

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: P902434

Luminaire Tested: DFN2DIP-HX2F0-020D060US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902434
REPORT IS A COMBINATION OF REPORTS P899191 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D060US830-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

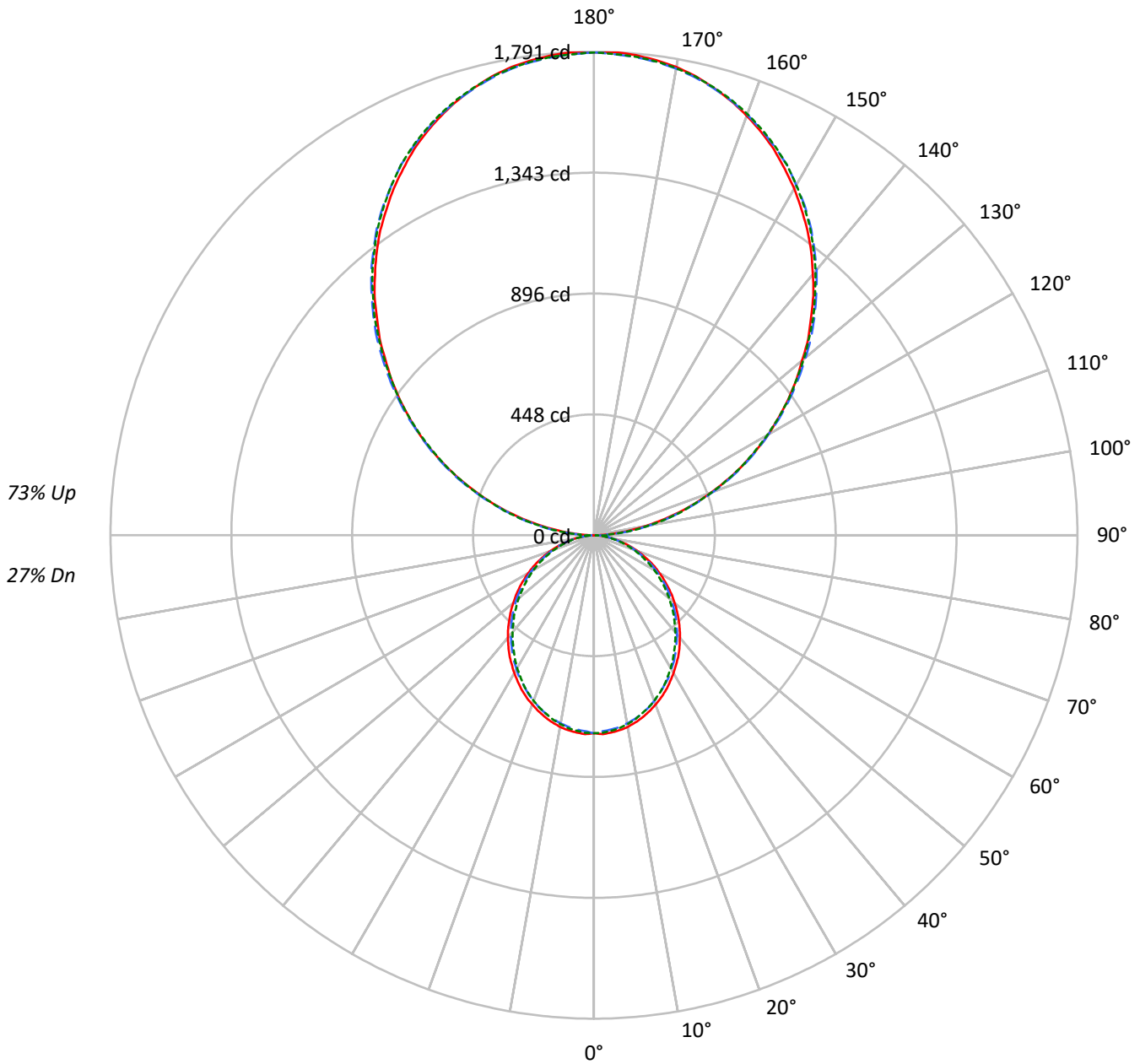
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6871.1 lumens
Efficiency: N/A
Efficacy: 108.0 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-Indirect

Input Watts (W): 63.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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



— 0°-180° - - 45°-225° ···· 90°-270°



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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	102	102	102	102	91	91	91	91	71	71	71	52	52	52	35	35	35	27				27
1	93	88	85	81	83	79	76	73	62	60	58	46	44	43	31	30	30	23				23
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25	19				19
3	77	68	61	55	68	61	55	50	48	44	40	35	33	30	24	23	21	16				16
4	70	60	52	47	62	54	47	42	42	38	34	32	29	26	22	20	18	14				14
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	19	17	16	12				12
6	59	48	40	34	53	43	36	31	34	29	25	25	22	20	18	16	14	11				11
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	12	9				9
8	51	39	31	26	45	35	28	24	28	23	20	21	18	15	15	13	11	8				8
9	47	35	28	23	42	32	26	21	25	21	17	19	16	14	14	11	10	8				8
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	10	9	7				7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1728	1728	1728
5°	1728	1700	1712
10°	1712	1673	1686
15°	1683	1641	1647
20°	1647	1599	1606
25°	1610	1549	1560
30°	1565	1502	1503
35°	1522	1448	1442
40°	1469	1393	1384
45°	1417	1338	1325
50°	1359	1279	1256
55°	1298	1212	1192
60°	1230	1133	1119
65°	1154	1050	1033
70°	1059	949	939
75°	928	828	849
80°	768	674	684
85°	520	423	424

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2400 cd/sqm



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CATALOG NUMBER: DFN2DIP-HX2F0-020D060US830-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.0	1.0
10°-20°	194.2	2.8
20°-30°	285.5	4.2
30°-40°	331.5	4.8
40°-50°	331.1	4.8
50°-60°	288.7	4.2
60°-70°	213.4	3.1
70°-80°	120.8	1.8
80°-90°	37.0	0.5
90°-100°	110.7	1.6
100°-110°	351.6	5.1
110°-120°	601.8	8.8
120°-130°	791.4	11.5
130°-140°	888.4	12.9
140°-150°	871.1	12.7
150°-160°	730.8	10.6
160°-170°	484.6	7.1
170°-180°	169.4	2.5
0°-30°	548.7	8.0
0°-40°	880.3	12.8
0°-60°	1500.2	21.8
0°-90°	1871.3	27.2
90°-120°	1064.1	15.5
90°-150°	3615.0	52.6
90°-180°	5000.0	72.8
0°-180°	6871.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	734	734	734	734	734	
5°	734	731	723	729	727	70
15°	698	694	685	688	684	197
25°	632	626	614	616	614	291
35°	545	538	527	523	519	340
45°	444	439	428	420	418	342
55°	336	332	323	315	311	300
65°	226	222	215	209	205	224
75°	118	117	114	109	111	126
85°	29	28	28	25	25	32
90°	2	19	53	50	51	7
95°	79	94	96	96	94	88
105°	325	329	332	335	335	343
115°	604	613	610	608	604	597
125°	878	892	888	883	881	785
135°	1136	1153	1156	1154	1150	878
145°	1379	1390	1399	1400	1394	862
155°	1577	1582	1586	1594	1589	726
165°	1716	1714	1714	1725	1717	484
175°	1785	1781	1778	1789	1779	170
180°	1789	1789	1789	1789	1789	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	733.5	733.5	733.5	733.5	733.5
2.5°	737.7	734.2	726.4	733.5	732.2
5°	733.5	730.8	722.9	728.6	727.2
7.5°	728.6	724.3	716.6	722.3	720.9
10°	720.9	716.0	707.5	713.0	711.0
12.5°	710.2	706.1	697.6	701.1	699.6
15°	698.2	694.1	684.9	687.7	684.2
17.5°	683.4	679.3	670.1	673.5	670.1
20°	667.2	663.0	653.1	655.3	652.4
22.5°	651.0	644.7	635.5	635.5	634.0
25°	632.0	626.3	614.3	615.7	614.3
27.5°	610.8	605.9	596.7	594.6	591.1
30°	589.7	584.0	573.4	571.4	568.4
32.5°	567.0	562.9	551.6	547.3	544.5
35°	545.3	538.2	526.9	522.6	519.1
37.5°	520.6	514.2	502.8	497.9	494.4
40°	495.1	489.5	478.2	471.9	469.0
42.5°	470.4	464.8	453.6	446.5	442.2
45°	443.7	438.8	428.1	420.4	417.5
47.5°	417.5	412.6	401.3	393.5	389.4
50°	390.0	386.5	376.6	366.7	363.3
52.5°	363.3	358.3	349.1	341.4	336.5
55°	335.7	331.5	323.0	314.6	311.0
57.5°	308.2	304.7	295.5	287.1	284.2
60°	280.7	278.0	268.1	260.2	258.2
62.5°	253.9	248.9	242.0	234.9	232.1
65°	226.4	222.2	215.2	208.8	205.3
67.5°	198.2	194.6	188.3	183.4	180.6
70°	172.1	169.3	162.9	158.0	155.2
72.5°	145.3	142.5	138.9	134.0	132.0
75°	118.5	117.2	113.5	109.3	110.7
77.5°	94.5	91.7	90.2	88.1	86.1
80°	70.6	69.8	68.4	66.3	64.8
82.5°	48.0	48.0	47.3	44.5	44.5
85°	28.8	28.2	27.5	25.4	24.7
87.5°	12.7	11.3	9.9	7.8	7.1
90°	1.6	19.4	52.9	49.6	51.2
92.5°	33.5	45.3	46.9	48.5	48.5
95°	78.7	93.8	96.5	96.5	93.8
97.5°	131.0	145.1	151.0	151.0	151.0
100°	191.4	203.8	208.1	208.1	206.5
102.5°	255.1	264.2	270.1	271.7	270.1
105°	324.6	328.9	332.2	334.9	334.9
107.5°	393.6	400.1	400.1	401.1	393.6
110°	460.5	469.1	469.1	469.1	464.8



TEST NUMBER: P902434

CATALOG NUMBER: DFN2DIP-HX2F0-020D060US830-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	532.7	541.9	540.3	535.9	532.7
115°	603.9	612.6	609.8	608.2	603.9
117.5°	674.6	686.5	678.8	674.6	670.2
120°	745.7	757.6	745.7	745.7	740.8
122.5°	810.4	825.5	817.9	813.7	810.4
125°	878.4	891.8	887.5	882.7	881.1
127.5°	944.7	961.4	955.5	949.0	944.7
130°	1006.7	1026.1	1023.4	1020.2	1014.3
132.5°	1076.3	1091.4	1092.4	1084.9	1080.5
135°	1136.1	1152.8	1156.0	1154.4	1150.1
137.5°	1203.0	1216.4	1219.2	1218.0	1211.6
140°	1261.8	1275.3	1282.8	1282.8	1276.9
142.5°	1322.1	1335.6	1339.9	1341.5	1335.6
145°	1379.3	1390.1	1398.7	1400.3	1394.4
147.5°	1430.5	1444.0	1450.5	1453.1	1447.2
150°	1483.4	1492.5	1498.5	1503.3	1498.5
152.5°	1530.2	1539.5	1547.0	1552.9	1547.0
155°	1577.2	1581.5	1586.3	1593.9	1589.0
157.5°	1617.6	1620.9	1623.5	1634.4	1626.8
160°	1653.8	1657.0	1658.6	1667.7	1661.3
162.5°	1687.2	1687.2	1688.8	1699.0	1691.5
165°	1715.7	1714.1	1714.1	1724.9	1717.4
167.5°	1741.6	1736.8	1736.8	1747.6	1740.0
170°	1761.0	1756.7	1755.1	1765.9	1756.7
172.5°	1774.5	1770.2	1768.6	1779.3	1770.2
175°	1785.3	1781.0	1777.7	1788.6	1779.3
177.5°	1791.2	1787.0	1783.7	1792.8	1783.7
180°	1788.6	1788.6	1788.6	1788.6	1788.6



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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	6.43	7.11	7.56	8.24	9.80	6.00	6.69	7.13	7.81	9.38
	3H	8.05	8.66	9.19	9.79	11.37	7.59	8.20	8.73	9.33	10.91
	4H	8.61	9.20	9.76	10.33	11.91	8.15	8.74	9.30	9.87	11.45
	6H	8.98	9.52	10.14	10.65	12.25	8.52	9.06	9.68	10.19	11.79
	8H	9.07	9.58	10.23	10.73	12.32	8.61	9.13	9.77	10.28	11.86
	12H	9.10	9.59	10.27	10.73	12.34	8.64	9.13	9.81	10.27	11.88
4H	2H	6.86	7.44	8.01	8.57	10.16	6.52	7.10	7.67	8.23	9.82
	3H	8.68	9.17	9.84	10.32	11.92	8.29	8.78	9.45	9.94	11.54
	4H	9.36	9.81	10.53	10.96	12.57	8.97	9.42	10.13	10.56	12.18
	6H	9.85	10.23	11.01	11.40	13.00	9.45	9.83	10.62	11.00	12.61
	8H	9.98	10.34	11.15	11.50	13.12	9.58	9.94	10.75	11.10	12.72
	12H	10.03	10.36	11.22	11.53	13.16	9.63	9.95	10.81	11.12	12.75
8H	4H	9.54	9.89	10.70	11.05	12.68	9.18	9.54	10.35	10.70	12.33
	6H	10.13	10.43	11.32	11.63	13.25	9.78	10.07	10.97	11.28	12.90
	8H	10.33	10.59	11.53	11.77	13.41	9.98	10.23	11.17	11.41	13.05
	12H	10.44	10.67	11.64	11.84	13.52	10.07	10.30	11.27	11.48	13.15
12H	4H	9.51	9.84	10.69	11.01	12.63	9.17	9.49	10.35	10.66	12.29
	6H	10.15	10.41	11.35	11.59	13.23	9.81	10.07	11.00	11.25	12.89
	8H	10.37	10.60	11.57	11.77	13.44	10.02	10.25	11.22	11.43	13.10