

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: P924048

Luminaire Tested: DFN2DIP-4P3F0-040D040US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924048
REPORT IS A COMBINATION OF REPORTS P899054 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-040D040US950-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

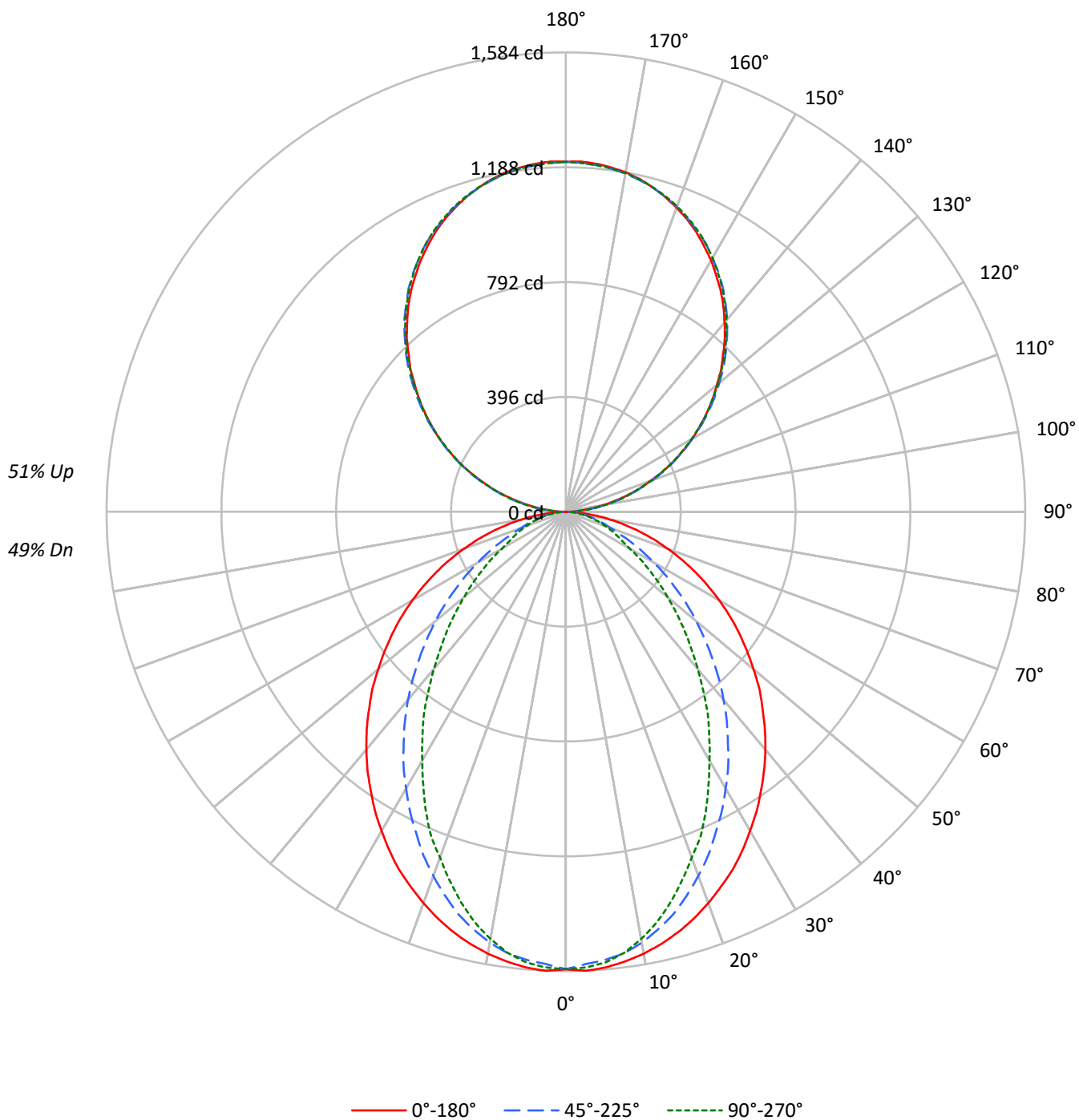
Lumens per Lamp: N/A
Luminaire Lumens: 6620.8 lumens
Efficiency: N/A
Efficacy: 98.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 67.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P924048

CATALOG NUMBER: DFN2DIP-4P3F0-040D040US950-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P924048

CATALOG NUMBER: DFN2DIP-4P3F0-040D040US950-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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1797	1797	1797
5°	1799	1768	1780
10°	1780	1732	1721
15°	1755	1673	1631
20°	1721	1593	1521
25°	1686	1504	1414
30°	1641	1412	1279
35°	1596	1314	1161
40°	1550	1212	1025
45°	1497	1100	902
50°	1442	986	782
55°	1385	865	667
60°	1318	738	548
65°	1241	609	493
70°	1148	490	445
75°	1031	429	404
80°	862	356	348
85°	584	232	258

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1497 cd/sqm

TEST NUMBER: P924048

CATALOG NUMBER: DFN2DIP-4P3F0-040D040US950-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.8	2.2
10°-20°	405.8	6.1
20°-30°	569.7	8.6
30°-40°	621.0	9.4
40°-50°	570.8	8.6
50°-60°	448.2	6.8
60°-70°	291.8	4.4
70°-80°	150.2	2.3
80°-90°	41.8	0.6
90°-100°	74.7	1.1
100°-110°	237.3	3.6
110°-120°	406.1	6.1
120°-130°	534.0	8.1
130°-140°	599.4	9.1
140°-150°	587.8	8.9
150°-160°	493.1	7.4
160°-170°	327.0	4.9
170°-180°	114.3	1.7
0°-30°	1123.3	17.0
0°-40°	1744.3	26.3
0°-60°	2763.3	41.7
0°-90°	3247.0	49.0
90°-120°	718.0	10.8
90°-150°	2439.3	36.8
90°-180°	3374.0	51.0
0°-180°	6620.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1577	1577	1577	1577	1577	
5°	1577	1570	1551	1564	1560	150
15°	1500	1484	1436	1409	1395	423
25°	1362	1316	1222	1163	1142	626
35°	1173	1100	975	885	853	734
45°	959	864	714	612	578	741
55°	729	618	464	378	351	652
65°	492	377	248	200	196	488
75°	262	163	114	104	103	278
85°	61	31	27	27	27	70
90°	1	13	36	34	34	6
95°	53	63	65	65	63	59
105°	219	222	224	226	226	231
115°	408	413	412	410	408	403
125°	593	602	599	596	594	530
135°	767	778	780	779	776	593
145°	931	938	944	945	941	582
155°	1064	1067	1070	1076	1072	490
165°	1158	1157	1157	1164	1159	327
175°	1205	1202	1200	1207	1201	114
180°	1207	1207	1207	1207	1207	

TEST NUMBER: P924048

CATALOG NUMBER: DFN2DIP-4P3F0-040D040US950-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1577.2	1577.2	1577.2	1577.2	1577.2
2.5°	1584.3	1577.2	1561.4	1575.8	1572.9
5°	1577.2	1570.0	1551.4	1564.3	1560.1
7.5°	1564.3	1555.8	1535.8	1541.4	1534.3
10°	1547.2	1537.2	1508.7	1504.3	1495.9
12.5°	1525.8	1512.9	1474.3	1465.8	1450.1
15°	1500.1	1484.3	1435.9	1408.8	1394.6
17.5°	1470.1	1447.2	1387.2	1355.9	1333.0
20°	1435.9	1407.2	1335.9	1300.3	1268.8
22.5°	1398.8	1365.9	1283.0	1234.6	1213.3
25°	1361.6	1315.9	1221.7	1163.3	1141.7
27.5°	1317.5	1268.8	1164.6	1097.6	1064.7
30°	1270.3	1216.0	1101.8	1029.1	990.5
32.5°	1224.6	1158.9	1042.0	956.3	920.5
35°	1173.3	1100.4	974.9	884.9	853.4
37.5°	1123.3	1044.7	912.0	813.5	777.9
40°	1070.5	984.9	846.4	745.1	708.0
42.5°	1016.2	924.9	780.8	675.1	639.5
45°	959.2	863.5	713.7	612.3	578.0
47.5°	905.0	803.6	649.5	548.1	516.7
50°	845.0	743.6	586.6	488.1	458.2
52.5°	786.4	679.3	526.7	432.4	405.4
55°	729.3	618.0	463.8	378.3	351.2
57.5°	670.9	556.7	408.2	328.3	305.5
60°	610.8	496.7	349.6	276.9	254.1
62.5°	552.5	438.3	299.7	231.2	219.9
65°	492.5	376.7	248.3	199.9	195.5
67.5°	435.4	319.7	199.9	175.5	171.2
70°	375.4	264.1	165.5	151.3	145.5
72.5°	318.3	212.6	138.4	127.1	124.2
75°	262.5	162.7	114.2	104.2	102.8
77.5°	207.0	115.5	90.0	84.2	81.3
80°	155.5	82.8	68.4	62.9	62.9
82.5°	108.5	55.7	47.1	44.2	44.2
85°	61.3	31.4	27.1	27.1	27.1
87.5°	22.9	11.4	11.4	10.0	10.0
90°	1.0	13.1	35.7	33.5	34.5
92.5°	22.5	30.5	31.7	32.7	32.7
95°	53.1	63.3	65.2	65.2	63.3
97.5°	88.4	97.9	101.9	101.9	101.9
100°	129.2	137.6	140.4	140.4	139.4
102.5°	172.1	178.3	182.3	183.4	182.3
105°	219.0	221.9	224.1	225.9	225.9
107.5°	265.6	270.0	270.0	270.6	265.6
110°	310.7	316.5	316.5	316.5	313.7

TEST NUMBER: P924048

CATALOG NUMBER: DFN2DIP-4P3F0-040D040US950-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	359.5	365.7	364.5	361.7	359.5
115°	407.5	413.4	411.5	410.4	407.5
117.5°	455.2	463.2	458.1	455.2	452.3
120°	503.2	511.2	503.2	503.2	499.9
122.5°	546.8	557.0	552.0	549.0	546.8
125°	592.7	601.8	598.9	595.6	594.5
127.5°	637.5	648.7	644.7	640.3	637.5
130°	679.2	692.4	690.6	688.4	684.4
132.5°	726.2	736.4	737.2	732.0	729.1
135°	766.6	777.9	780.1	778.9	776.1
137.5°	811.8	820.8	822.6	821.9	817.6
140°	851.3	860.5	865.6	865.6	861.6
142.5°	892.2	901.2	904.1	905.3	901.2
145°	930.7	938.0	943.8	944.9	940.9
147.5°	965.3	974.3	978.7	980.5	976.5
150°	1000.9	1007.1	1011.1	1014.4	1011.1
152.5°	1032.6	1038.7	1043.9	1047.9	1043.9
155°	1064.2	1067.1	1070.4	1075.5	1072.2
157.5°	1091.6	1093.7	1095.5	1102.8	1097.7
160°	1115.9	1118.1	1119.1	1125.3	1121.0
162.5°	1138.4	1138.4	1139.6	1146.4	1141.4
165°	1157.8	1156.6	1156.6	1163.9	1158.8
167.5°	1175.2	1171.9	1171.9	1179.2	1174.1
170°	1188.3	1185.3	1184.3	1191.5	1185.3
172.5°	1197.4	1194.5	1193.4	1200.7	1194.5
175°	1204.7	1201.8	1199.6	1206.8	1200.7
177.5°	1208.7	1205.8	1203.6	1209.8	1203.6
180°	1206.8	1206.8	1206.8	1206.8	1206.8

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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	9.06	9.88	10.03	10.86	12.15	5.02	5.84	5.99	6.82	8.11
	3H	10.73	11.47	11.71	12.46	13.77	6.20	6.94	7.18	7.93	9.24
	4H	11.34	12.03	12.33	13.03	14.34	6.65	7.34	7.64	8.34	9.65
	6H	11.75	12.39	12.76	13.39	14.72	6.96	7.60	7.97	8.60	9.93
	8H	11.88	12.49	12.89	13.50	14.83	7.05	7.66	8.06	8.67	10.00
	12H	11.94	12.52	12.96	13.53	14.88	7.09	7.67	8.11	8.68	10.03
4H	2H	9.07	9.77	10.08	10.76	12.08	5.61	6.31	6.61	7.30	8.62
	3H	10.90	11.48	11.91	12.50	13.83	6.95	7.53	7.96	8.55	9.89
	4H	11.59	12.11	12.60	13.13	14.48	7.50	8.02	8.51	9.04	10.39
	6H	12.10	12.55	13.13	13.59	14.94	7.91	8.36	8.94	9.40	10.75
	8H	12.27	12.69	13.30	13.72	15.09	8.03	8.46	9.06	9.49	10.85
	12H	12.36	12.74	13.41	13.79	15.16	8.09	8.48	9.14	9.52	10.89
8H	4H	11.55	11.98	12.58	13.01	14.37	7.77	8.20	8.80	9.23	10.59
	6H	12.11	12.46	13.17	13.54	14.90	8.28	8.63	9.34	9.71	11.07
	8H	12.33	12.63	13.39	13.69	15.07	8.47	8.78	9.53	9.84	11.22
	12H	12.46	12.73	13.52	13.78	15.21	8.58	8.85	9.65	9.91	11.33
12H	4H	11.50	11.89	12.55	12.93	14.30	7.78	8.16	8.82	9.21	10.58
	6H	12.09	12.39	13.15	13.45	14.84	8.33	8.64	9.39	9.70	11.08
	8H	12.30	12.57	13.37	13.63	15.05	8.54	8.81	9.60	9.86	11.28

END OF REPORT