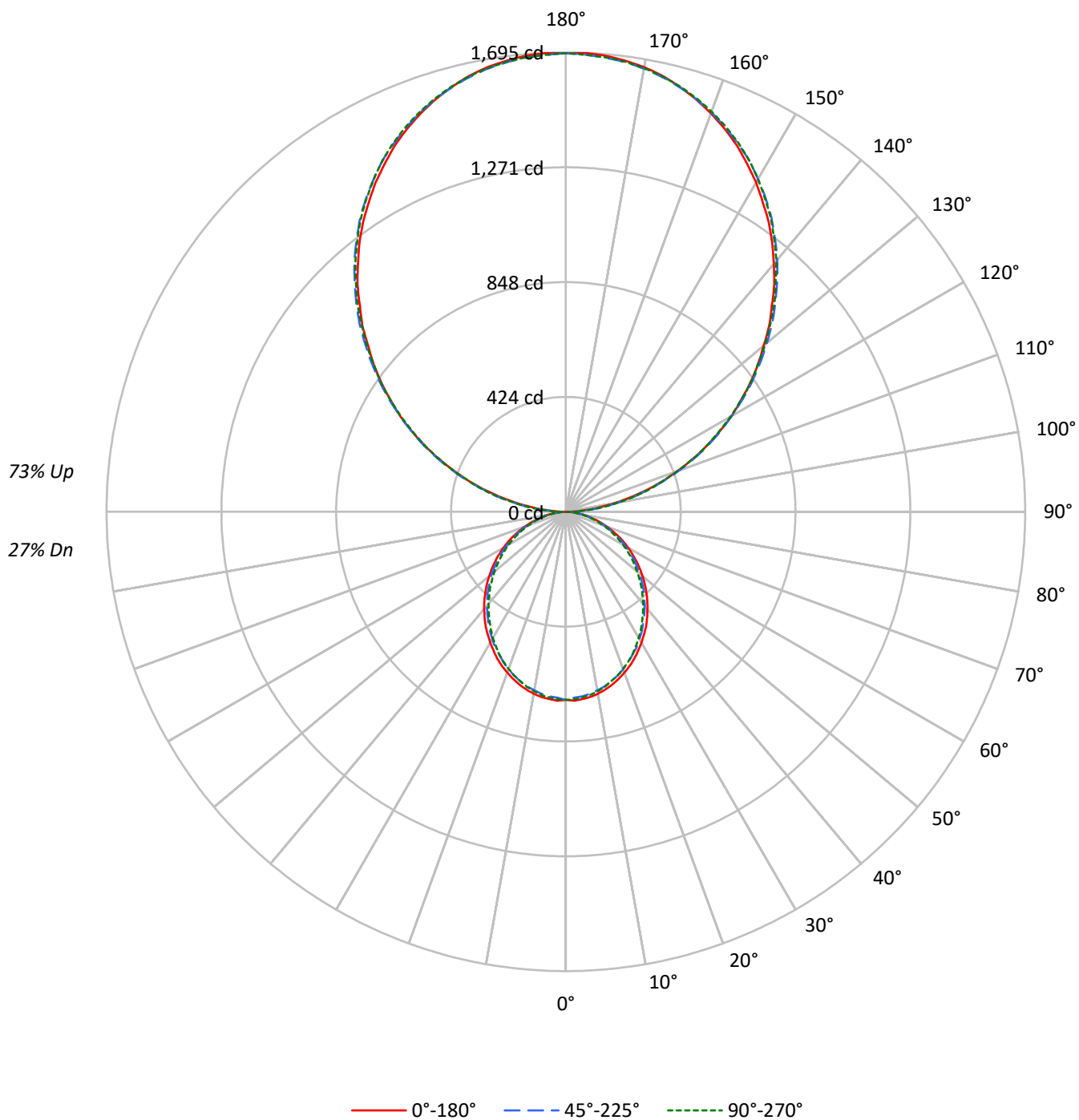
Lumens per Lamp: N/A
Luminaire Lumens: 6500.6 lumens
Efficiency: N/A
Efficacy: 94.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 69
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P921960

CATALOG NUMBER: DFN2DIP-PN2F0-020D060US940-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P921960

CATALOG NUMBER: DFN2DIP-PN2F0-020D060US940-FLLFL

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	102	102	102	102	91	91	91	91	71	71	71	52	52	52	35	35	35
1	93	88	85	81	83	79	76	73	62	60	58	46	44	43	31	30	30
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25
3	77	68	61	55	68	61	55	50	48	44	40	35	33	30	24	23	21
4	70	60	52	47	62	54	47	42	42	38	34	32	29	26	22	20	18
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	19	17	16
6	59	48	40	34	53	43	36	31	34	29	25	25	22	20	18	16	14
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	12
8	51	39	31	26	45	35	28	24	28	23	20	21	18	15	15	13	11
9	47	35	28	23	42	32	26	21	25	21	17	19	16	14	14	11	10
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1503	1503	1503
5°	1503	1479	1490
10°	1488	1456	1467
15°	1464	1428	1434
20°	1432	1392	1399
25°	1400	1349	1360
30°	1361	1309	1310
35°	1324	1262	1258
40°	1277	1214	1208
45°	1232	1166	1157
50°	1182	1116	1098
55°	1129	1058	1043
60°	1069	990	980
65°	1004	918	906
70°	920	831	826
75°	806	727	749
80°	668	593	606
85°	452	374	381

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2279 cd/sqm

TEST NUMBER: P921960

CATALOG NUMBER: DFN2DIP-PN2F0-020D060US940-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.3	1.0
10°-20°	183.8	2.8
20°-30°	270.1	4.2
30°-40°	313.7	4.8
40°-50°	313.3	4.8
50°-60°	273.2	4.2
60°-70°	201.9	3.1
70°-80°	114.2	1.8
80°-90°	35.0	0.5
90°-100°	104.7	1.6
100°-110°	332.7	5.1
110°-120°	569.3	8.8
120°-130°	748.8	11.5
130°-140°	840.5	12.9
140°-150°	824.2	12.7
150°-160°	691.4	10.6
160°-170°	458.5	7.1
170°-180°	160.3	2.5
0°-30°	519.1	8.0
0°-40°	832.8	12.8
0°-60°	1419.3	21.8
0°-90°	1770.4	27.2
90°-120°	1006.7	15.5
90°-150°	3420.1	52.6
90°-180°	4730.0	72.8
0°-180°	6500.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	694	694	694	694	694	
5°	694	691	684	689	688	66
15°	661	657	648	651	647	186
25°	598	592	581	582	581	275
35°	516	509	498	494	491	322
45°	420	415	405	398	395	324
55°	318	314	306	298	294	284
65°	214	210	204	198	194	212
75°	112	111	107	103	105	120
85°	27	27	26	24	23	30
90°	2	18	50	47	48	6
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: P921960

CATALOG NUMBER: DFN2DIP-PN2F0-020D060US940-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	693.9	693.9	693.9	693.9	693.9
2.5°	697.9	694.6	687.2	693.9	692.7
5°	693.9	691.3	683.9	689.3	688.0
7.5°	689.3	685.3	678.0	683.3	682.0
10°	682.0	677.3	669.3	674.6	672.6
12.5°	671.9	668.0	660.0	663.3	661.9
15°	660.6	656.7	647.9	650.6	647.3
17.5°	646.6	642.7	633.9	637.2	633.9
20°	631.2	627.2	617.9	619.9	617.2
22.5°	615.9	609.9	601.2	601.2	599.9
25°	597.9	592.5	581.2	582.5	581.2
27.5°	577.8	573.2	564.5	562.6	559.2
30°	557.9	552.5	542.5	540.6	537.8
32.5°	536.5	532.5	521.8	517.8	515.1
35°	515.9	509.2	498.5	494.5	491.1
37.5°	492.5	486.4	475.7	471.1	467.7
40°	468.4	463.1	452.4	446.5	443.7
42.5°	445.1	439.7	429.1	422.4	418.4
45°	419.7	415.1	405.0	397.7	395.0
47.5°	395.0	390.4	379.7	372.3	368.4
50°	369.0	365.7	356.3	347.0	343.7
52.5°	343.7	338.9	330.3	323.0	318.3
55°	317.6	313.6	305.6	297.7	294.3
57.5°	291.6	288.3	279.6	271.6	268.9
60°	265.6	263.0	253.6	246.2	244.2
62.5°	240.2	235.5	228.9	222.2	219.5
65°	214.2	210.2	203.6	197.5	194.2
67.5°	187.5	184.1	178.2	173.5	170.9
70°	162.8	160.2	154.1	149.5	146.9
72.5°	137.5	134.8	131.4	126.8	124.8
75°	112.1	110.8	107.4	103.4	104.8
77.5°	89.4	86.8	85.3	83.4	81.4
80°	66.8	66.1	64.7	62.7	61.3
82.5°	45.4	45.4	44.8	42.1	42.1
85°	27.3	26.7	26.0	24.0	23.4
87.5°	12.0	10.7	9.4	7.4	6.7
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: P921960

CATALOG NUMBER: DFN2DIP-PN2F0-020D060US940-FLLFLL

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: P921960

CATALOG NUMBER: DFN2DIP-PN2F0-020D060US940-FLLFLL

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	5.96	6.65	7.09	7.77	9.33	5.52	6.21	6.65	7.33	8.90
	3H	7.59	8.20	8.73	9.33	10.91	7.11	7.72	8.25	8.86	10.43
	4H	8.15	8.74	9.30	9.87	11.45	7.67	8.26	8.82	9.39	10.97
	6H	8.53	9.07	9.68	10.20	11.80	8.04	8.58	9.20	9.71	11.31
	8H	8.62	9.13	9.78	10.28	11.87	8.13	8.65	9.29	9.80	11.38
	12H	8.66	9.14	9.82	10.28	11.89	8.16	8.65	9.33	9.79	11.40
4H	2H	6.39	6.98	7.55	8.11	9.69	6.04	6.63	7.20	7.76	9.34
	3H	8.22	8.71	9.38	9.86	11.46	7.82	8.31	8.98	9.46	11.06
	4H	8.91	9.36	10.07	10.50	12.12	8.49	8.94	9.66	10.09	11.70
	6H	9.39	9.78	10.56	10.95	12.55	8.97	9.36	10.14	10.53	12.13
	8H	9.53	9.89	10.70	11.05	12.67	9.11	9.46	10.27	10.62	12.25
	12H	9.58	9.91	10.77	11.08	12.71	9.15	9.48	10.33	10.65	12.27
8H	4H	9.08	9.44	10.25	10.60	12.22	8.71	9.07	9.88	10.23	11.85
	6H	9.68	9.98	10.87	11.18	12.80	9.30	9.60	10.49	10.80	12.42
	8H	9.88	10.14	11.08	11.32	12.96	9.50	9.76	10.70	10.94	12.58
	12H	9.99	10.22	11.19	11.40	13.07	9.60	9.82	10.79	11.00	12.67
12H	4H	9.05	9.38	10.24	10.55	12.18	8.69	9.02	9.88	10.19	11.82
	6H	9.70	9.96	10.90	11.14	12.78	9.34	9.60	10.53	10.78	12.42
	8H	9.92	10.15	11.12	11.33	13.00	9.55	9.78	10.75	10.96	12.63