

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: P913393

Luminaire Tested: DFN2DIP-HX2F0-050D020US927-RLLONL

Issue Date: 11/21/2024

**Test Information**

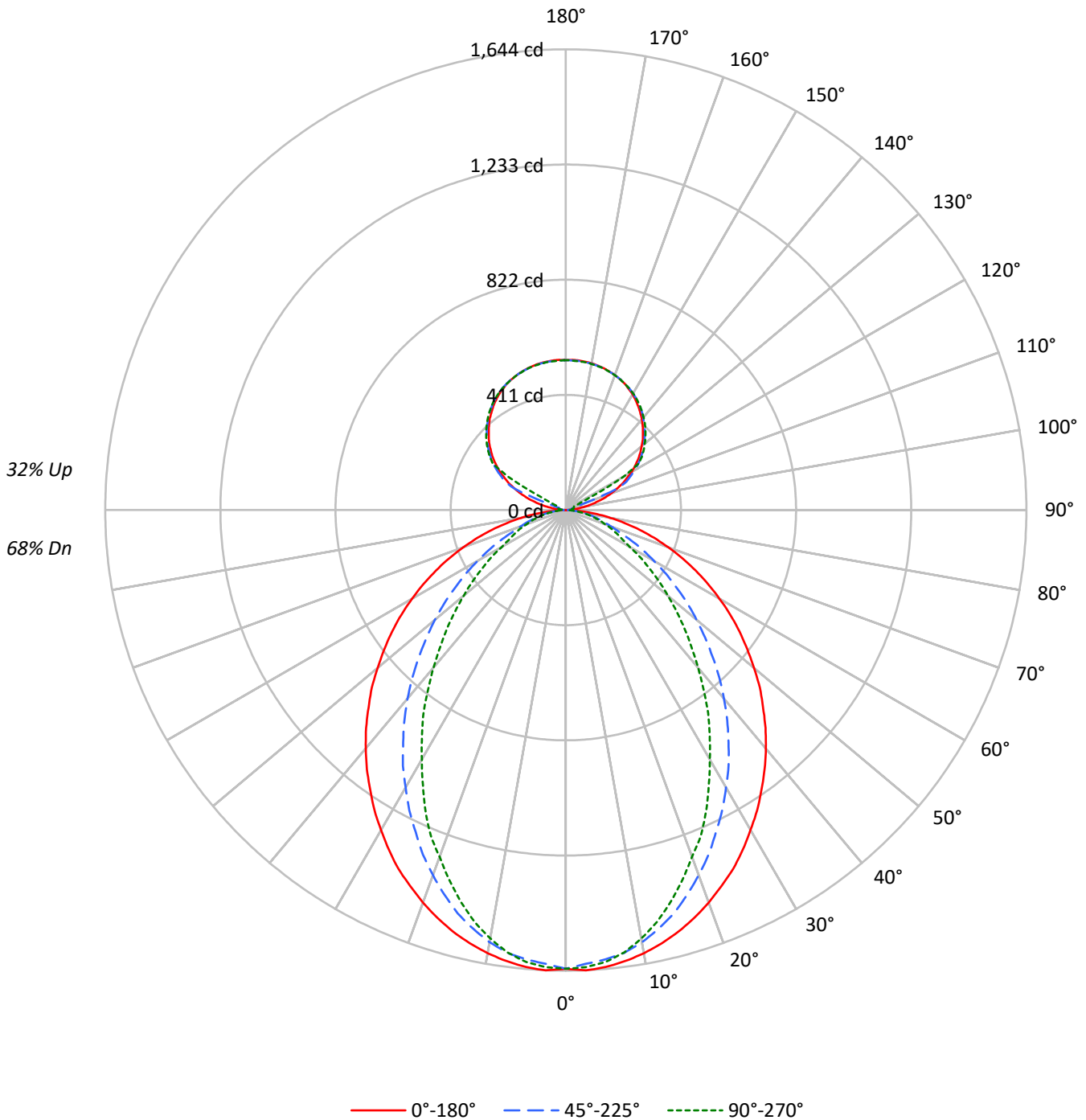
Test Method: LM-79-2019  
Report Number: P913393  
REPORT IS A COMBINATION OF REPORTS P900678 AND P897595  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-HX2F0-050D020US927-RLONL  
Description: 2 foot, 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: 4935.3 lumens  
Efficiency: N/A  
Efficacy: 78.6 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
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):  
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: P913393  
CATALOG NUMBER: DFN2DIP-HX2F0-050D020US927-RLLONL

### Luminous Intensity Polar Plot





TEST NUMBER: P913393  
 CATALOG NUMBER: DFN2DIP-HX2F0-050D020US927-RLLONL

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	111	111	111	111	105	105	105	105	93	93	93	83	83	83	73	73	73	68			68
1	103	98	95	91	97	93	90	87	83	81	78	74	72	70	65	64	63	59			59
2	94	87	81	76	88	82	77	72	74	69	66	66	63	60	58	56	54	50			50
3	86	77	70	64	81	73	66	61	66	60	56	59	55	51	52	49	47	43			43
4	79	69	61	55	75	65	58	53	59	53	49	53	48	45	47	44	41	38			38
5	73	62	53	48	69	59	51	46	53	47	42	48	43	39	43	39	36	33			33
6	68	56	47	42	64	53	46	40	48	42	38	43	39	35	39	35	32	30			30
7	63	50	43	37	59	48	41	36	44	38	33	40	35	31	36	32	29	26			26
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26	24			24
9	55	42	35	30	52	41	34	29	37	31	27	34	29	25	31	27	24	22			22
10	51	39	32	27	48	37	31	26	34	29	25	31	27	23	29	25	22	20			20

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3857	3857	3857
5°	3857	3787	3813
10°	3813	3703	3682
15°	3754	3572	3484
20°	3679	3395	3243
25°	3601	3198	3010
30°	3499	2997	2718
35°	3399	2781	2461
40°	3297	2559	2169
45°	3179	2315	1903
50°	3056	2068	1645
55°	2928	1806	1397
60°	2779	1534	1143
65°	2606	1258	1022
70°	2398	1001	915
75°	2135	865	818
80°	1756	701	688
85°	1150	432	482

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3179 cd/sqm



TEST NUMBER: P913393

CATALOG NUMBER: DFN2DIP-HX2F0-050D020US927-RLLONL

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	153.4	3.1
10°-20°	421.2	8.5
20°-30°	591.3	12.0
30°-40°	644.6	13.1
40°-50°	592.4	12.0
50°-60°	465.3	9.4
60°-70°	302.9	6.1
70°-80°	155.9	3.2
80°-90°	40.8	0.8
90°-100°	17.6	0.4
100°-110°	65.7	1.3
110°-120°	174.3	3.5
120°-130°	289.1	5.9
130°-140°	307.1	6.2
140°-150°	285.4	5.8
150°-160°	229.5	4.6
160°-170°	147.9	3.0
170°-180°	50.9	1.0
0°-30°	1165.9	23.6
0°-40°	1810.5	36.7
0°-60°	2868.2	58.1
0°-90°	3367.7	68.2
90°-120°	257.7	5.2
90°-150°	1139.3	23.1
90°-180°	1568.0	31.8
0°-180°	4935.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1637	1637	1637	1637	1637	
5°	1637	1630	1610	1624	1619	155
15°	1557	1541	1490	1462	1448	439
25°	1413	1366	1268	1207	1185	650
35°	1218	1142	1012	918	886	762
45°	996	896	741	636	600	769
55°	757	641	481	393	364	676
65°	511	391	258	208	203	507
75°	273	169	118	108	107	288
85°	64	33	28	28	28	73
90°	0	5	8	10	10	5
95°	25	12	15	17	17	30
105°	118	129	24	28	29	126
115°	222	229	239	60	32	219
125°	315	320	327	330	331	281
135°	389	396	399	403	402	301
145°	452	451	458	460	458	282
155°	497	494	498	501	498	229
165°	524	522	523	526	523	148
175°	536	533	534	537	533	51
180°	535	535	535	535	535	



TEST NUMBER: P913393

CATALOG NUMBER: DFN2DIP-HX2F0-050D020US927-RLLONL

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1637.0	1637.0	1637.0	1637.0	1637.0
2.5°	1644.4	1637.0	1620.7	1635.6	1632.6
5°	1637.0	1629.7	1610.3	1623.7	1619.3
7.5°	1623.7	1614.9	1594.1	1600.0	1592.5
10°	1605.9	1595.5	1566.0	1561.5	1552.6
12.5°	1583.7	1570.4	1530.3	1521.5	1505.1
15°	1557.0	1540.7	1490.4	1462.3	1447.5
17.5°	1525.9	1502.2	1439.9	1407.4	1383.6
20°	1490.4	1460.7	1386.6	1349.7	1317.0
22.5°	1451.9	1417.8	1331.8	1281.5	1259.3
25°	1413.3	1365.9	1268.1	1207.4	1185.1
27.5°	1367.5	1317.0	1208.9	1139.2	1105.2
30°	1318.6	1262.2	1143.7	1068.2	1028.1
32.5°	1271.1	1202.9	1081.6	992.6	955.5
35°	1217.8	1142.2	1011.9	918.5	885.9
37.5°	1165.9	1084.4	946.7	844.4	807.5
40°	1111.1	1022.3	878.4	773.3	734.8
42.5°	1054.9	960.0	810.4	700.7	663.8
45°	995.6	896.3	740.8	635.5	599.9
47.5°	939.3	834.2	674.1	568.9	536.3
50°	877.1	771.9	608.9	506.6	475.6
52.5°	816.3	705.1	546.7	448.9	420.8
55°	757.0	641.4	481.4	392.6	364.5
57.5°	696.3	577.8	423.7	340.8	317.0
60°	634.1	515.6	362.9	287.5	263.7
62.5°	573.4	454.9	311.1	240.0	228.2
65°	511.1	391.1	257.8	207.5	203.0
67.5°	451.9	331.8	207.5	182.2	177.8
70°	389.7	274.1	171.8	157.0	151.1
72.5°	330.4	220.7	143.7	131.9	128.9
75°	272.6	168.8	118.5	108.1	106.7
77.5°	214.8	119.9	93.4	87.4	84.4
80°	161.4	86.0	71.1	65.2	65.2
82.5°	112.6	57.8	48.9	45.9	45.9
85°	63.7	32.6	28.1	28.1	28.1
87.5°	23.8	11.8	11.8	10.4	10.4
90°	0.4	4.7	7.7	9.7	10.5
92.5°	9.7	8.2	9.3	10.1	10.5
95°	25.1	12.4	15.1	17.0	16.6
97.5°	45.2	13.5	19.7	20.9	21.3
100°	68.5	15.4	22.0	25.1	25.9
102.5°	94.0	93.2	22.8	27.1	28.3
105°	117.6	129.2	23.6	27.8	29.4
107.5°	145.1	154.7	24.4	28.6	30.2
110°	171.4	179.5	67.7	29.1	30.6



TEST NUMBER: P913393

CATALOG NUMBER: DFN2DIP-HX2F0-050D020US927-RLONL

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	196.1	203.1	196.5	29.8	31.0
115°	222.4	229.0	238.8	59.6	31.8
117.5°	245.3	253.0	259.6	204.3	102.9
120°	270.8	276.6	283.6	288.3	236.0
122.5°	292.5	298.7	306.4	308.7	309.2
125°	314.6	319.6	326.9	329.6	330.8
127.5°	334.7	340.1	345.9	349.7	350.1
130°	353.6	359.8	364.1	368.4	368.0
132.5°	373.0	378.0	382.2	385.7	385.4
135°	389.3	395.5	398.9	402.8	402.0
137.5°	406.2	410.9	414.8	418.7	417.5
140°	422.9	426.0	430.2	433.7	431.8
142.5°	436.8	439.6	444.6	447.7	445.7
145°	451.5	451.1	457.7	460.4	458.5
147.5°	464.3	463.1	469.7	471.6	470.1
150°	476.7	474.0	480.1	482.4	480.5
152.5°	487.1	484.0	489.8	492.2	489.4
155°	497.2	493.7	498.4	500.7	497.6
157.5°	505.3	502.2	505.7	508.4	505.3
160°	512.3	509.9	512.3	514.6	511.9
162.5°	518.4	516.1	518.1	520.8	517.3
165°	523.9	521.6	522.7	525.5	522.7
167.5°	528.1	525.8	527.0	529.7	526.2
170°	531.6	529.3	530.0	532.7	529.3
172.5°	533.9	531.6	532.4	535.1	531.6
175°	535.8	533.1	533.9	536.6	532.7
177.5°	536.6	533.9	534.3	537.0	533.5
180°	534.7	534.7	534.7	534.7	534.7



TEST NUMBER: P913393  
 CATALOG NUMBER: DFN2DIP-HX2F0-050D020US927-RLONL

**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	13.26	14.26	14.05	15.07	16.06	9.24	10.24	10.03	11.05	12.04
	3H	14.92	15.82	15.72	16.64	17.65	10.42	11.32	11.23	12.14	13.16
	4H	15.52	16.37	16.34	17.19	18.22	10.87	11.72	11.69	12.54	13.57
	6H	15.93	16.71	16.76	17.54	18.59	11.18	11.97	12.02	12.80	13.84
	8H	16.05	16.79	16.89	17.64	18.69	11.27	12.01	12.11	12.87	13.91
	12H	16.11	16.82	16.96	17.66	18.73	11.31	12.02	12.16	12.87	13.93
4H	2H	13.29	14.14	14.12	14.96	15.99	9.84	10.69	10.67	11.51	12.54
	3H	15.11	15.81	15.94	16.67	17.71	11.19	11.89	12.02	12.75	13.79
	4H	15.79	16.43	16.64	17.28	18.35	11.73	12.37	12.58	13.22	14.29
	6H	16.29	16.84	17.15	17.72	18.80	12.14	12.69	13.00	13.57	14.65
	8H	16.45	16.97	17.32	17.84	18.93	12.26	12.77	13.13	13.65	14.74
	12H	16.54	17.00	17.43	17.90	18.99	12.32	12.79	13.21	13.68	14.77
8H	4H	15.76	16.28	16.63	17.15	18.24	12.00	12.52	12.87	13.40	14.48
	6H	16.31	16.73	17.20	17.65	18.74	12.51	12.93	13.40	13.85	14.94
	8H	16.51	16.89	17.42	17.80	18.90	12.68	13.06	13.59	13.97	15.08
	12H	16.64	16.97	17.55	17.87	19.03	12.80	13.13	13.71	14.03	15.19
12H	4H	15.72	16.18	16.61	17.08	18.17	12.01	12.48	12.90	13.37	14.47
	6H	16.28	16.66	17.19	17.57	18.68	12.55	12.93	13.46	13.84	14.94
	8H	16.49	16.83	17.40	17.73	18.89	12.75	13.08	13.66	13.99	15.15