

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: P908437

Luminaire Tested: DFN2DIP-PN3F0-040D040US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908437
REPORT IS A COMBINATION OF REPORTS P901047 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-040D040US840-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

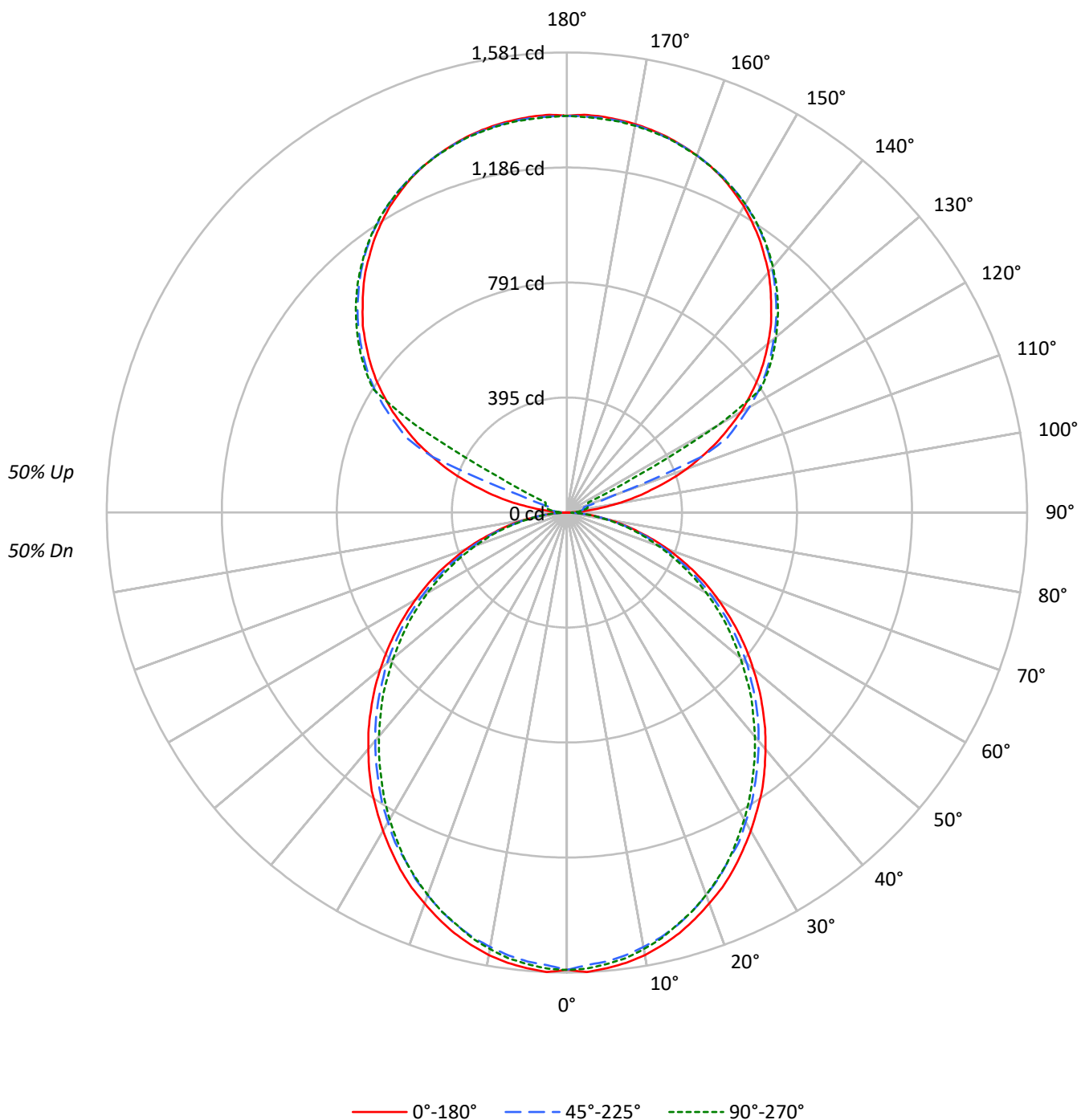
Lumens per Lamp: N/A
Luminaire Lumens: 7998.1 lumens
Efficiency: N/A
Efficacy: 123.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 64.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	93	90	86	90	86	83	80	73	71	68	61	59	58	50	48	47
2	89	82	75	70	82	76	70	66	64	60	57	53	51	48	44	42	40
3	81	72	64	59	75	66	60	55	56	52	48	47	44	41	39	36	34
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	29
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	31	28	26
6	63	51	43	37	58	47	40	35	40	35	31	34	30	27	28	25	23
7	58	46	38	32	53	43	36	30	37	31	27	31	27	23	26	23	20
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	24	20	18
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	19	16
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1837	1837	1837
5°	1839	1810	1823
10°	1823	1785	1798
15°	1795	1754	1758
20°	1758	1712	1718
25°	1721	1662	1672
30°	1674	1615	1613
35°	1631	1560	1551
40°	1577	1505	1491
45°	1523	1449	1431
50°	1464	1391	1361
55°	1402	1323	1296
60°	1332	1243	1222
65°	1256	1159	1135
70°	1158	1058	1040
75°	1024	936	952
80°	861	780	786
85°	607	516	512

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1523 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.9	1.8
10°-20°	416.2	5.2
20°-30°	611.7	7.6
30°-40°	710.5	8.9
40°-50°	709.6	8.9
50°-60°	618.7	7.7
60°-70°	457.4	5.7
70°-80°	258.8	3.2
80°-90°	70.7	0.9
90°-100°	44.9	0.6
100°-110°	167.6	2.1
110°-120°	444.4	5.6
120°-130°	737.1	9.2
130°-140°	783.0	9.8
140°-150°	727.7	9.1
150°-160°	585.1	7.3
160°-170°	377.0	4.7
170°-180°	129.8	1.6
0°-30°	1175.9	14.7
0°-40°	1886.3	23.6
0°-60°	3214.6	40.2
0°-90°	4001.4	50.0
90°-120°	656.9	8.2
90°-150°	2904.8	36.3
90°-180°	3997.0	50.0
0°-180°	7998.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1572	1572	1572	1572	1572	
5°	1572	1566	1549	1561	1558	149
15°	1496	1487	1468	1474	1466	421
25°	1354	1342	1316	1319	1316	623
35°	1168	1153	1129	1120	1112	730
45°	951	940	917	901	895	734
55°	720	710	692	674	667	643
65°	485	476	461	447	440	480
75°	254	251	243	234	237	271
85°	62	60	59	54	53	69
90°	1	12	20	25	27	7
95°	64	32	38	43	42	76
105°	300	330	60	71	75	320
115°	567	584	609	152	81	558
125°	802	815	834	840	843	715
135°	992	1008	1017	1027	1025	767
145°	1151	1150	1167	1174	1169	720
155°	1268	1259	1271	1276	1269	584
165°	1336	1330	1333	1340	1333	377
175°	1366	1359	1361	1368	1358	130
180°	1363	1363	1363	1363	1363	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1571.8	1571.8	1571.8	1571.8	1571.8
2.5°	1580.9	1573.4	1556.7	1571.8	1568.9
5°	1571.8	1565.8	1549.1	1561.2	1558.3
7.5°	1561.2	1552.2	1535.5	1547.7	1544.7
10°	1544.7	1534.1	1516.0	1528.0	1523.5
12.5°	1521.9	1512.9	1494.8	1502.4	1499.2
15°	1496.2	1487.2	1467.5	1473.6	1466.1
17.5°	1464.5	1455.5	1435.8	1443.3	1435.8
20°	1429.7	1420.7	1399.6	1404.0	1398.2
22.5°	1395.0	1381.4	1361.7	1361.7	1358.7
25°	1354.1	1342.1	1316.5	1319.4	1316.5
27.5°	1308.8	1298.2	1278.7	1274.1	1266.7
30°	1263.5	1251.4	1228.8	1224.3	1218.2
32.5°	1215.2	1206.2	1181.9	1172.9	1166.7
35°	1168.3	1153.3	1129.0	1119.9	1112.4
37.5°	1115.4	1101.8	1077.5	1067.0	1059.4
40°	1061.1	1048.8	1024.6	1011.2	1005.1
42.5°	1008.1	995.9	971.9	956.6	947.7
45°	950.7	940.2	917.4	900.9	894.7
47.5°	894.7	884.1	860.0	843.3	834.4
50°	835.8	828.2	807.1	785.9	778.3
52.5°	778.3	767.8	748.2	731.5	720.9
55°	719.5	710.3	692.3	674.1	666.6
57.5°	660.5	653.0	633.2	615.1	609.0
60°	601.5	595.5	574.4	557.7	553.2
62.5°	544.1	533.5	518.5	503.3	497.3
65°	485.2	476.1	461.0	447.4	439.9
67.5°	424.7	417.1	403.6	393.0	387.0
70°	368.8	362.7	349.1	338.5	332.5
72.5°	311.4	305.3	297.8	287.2	282.7
75°	253.9	251.0	243.3	234.3	237.3
77.5°	202.5	196.4	193.4	188.8	184.4
80°	151.2	149.6	146.5	142.1	139.1
82.5°	102.8	102.8	101.4	95.2	95.2
85°	61.9	60.5	59.0	54.3	52.9
87.5°	27.3	24.2	21.2	16.7	15.0
90°	0.9	11.8	19.7	24.7	26.6
92.5°	24.7	20.7	23.6	25.7	26.6
95°	64.0	31.5	38.4	43.4	42.4
97.5°	115.4	34.5	50.3	53.3	54.2
100°	174.6	39.5	56.2	64.0	66.0
102.5°	239.6	237.8	58.2	69.0	72.0
105°	299.8	329.5	60.2	71.0	74.9
107.5°	369.9	394.6	62.2	73.0	77.0
110°	437.1	457.7	172.7	74.0	77.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	500.2	517.9	501.1	75.9	79.0
115°	567.1	583.9	608.6	151.9	81.0
117.5°	625.4	645.1	662.0	520.8	262.4
120°	690.5	705.3	723.1	735.0	601.8
122.5°	745.7	761.5	781.3	787.2	788.2
125°	801.9	814.9	833.5	840.5	843.4
127.5°	853.2	867.1	881.9	891.8	892.7
130°	901.6	917.5	928.2	939.1	938.2
132.5°	950.9	963.8	974.6	983.5	982.6
135°	992.4	1008.2	1017.0	1026.9	1025.0
137.5°	1035.7	1047.5	1057.5	1067.3	1064.4
140°	1078.1	1086.1	1096.9	1105.8	1100.9
142.5°	1113.8	1120.6	1133.5	1141.2	1136.4
145°	1151.2	1150.2	1166.9	1173.9	1168.9
147.5°	1183.7	1180.7	1197.5	1202.4	1198.6
150°	1215.3	1208.4	1224.3	1230.1	1225.2
152.5°	1241.9	1234.1	1248.8	1254.8	1247.9
155°	1267.6	1258.8	1270.6	1276.5	1268.6
157.5°	1288.3	1280.4	1289.4	1296.3	1288.3
160°	1306.1	1300.1	1306.1	1311.9	1305.0
162.5°	1321.8	1316.0	1320.9	1327.8	1318.9
165°	1335.6	1329.8	1332.7	1339.6	1332.7
167.5°	1346.6	1340.5	1343.6	1350.5	1341.6
170°	1355.4	1349.5	1351.4	1358.4	1349.5
172.5°	1361.3	1355.4	1357.5	1364.3	1355.4
175°	1366.1	1359.3	1361.3	1368.2	1358.4
177.5°	1368.2	1361.3	1362.3	1369.3	1360.4
180°	1363.3	1363.3	1363.3	1363.3	1363.3

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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	9.35	10.21	10.31	11.18	12.45	8.91	9.77	9.87	10.74	12.02
	3H	11.00	11.78	11.97	12.76	14.05	10.52	11.29	11.49	12.28	13.57
	4H	11.59	12.32	12.57	13.30	14.61	11.10	11.83	12.08	12.82	14.12
	6H	11.98	12.66	12.98	13.65	14.96	11.49	12.17	12.49	13.16	14.47
	8H	12.09	12.73	13.08	13.73	15.05	11.59	12.24	12.59	13.24	14.55
	12H	12.13	12.74	13.14	13.74	15.08	11.63	12.24	12.64	13.25	14.58
4H	2H	9.81	10.54	10.80	11.52	12.83	9.46	10.19	10.44	11.17	12.47
	3H	11.67	12.28	12.66	13.29	14.61	11.26	11.87	12.26	12.89	14.20
	4H	12.38	12.93	13.38	13.94	15.28	11.96	12.52	12.96	13.53	14.86
	6H	12.89	13.37	13.90	14.40	15.73	12.46	12.94	13.48	13.97	15.31
	8H	13.03	13.48	14.05	14.50	15.86	12.60	13.05	13.62	14.08	15.43
	12H	13.10	13.51	14.14	14.55	15.90	12.66	13.07	13.70	14.11	15.47
8H	4H	12.57	13.02	13.59	14.04	15.39	12.20	12.65	13.22	13.67	15.02
	6H	13.19	13.56	14.23	14.63	15.98	12.82	13.19	13.86	14.25	15.60
	8H	13.41	13.74	14.46	14.79	16.15	13.03	13.35	14.08	14.40	15.77
	12H	13.54	13.82	14.59	14.87	16.28	13.14	13.42	14.19	14.47	15.88
12H	4H	12.55	12.96	13.59	14.00	15.35	12.19	12.60	13.23	13.64	14.99
	6H	13.22	13.55	14.27	14.60	15.97	12.86	13.18	13.91	14.23	15.60
	8H	13.46	13.75	14.51	14.79	16.20	13.09	13.37	14.14	14.42	15.83