

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: P927490

Luminaire Tested: DFN2DIP-HX4F0-120D050US835-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927490
REPORT IS A COMBINATION OF REPORTS P900854 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-120D050US835-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

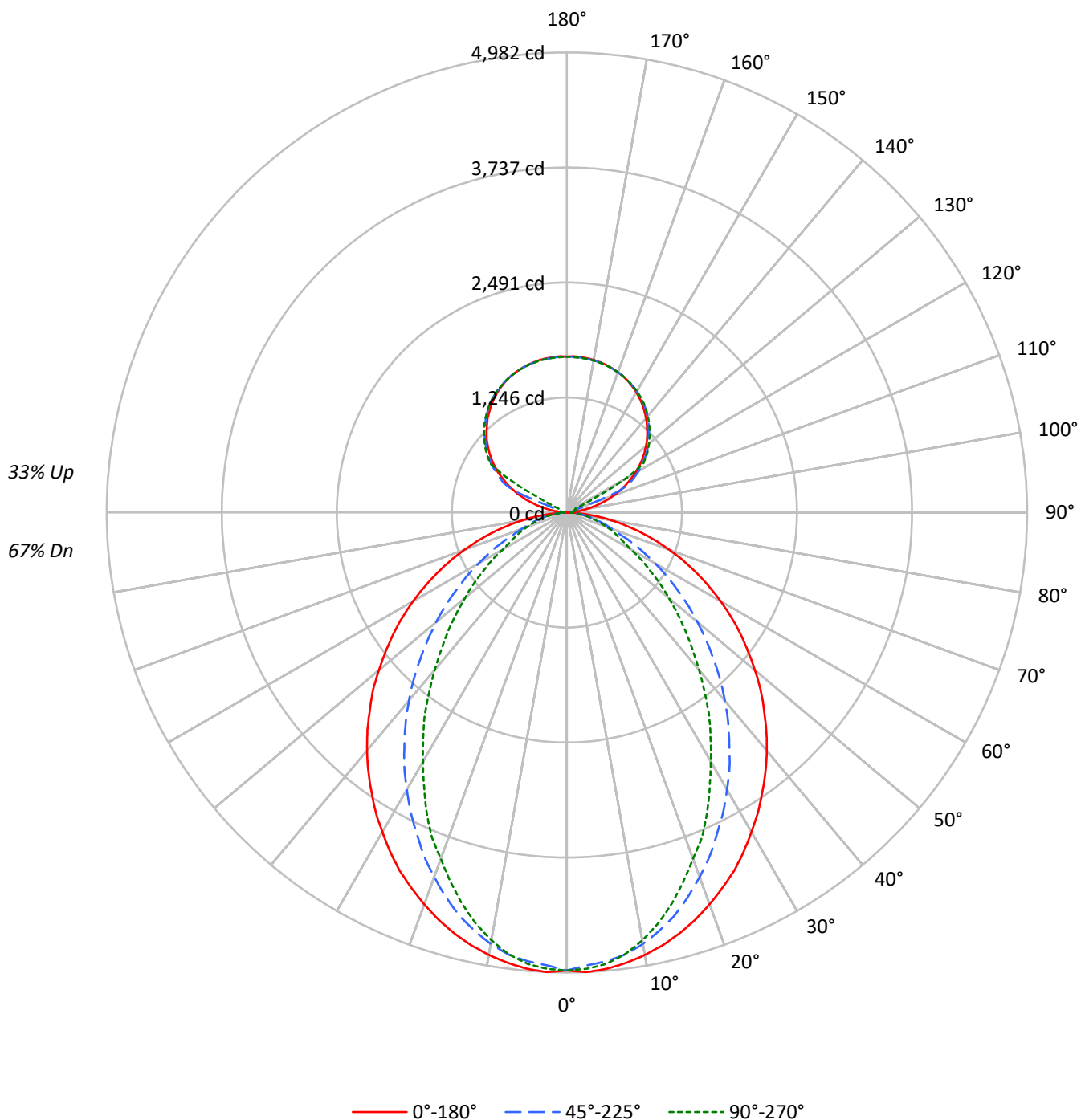
Lumens per Lamp: N/A
Luminaire Lumens: 15150.0 lumens
Efficiency: N/A
Efficacy: 92.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 163.8
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: P927490

CATALOG NUMBER: DFN2DIP-HX4F0-120D050US835-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P927490

CATALOG NUMBER: DFN2DIP-HX4F0-120D050US835-RLLONL

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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	72	72	72
1	102	98	94	91	96	93	89	86	83	80	78	73	71	70	65	63	62
2	94	86	80	75	88	82	77	72	73	69	66	65	62	59	58	55	53
3	86	77	69	64	81	73	66	61	65	60	56	58	54	51	52	49	46
4	79	68	61	55	74	65	58	52	58	53	48	52	48	44	47	43	40
5	73	61	53	47	69	58	51	46	53	47	42	47	43	39	42	39	36
6	67	55	47	42	63	53	45	40	48	42	37	43	38	34	39	35	32
7	63	50	42	37	59	48	41	36	44	38	33	39	35	31	36	32	28
8	58	46	38	33	55	44	37	32	40	34	30	36	31	28	33	29	26
9	54	42	35	30	51	40	33	29	37	31	27	34	29	25	30	26	23
10	51	39	32	27	48	37	31	26	34	28	25	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3688	3688	3688
5°	3694	3630	3653
10°	3658	3559	3534
15°	3608	3441	3350
20°	3541	3280	3125
25°	3473	3098	2907
30°	3382	2912	2631
35°	3293	2712	2389
40°	3202	2505	2111
45°	3096	2275	1859
50°	2987	2043	1613
55°	2873	1795	1376
60°	2741	1536	1133
65°	2589	1272	1020
70°	2405	1026	923
75°	2174	906	840
80°	1839	761	729
85°	1286	510	549

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3096 cd/sqm

TEST NUMBER: P927490

CATALOG NUMBER: DFN2DIP-HX4F0-120D050US835-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	464.8	3.1
10°-20°	1276.0	8.4
20°-30°	1791.5	11.8
30°-40°	1952.8	12.9
40°-50°	1794.9	11.8
50°-60°	1409.6	9.3
60°-70°	917.5	6.1
70°-80°	472.3	3.1
80°-90°	123.5	0.8
90°-100°	55.7	0.4
100°-110°	207.4	1.4
110°-120°	550.1	3.6
120°-130°	912.4	6.0
130°-140°	969.2	6.4
140°-150°	900.8	5.9
150°-160°	724.2	4.8
160°-170°	466.6	3.1
170°-180°	160.6	1.1
0°-30°	3532.3	23.3
0°-40°	5485.2	36.2
0°-60°	8689.6	57.4
0°-90°	10203.0	67.3
90°-120°	813.2	5.4
90°-150°	3595.6	23.7
90°-180°	4947.0	32.7
0°-180°	15150.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4960	4960	4960	4960	4960	
5°	4960	4937	4879	4919	4906	470
15°	4717	4668	4515	4430	4385	1329
25°	4282	4138	3842	3658	3590	1969
35°	3690	3460	3066	2783	2684	2309
45°	3016	2715	2244	1925	1818	2329
55°	2293	1943	1459	1190	1104	2049
65°	1549	1185	781	629	615	1535
75°	826	511	359	328	323	873
85°	193	99	85	85	85	221
90°	1	15	24	31	33	14
95°	79	39	48	54	52	94
105°	371	408	74	88	93	397
115°	702	723	753	188	100	691
125°	993	1009	1032	1040	1044	885
135°	1228	1248	1259	1271	1269	949
145°	1425	1424	1444	1453	1447	891
155°	1569	1558	1573	1580	1570	723
165°	1653	1646	1650	1658	1650	467
175°	1691	1682	1685	1694	1681	161
180°	1687	1687	1687	1687	1687	

TEST NUMBER: P927490

CATALOG NUMBER: DFN2DIP-HX4F0-120D050US835-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4959.6	4959.6	4959.6	4959.6	4959.6
2.5°	4982.0	4959.6	4910.1	4955.3	4946.2
5°	4959.6	4937.2	4878.6	4919.1	4905.8
7.5°	4919.1	4892.4	4829.6	4847.2	4824.8
10°	4865.3	4833.9	4744.3	4730.5	4703.9
12.5°	4798.1	4757.7	4636.2	4609.6	4560.1
15°	4717.2	4667.7	4515.3	4430.0	4385.3
17.5°	4622.9	4551.0	4362.4	4263.9	4192.0
20°	4515.3	4425.3	4201.0	4089.1	3990.0
22.5°	4398.6	4295.3	4034.8	3882.4	3815.3
25°	4282.0	4138.1	3841.9	3658.1	3590.5
27.5°	4142.9	3990.0	3662.4	3451.5	3348.1
30°	3994.8	3823.9	3464.8	3236.2	3114.8
32.5°	3851.0	3644.3	3276.7	3007.2	2894.8
35°	3689.6	3460.5	3065.7	2782.9	2683.8
37.5°	3532.4	3285.3	2868.1	2558.1	2446.2
40°	3366.2	3097.2	2661.5	2342.9	2226.2
42.5°	3195.7	2908.6	2455.3	2122.9	2011.0
45°	3016.2	2715.3	2244.3	1925.3	1817.6
47.5°	2845.7	2527.2	2042.4	1723.4	1624.8
50°	2657.2	2338.6	1844.8	1534.8	1441.0
52.5°	2472.9	2136.2	1656.2	1360.0	1274.8
55°	2293.4	1943.4	1458.6	1189.5	1104.3
57.5°	2109.5	1750.5	1283.8	1032.4	960.5
60°	1921.0	1561.9	1099.5	871.0	799.1
62.5°	1737.2	1378.1	942.4	727.2	691.4
65°	1548.6	1184.8	781.0	628.6	614.8
67.5°	1369.1	1005.2	628.6	551.9	538.6
70°	1180.5	830.5	520.5	475.7	457.6
72.5°	1001.0	668.6	435.2	399.5	390.5
75°	825.7	511.4	359.1	327.6	323.3
77.5°	651.0	363.3	282.9	264.8	255.7
80°	489.1	260.5	215.2	197.6	197.6
82.5°	341.0	175.2	148.1	139.0	139.0
85°	192.9	98.6	85.2	85.2	85.2
87.5°	71.9	35.7	35.7	31.4	31.4
90°	1.2	14.6	24.4	30.6	32.9
92.5°	30.6	25.7	29.3	31.8	32.9
95°	79.3	39.0	47.6	53.8	52.5
97.5°	142.8	42.8	62.2	66.0	67.1
100°	216.2	48.9	69.6	79.3	81.8
102.5°	296.7	294.3	72.1	85.4	89.2
105°	371.2	407.9	74.5	87.9	92.8
107.5°	457.9	488.3	77.0	90.3	95.3
110°	541.0	566.5	213.7	91.6	96.4

TEST NUMBER: P927490

CATALOG NUMBER: DFN2DIP-HX4F0-120D050US835-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	619.1	641.0	620.3	94.0	97.7
115°	702.1	722.8	753.4	188.1	100.2
117.5°	774.1	798.5	819.4	644.6	324.8
120°	854.7	873.0	895.0	909.7	744.8
122.5°	923.0	942.6	967.1	974.4	975.7
125°	992.6	1008.6	1031.8	1040.3	1044.0
127.5°	1056.1	1073.2	1091.7	1103.8	1105.0
130°	1116.0	1135.6	1148.9	1162.4	1161.3
132.5°	1177.1	1193.0	1206.3	1217.4	1216.2
135°	1228.4	1248.0	1258.8	1271.2	1268.7
137.5°	1282.0	1296.7	1309.0	1321.2	1317.6
140°	1334.5	1344.4	1357.7	1368.7	1362.7
142.5°	1378.6	1387.2	1403.0	1412.7	1406.6
145°	1425.0	1423.7	1444.4	1453.0	1446.9
147.5°	1465.2	1461.5	1482.3	1488.4	1483.6
150°	1504.3	1495.8	1515.3	1522.6	1516.5
152.5°	1537.2	1527.5	1545.8	1553.2	1544.6
155°	1569.0	1558.1	1572.7	1580.0	1570.3
157.5°	1594.6	1584.9	1595.9	1604.5	1594.6
160°	1616.7	1609.3	1616.7	1623.9	1615.4
162.5°	1636.1	1628.9	1634.9	1643.5	1632.5
165°	1653.2	1646.0	1649.6	1658.1	1649.6
167.5°	1666.7	1659.3	1663.1	1671.6	1660.6
170°	1677.7	1670.3	1672.8	1681.3	1670.3
172.5°	1685.0	1677.7	1680.2	1688.7	1677.7
175°	1691.1	1682.5	1685.0	1693.5	1681.3
177.5°	1693.5	1685.0	1686.3	1694.8	1683.8
180°	1687.4	1687.4	1687.4	1687.4	1687.4

TEST NUMBER: P927490

CATALOG NUMBER: DFN2DIP-HX4F0-120D050US835-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	13.17	14.16	13.97	14.98	15.98	9.14	10.13	9.94	10.95	11.95
	3H	14.86	15.75	15.67	16.57	17.61	10.34	11.23	11.16	12.06	13.09
	4H	15.47	16.31	16.30	17.15	18.19	10.80	11.64	11.63	12.48	13.52
	6H	15.90	16.68	16.75	17.52	18.58	11.13	11.91	11.97	12.75	13.80
	8H	16.04	16.77	16.89	17.63	18.69	11.23	11.96	12.08	12.82	13.88
	12H	16.10	16.80	16.96	17.66	18.74	11.28	11.98	12.13	12.83	13.91
4H	2H	13.21	14.04	14.04	14.88	15.92	9.76	10.59	10.59	11.43	12.47
	3H	15.05	15.75	15.90	16.62	17.67	11.12	11.82	11.97	12.69	13.75
	4H	15.75	16.38	16.61	17.25	18.33	11.68	12.31	12.54	13.18	14.26
	6H	16.27	16.82	17.15	17.71	18.80	12.11	12.65	12.98	13.54	14.63
	8H	16.45	16.96	17.33	17.85	18.95	12.24	12.75	13.12	13.64	14.74
	12H	16.56	17.02	17.45	17.92	19.03	12.32	12.77	13.21	13.68	14.79
8H	4H	15.73	16.24	16.61	17.12	18.23	11.97	12.48	12.85	13.37	14.47
	6H	16.30	16.72	17.21	17.65	18.75	12.50	12.92	13.40	13.85	14.95
	8H	16.52	16.89	17.44	17.81	18.93	12.69	13.06	13.61	13.98	15.10
	12H	16.67	17.00	17.58	17.91	19.08	12.82	13.15	13.74	14.06	15.23
12H	4H	15.69	16.15	16.59	17.05	18.16	11.98	12.44	12.88	13.35	14.45
	6H	16.28	16.65	17.19	17.57	18.69	12.55	12.92	13.46	13.84	14.96
	8H	16.51	16.84	17.42	17.75	18.92	12.77	13.10	13.68	14.01	15.18

END OF REPORT