

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: P928466

Luminaire Tested: DFN2DIP-HX4F0-120D060US927-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928466
REPORT IS A COMBINATION OF REPORTS P900872 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-120D060US927-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

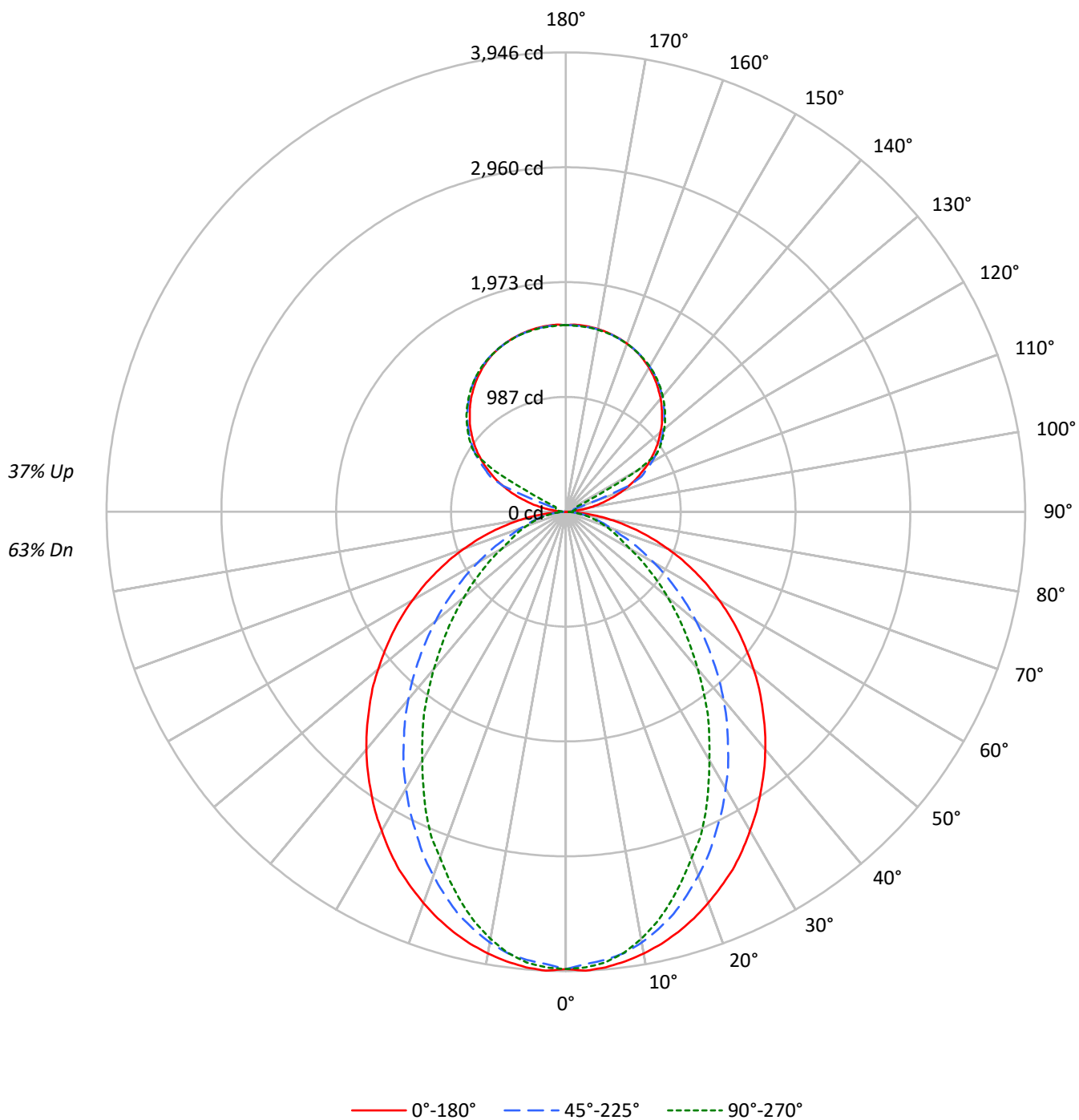
Lumens per Lamp: N/A
Luminaire Lumens: 12782.9 lumens
Efficiency: N/A
Efficacy: 75.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 170.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P928466

CATALOG NUMBER: DFN2DIP-HX4F0-120D060US927-RLLONL

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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2921	2921	2921
5°	2926	2875	2893
10°	2897	2819	2799
15°	2857	2726	2654
20°	2805	2598	2475
25°	2751	2454	2303
30°	2679	2306	2084
35°	2608	2148	1892
40°	2536	1984	1672
45°	2452	1802	1472
50°	2365	1618	1277
55°	2275	1422	1090
60°	2171	1216	897
65°	2050	1008	808
70°	1905	813	731
75°	1722	717	666
80°	1457	602	578
85°	1019	404	435

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2452 cd/sqm

TEST NUMBER: P928466

CATALOG NUMBER: DFN2DIP-HX4F0-120D060US927-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	368.1	2.9
10°-20°	1010.6	7.9
20°-30°	1418.9	11.1
30°-40°	1546.6	12.1
40°-50°	1421.5	11.1
50°-60°	1116.4	8.7
60°-70°	726.7	5.7
70°-80°	374.1	2.9
80°-90°	98.3	0.8
90°-100°	52.9	0.4
100°-110°	197.1	1.5
110°-120°	522.8	4.1
120°-130°	867.2	6.8
130°-140°	921.1	7.2
140°-150°	856.1	6.7
150°-160°	688.3	5.4
160°-170°	443.5	3.5
170°-180°	152.6	1.2
0°-30°	2797.6	21.9
0°-40°	4344.2	34.0
0°-60°	6882.2	53.8
0°-90°	8081.3	63.2
90°-120°	772.9	6.0
90°-150°	3417.2	26.7
90°-180°	4702.0	36.8
0°-180°	12782.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3928	3928	3928	3928	3928	
5°	3928	3910	3864	3896	3885	372
15°	3736	3697	3576	3509	3473	1053
25°	3391	3277	3043	2897	2844	1560
35°	2922	2741	2428	2204	2126	1829
45°	2389	2150	1778	1525	1440	1845
55°	1816	1539	1155	942	875	1623
65°	1226	938	619	498	487	1216
75°	654	405	284	260	256	692
85°	153	78	68	68	68	175
90°	1	14	23	29	31	12
95°	75	37	45	51	50	89
105°	353	388	71	84	88	377
115°	667	687	716	179	95	657
125°	943	959	981	989	992	841
135°	1168	1186	1196	1208	1206	902
145°	1354	1353	1373	1381	1375	847
155°	1491	1481	1495	1502	1492	687
165°	1571	1564	1568	1576	1568	444
175°	1607	1599	1601	1610	1598	153
180°	1604	1604	1604	1604	1604	

TEST NUMBER: P928466

CATALOG NUMBER: DFN2DIP-HX4F0-120D060US927-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3928.0	3928.0	3928.0	3928.0	3928.0
2.5°	3945.7	3928.0	3888.8	3924.6	3917.4
5°	3928.0	3910.3	3863.9	3895.9	3885.4
7.5°	3895.9	3874.8	3825.0	3839.0	3821.2
10°	3853.3	3828.4	3757.5	3746.6	3725.5
12.5°	3800.1	3768.1	3671.9	3650.8	3611.6
15°	3736.0	3696.8	3576.1	3508.6	3473.2
17.5°	3661.3	3604.4	3455.0	3377.0	3320.1
20°	3576.1	3504.8	3327.2	3238.6	3160.1
22.5°	3483.7	3401.9	3195.6	3074.9	3021.7
25°	3391.3	3277.4	3042.8	2897.2	2843.7
27.5°	3281.2	3160.1	2900.6	2733.6	2651.7
30°	3163.9	3028.5	2744.1	2563.1	2466.9
32.5°	3050.0	2886.3	2595.1	2381.7	2292.7
35°	2922.2	2740.7	2428.0	2204.1	2125.6
37.5°	2797.7	2602.0	2271.5	2026.0	1937.4
40°	2666.0	2453.0	2107.9	1855.6	1763.2
42.5°	2531.0	2303.6	1944.6	1681.3	1592.7
45°	2388.8	2150.5	1777.5	1524.8	1439.5
47.5°	2253.8	2001.5	1617.6	1364.9	1286.8
50°	2104.5	1852.2	1461.1	1215.6	1141.3
52.5°	1958.5	1691.9	1311.7	1077.1	1009.6
55°	1816.4	1539.2	1155.2	942.1	874.6
57.5°	1670.7	1386.4	1016.8	817.7	760.7
60°	1521.4	1237.0	870.8	689.8	632.9
62.5°	1375.9	1091.5	746.4	575.9	547.6
65°	1226.5	938.4	618.6	497.9	486.9
67.5°	1084.3	796.1	497.9	437.1	426.6
70°	935.0	657.8	412.2	376.8	362.4
72.5°	792.8	529.5	344.7	316.4	309.3
75°	654.0	405.0	284.4	259.5	256.1
77.5°	515.6	287.7	224.1	209.7	202.5
80°	387.4	206.3	170.4	156.5	156.5
82.5°	270.1	138.8	117.3	110.1	110.1
85°	152.8	78.1	67.5	67.5	67.5
87.5°	56.9	28.3	28.3	24.9	24.9
90°	1.1	13.9	23.1	29.1	31.3
92.5°	29.1	24.4	27.8	30.2	31.3
95°	75.4	37.1	45.2	51.2	49.9
97.5°	135.7	40.6	59.1	62.7	63.8
100°	205.4	46.4	66.1	75.4	77.7
102.5°	282.0	279.7	68.5	81.2	84.7
105°	352.8	387.6	70.8	83.5	88.2
107.5°	435.2	464.1	73.2	85.9	90.5
110°	514.2	538.4	203.1	87.1	91.6

TEST NUMBER: P928466

CATALOG NUMBER: DFN2DIP-HX4F0-120D060US927-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	588.4	609.2	589.5	89.3	92.9
115°	667.3	687.0	716.0	178.8	95.2
117.5°	735.7	758.9	778.7	612.7	308.6
120°	812.4	829.7	850.7	864.5	707.9
122.5°	877.2	895.8	919.1	926.0	927.3
125°	943.4	958.6	980.6	988.7	992.1
127.5°	1003.8	1020.0	1037.5	1049.1	1050.2
130°	1060.6	1079.3	1091.9	1104.8	1103.7
132.5°	1118.7	1133.8	1146.5	1157.0	1155.8
135°	1167.5	1186.1	1196.4	1208.1	1205.7
137.5°	1218.4	1232.4	1244.1	1255.6	1252.2
140°	1268.3	1277.7	1290.4	1300.9	1295.1
142.5°	1310.2	1318.4	1333.4	1342.6	1336.8
145°	1354.3	1353.1	1372.8	1380.9	1375.1
147.5°	1392.5	1389.0	1408.7	1414.5	1410.0
150°	1429.7	1421.6	1440.2	1447.1	1441.3
152.5°	1461.0	1451.7	1469.1	1476.1	1468.0
155°	1491.2	1480.8	1494.7	1501.6	1492.4
157.5°	1515.6	1506.3	1516.8	1524.9	1515.6
160°	1536.5	1529.4	1536.5	1543.4	1535.3
162.5°	1554.9	1548.0	1553.8	1562.0	1551.5
165°	1571.2	1564.4	1567.8	1575.9	1567.8
167.5°	1584.0	1577.0	1580.6	1588.8	1578.2
170°	1594.5	1587.5	1589.9	1597.9	1587.5
172.5°	1601.4	1594.5	1596.8	1605.0	1594.5
175°	1607.2	1599.0	1601.4	1609.5	1597.9
177.5°	1609.5	1601.4	1602.6	1610.8	1600.3
180°	1603.7	1603.7	1603.7	1603.7	1603.7

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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	12.02	12.98	12.87	13.83	14.91	8.00	8.95	8.84	9.81	10.88
	3H	13.71	14.56	14.57	15.43	16.53	9.20	10.05	10.05	10.92	12.02
	4H	14.33	15.13	15.20	16.00	17.11	9.65	10.46	10.53	11.33	12.44
	6H	14.76	15.49	15.64	16.38	17.50	9.98	10.72	10.87	11.60	12.73
	8H	14.89	15.59	15.78	16.49	17.61	10.08	10.78	10.97	11.68	12.80
	12H	14.95	15.62	15.85	16.51	17.66	10.13	10.80	11.02	11.69	12.84
4H	2H	12.06	12.86	12.93	13.74	14.85	8.61	9.41	9.48	10.29	11.40
	3H	13.90	14.57	14.79	15.47	16.60	9.97	10.64	10.86	11.55	12.67
	4H	14.60	15.20	15.49	16.11	17.26	10.53	11.13	11.42	12.04	13.19
	6H	15.12	15.64	16.03	16.57	17.72	10.95	11.48	11.87	12.40	13.56
	8H	15.30	15.79	16.21	16.71	17.87	11.09	11.57	12.00	12.50	13.66
	12H	15.40	15.84	16.33	16.78	17.95	11.16	11.60	12.09	12.54	13.71
8H	4H	14.57	15.06	15.49	15.98	17.15	10.82	11.30	11.73	12.22	13.39
	6H	15.15	15.55	16.09	16.51	17.68	11.34	11.74	12.28	12.71	13.87
	8H	15.36	15.72	16.32	16.67	17.86	11.53	11.89	12.48	12.84	14.03
	12H	15.51	15.82	16.46	16.77	18.00	11.66	11.97	12.61	12.92	14.15
12H	4H	14.53	14.97	15.47	15.91	17.08	10.83	11.26	11.76	12.21	13.38
	6H	15.12	15.48	16.07	16.43	17.62	11.39	11.75	12.34	12.70	13.89
	8H	15.35	15.66	16.30	16.61	17.84	11.61	11.92	12.56	12.87	14.10

END OF REPORT