

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: P916119

Luminaire Tested: DFN2DIP-HX2F0-050D020US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916119
REPORT IS A COMBINATION OF REPORTS P900677 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-050D020US930-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

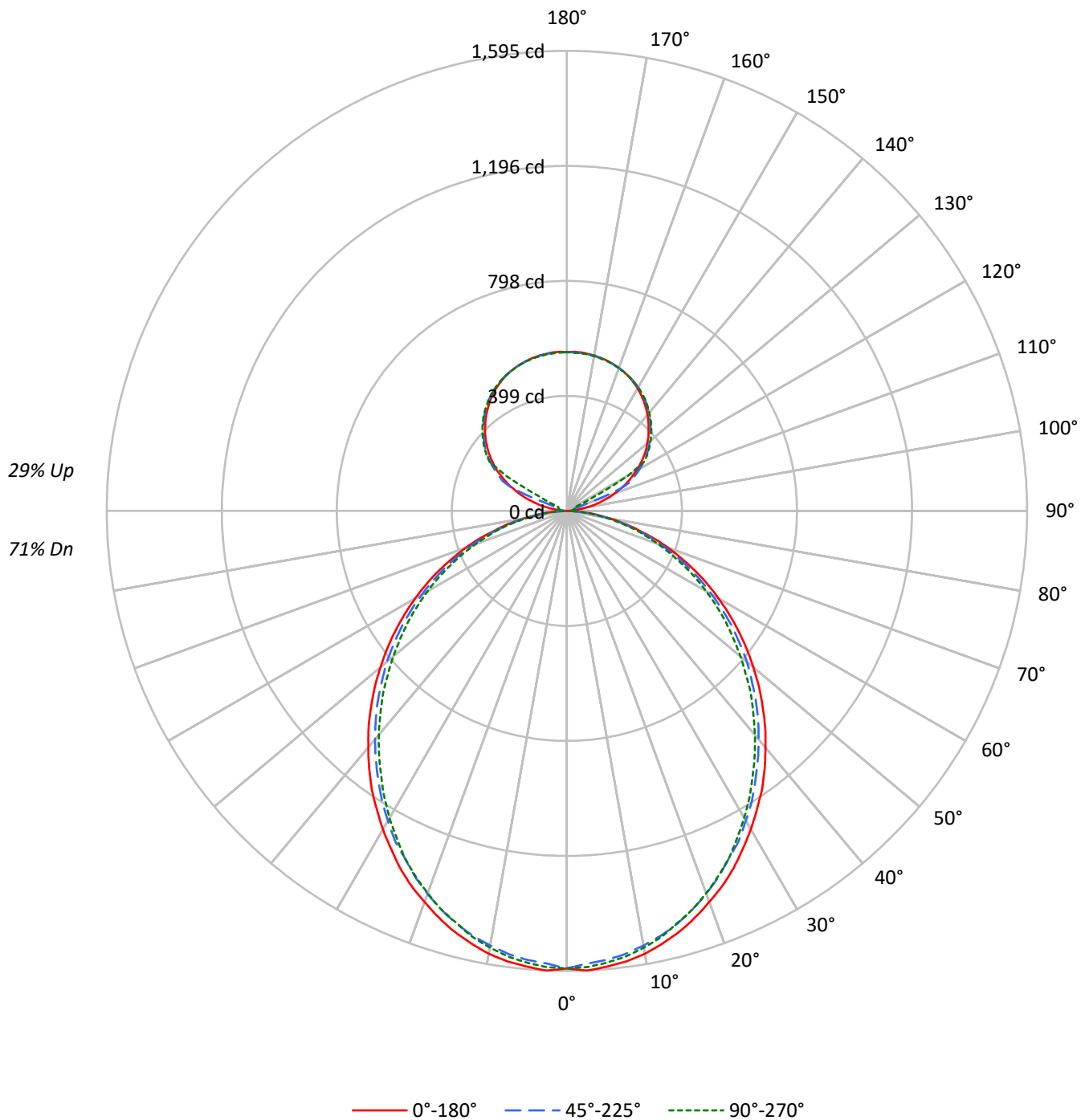
Lumens per Lamp: N/A
Luminaire Lumens: 5650.0 lumens
Efficiency: N/A
Efficacy: 90.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 62.8
Input Voltage (V): 120
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: P916119

CATALOG NUMBER: DFN2DIP-HX2F0-050D020US930-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P916119

CATALOG NUMBER: DFN2DIP-HX2F0-050D020US930-FLLONL

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	112	112	112	112	106	106	106	106	95	95	95	85	85	85	76	76	76
1	103	98	94	90	97	93	90	86	84	81	78	75	73	71	67	66	64
2	93	86	79	74	88	81	76	71	73	69	65	66	62	59	59	56	54
3	85	75	68	62	80	72	65	59	65	59	55	58	54	50	52	49	46
4	78	67	59	52	74	64	56	50	58	52	47	52	47	43	47	43	40
5	72	60	51	45	68	57	49	44	52	45	40	47	42	38	42	38	35
6	66	54	45	39	63	51	44	38	47	40	35	42	37	33	38	34	31
7	61	49	40	35	58	47	39	34	42	36	31	39	33	29	35	31	27
8	57	44	36	31	54	42	35	30	39	33	28	35	30	26	32	28	24
9	53	41	33	28	50	39	32	27	36	30	25	33	27	24	30	25	22
10	50	37	30	25	47	36	29	24	33	27	23	30	25	21	28	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3737	3737	3737
5°	3737	3676	3703
10°	3701	3618	3646
15°	3641	3549	3561
20°	3561	3458	3474
25°	3482	3350	3375
30°	3384	3249	3250
35°	3291	3132	3119
40°	3177	3013	2993
45°	3063	2893	2865
50°	2939	2767	2717
55°	2808	2621	2578
60°	2660	2450	2420
65°	2497	2271	2233
70°	2290	2053	2032
75°	2006	1791	1836
80°	1661	1458	1481
85°	1128	915	917

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3063 cd/sqm

TEST NUMBER: P916119

CATALOG NUMBER: DFN2DIP-HX2F0-050D020US930-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.3	2.6
10°-20°	420.0	7.4
20°-30°	617.3	10.9
30°-40°	717.0	12.7
40°-50°	716.1	12.7
50°-60°	624.4	11.1
60°-70°	461.6	8.2
70°-80°	261.1	4.6
80°-90°	69.9	1.2
90°-100°	18.1	0.3
100°-110°	67.6	1.2
110°-120°	179.4	3.2
120°-130°	297.6	5.3
130°-140°	316.1	5.6
140°-150°	293.8	5.2
150°-160°	236.2	4.2
160°-170°	152.2	2.7
170°-180°	52.4	0.9
0°-30°	1186.6	21.0
0°-40°	1903.6	33.7
0°-60°	3244.1	57.4
0°-90°	4036.7	71.4
90°-120°	265.2	4.7
90°-150°	1172.6	20.8
90°-180°	1613.0	28.5
0°-180°	5650.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1586	1586	1586	1586	1586	
5°	1586	1580	1563	1576	1573	151
15°	1510	1501	1481	1487	1480	425
25°	1367	1354	1328	1332	1328	629
35°	1179	1164	1139	1130	1123	736
45°	959	949	926	909	903	740
55°	726	717	698	680	673	649
65°	490	480	465	452	444	484
75°	256	253	246	236	240	273
85°	62	61	60	55	53	70
90°	0	5	8	10	11	5
95°	26	13	16	18	17	31
105°	121	133	24	29	30	129
115°	229	236	246	61	33	225
125°	324	329	336	339	340	289
135°	401	407	410	415	414	309
145°	465	464	471	474	472	291
155°	512	508	513	515	512	236
165°	539	537	538	541	538	152
175°	552	549	550	552	548	52
180°	550	550	550	550	550	

TEST NUMBER: P916119

CATALOG NUMBER: DFN2DIP-HX2F0-050D020US930-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1586.2	1586.2	1586.2	1586.2	1586.2
2.5°	1595.4	1587.8	1571.0	1586.2	1583.3
5°	1586.2	1580.2	1563.3	1575.5	1572.6
7.5°	1575.5	1566.4	1549.6	1561.9	1558.9
10°	1558.9	1548.2	1529.9	1542.0	1537.5
12.5°	1535.9	1526.8	1508.5	1516.1	1513.0
15°	1509.9	1500.9	1481.0	1487.2	1479.5
17.5°	1477.9	1468.8	1448.9	1456.5	1448.9
20°	1442.8	1433.8	1412.4	1416.9	1411.0
22.5°	1407.9	1394.1	1374.2	1374.2	1371.1
25°	1366.6	1354.5	1328.5	1331.5	1328.5
27.5°	1320.8	1310.1	1290.4	1285.8	1278.2
30°	1275.1	1262.9	1240.1	1235.5	1229.4
32.5°	1226.3	1217.2	1192.8	1183.6	1177.5
35°	1179.0	1163.8	1139.4	1130.2	1122.6
37.5°	1125.6	1111.9	1087.4	1076.8	1069.2
40°	1070.8	1058.5	1034.0	1020.4	1014.3
42.5°	1017.4	1005.1	980.8	965.4	956.3
45°	959.4	948.8	925.8	909.1	902.9
47.5°	902.9	892.3	867.9	851.0	842.0
50°	843.4	835.8	814.5	793.1	785.5
52.5°	785.5	774.8	755.0	738.3	727.6
55°	726.1	716.9	698.5	680.3	672.7
57.5°	666.5	658.9	639.0	620.8	614.6
60°	607.0	601.0	579.7	562.8	558.3
62.5°	549.1	538.4	523.2	507.9	501.8
65°	489.7	480.5	465.2	451.5	443.8
67.5°	428.7	420.9	407.3	396.6	390.4
70°	372.2	366.1	352.3	341.6	335.7
72.5°	314.3	308.1	300.5	289.8	285.3
75°	256.2	253.2	245.5	236.4	239.5
77.5°	204.4	198.2	195.2	190.6	186.1
80°	152.6	151.0	147.9	143.4	140.3
82.5°	103.7	103.7	102.2	96.1	96.1
85°	62.5	61.0	59.5	54.9	53.4
87.5°	27.5	24.5	21.4	16.8	15.2
90°	0.4	4.8	7.9	9.9	10.8
92.5°	9.9	8.4	9.5	10.4	10.8
95°	25.8	12.7	15.5	17.5	17.1
97.5°	46.6	13.9	20.3	21.5	21.9
100°	70.5	15.9	22.7	25.8	26.7
102.5°	96.8	96.0	23.5	27.9	29.1
105°	121.1	133.0	24.3	28.6	30.2
107.5°	149.4	159.2	25.1	29.4	31.1
110°	176.4	184.7	69.7	29.9	31.5

TEST NUMBER: P916119

CATALOG NUMBER: DFN2DIP-HX2F0-050D020US930-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	201.9	209.0	202.3	30.7	31.9
115°	228.9	235.7	245.7	61.3	32.7
117.5°	252.4	260.4	267.2	210.3	105.9
120°	278.8	284.7	291.9	296.7	242.9
122.5°	301.0	307.4	315.4	317.7	318.2
125°	323.8	328.9	336.5	339.2	340.5
127.5°	344.5	350.0	356.0	360.0	360.4
130°	363.9	370.3	374.7	379.1	378.7
132.5°	383.8	389.1	393.4	397.0	396.6
135°	400.6	407.0	410.5	414.6	413.8
137.5°	418.1	422.9	426.9	430.9	429.7
140°	435.2	438.5	442.8	446.4	444.4
142.5°	449.6	452.4	457.5	460.7	458.7
145°	464.7	464.3	471.1	473.9	471.9
147.5°	477.8	476.6	483.4	485.3	483.8
150°	490.6	487.8	494.2	496.5	494.6
152.5°	501.3	498.1	504.1	506.5	503.7
155°	511.7	508.1	512.9	515.3	512.1
157.5°	520.1	516.9	520.5	523.3	520.1
160°	527.3	524.8	527.3	529.6	526.8
162.5°	533.5	531.2	533.2	536.0	532.4
165°	539.2	536.8	537.9	540.8	537.9
167.5°	543.6	541.1	542.3	545.2	541.5
170°	547.1	544.7	545.5	548.3	544.7
172.5°	549.5	547.1	548.0	550.7	547.1
175°	551.5	548.7	549.5	552.3	548.3
177.5°	552.3	549.5	549.9	552.7	549.1
180°	550.3	550.3	550.3	550.3	550.3

TEST NUMBER: P916119

CATALOG NUMBER: DFN2DIP-HX2F0-050D020US930-FLLONL

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	13.49	14.59	14.24	15.36	16.29	13.07	14.17	13.82	14.94	15.86
	3H	15.15	16.13	15.91	16.91	17.87	14.69	15.67	15.45	16.45	17.41
	4H	15.73	16.66	16.51	17.45	18.42	15.27	16.20	16.05	16.99	17.96
	6H	16.12	16.98	16.91	17.77	18.76	15.66	16.52	16.45	17.32	18.30
	8H	16.22	17.04	17.02	17.86	18.84	15.76	16.58	16.57	17.40	18.38
	12H	16.27	17.05	17.08	17.86	18.87	15.81	16.59	16.62	17.40	18.41
4H	2H	13.97	14.90	14.76	15.69	16.66	13.64	14.56	14.42	15.35	16.32
	3H	15.83	16.61	16.63	17.43	18.42	15.45	16.22	16.24	17.05	18.03
	4H	16.54	17.24	17.35	18.06	19.08	16.14	16.85	16.95	17.67	18.68
	6H	17.04	17.65	17.87	18.50	19.52	16.64	17.26	17.47	18.10	19.12
	8H	17.18	17.75	18.01	18.60	19.63	16.79	17.36	17.62	18.20	19.23
	12H	17.26	17.77	18.11	18.63	19.67	16.85	17.36	17.70	18.23	19.27
8H	4H	16.74	17.31	17.57	18.15	19.19	16.39	16.96	17.22	17.80	18.83
	6H	17.35	17.82	18.21	18.71	19.74	17.00	17.47	17.86	18.36	19.39
	8H	17.56	17.98	18.43	18.86	19.91	17.20	17.62	18.07	18.50	19.55
	12H	17.68	18.05	18.56	18.93	20.03	17.31	17.69	18.19	18.56	19.66
12H	4H	16.73	17.25	17.58	18.11	19.15	16.39	16.90	17.24	17.77	18.81
	6H	17.38	17.80	18.25	18.68	19.73	17.04	17.46	17.91	18.34	19.39
	8H	17.61	17.98	18.49	18.85	19.96	17.27	17.64	18.14	18.51	19.61