

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: P913625

Luminaire Tested: DFN2DIP-HX4F0-050D080US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913625
REPORT IS A COMBINATION OF REPORTS P899374 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D080US927-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

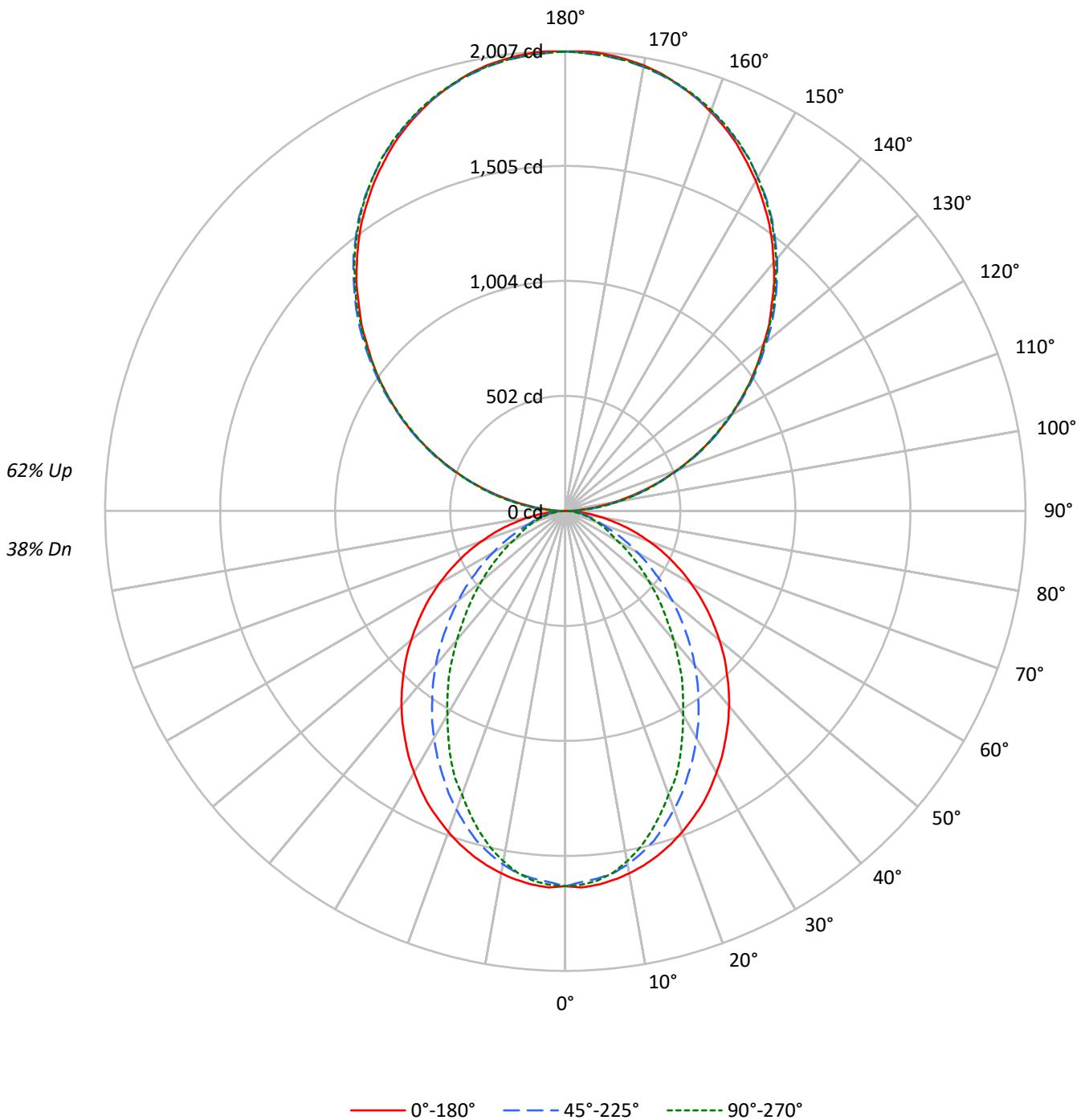
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8975.4 lumens
Efficiency: N/A
Efficacy: 100.8 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-Indirect

Input Watts (W): 89
Input Voltage (V):
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
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





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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	104	104	104	104	95	95	95	95	76	76	76	60	60	60	45	45	45	38			38
1	95	91	88	84	86	83	80	77	67	65	63	53	52	50	40	39	38	32			32
2	87	80	74	69	79	73	68	64	59	56	53	47	45	43	36	34	33	28			28
3	80	71	64	58	72	64	58	54	53	48	45	42	39	37	32	30	28	24			24
4	73	63	55	49	66	57	51	46	47	42	39	38	34	32	29	27	25	21			21
5	67	56	48	42	61	51	44	39	42	37	33	34	30	28	26	24	22	18			18
6	62	50	42	37	56	46	39	34	38	33	29	31	27	24	24	21	19	16			16
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	17	15			15
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16	13			13
9	49	38	30	26	45	35	28	24	29	24	21	24	20	17	19	16	14	12			12
10	46	35	28	23	42	32	26	21	27	22	19	22	18	16	17	15	13	11			11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1217	1217	1217
5°	1219	1198	1206
10°	1207	1175	1166
15°	1191	1136	1106
20°	1169	1083	1032
25°	1146	1023	960
30°	1116	961	869
35°	1087	895	789
40°	1057	827	697
45°	1022	751	614
50°	986	674	532
55°	948	593	454
60°	905	507	374
65°	854	420	337
70°	794	339	305
75°	718	299	277
80°	607	251	241
85°	425	168	181

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1511 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.4	1.7
10°-20°	421.2	4.7
20°-30°	591.3	6.6
30°-40°	644.6	7.2
40°-50°	592.4	6.6
50°-60°	465.3	5.2
60°-70°	302.9	3.4
70°-80°	155.9	1.7
80°-90°	45.5	0.5
90°-100°	124.0	1.4
100°-110°	394.1	4.4
110°-120°	674.4	7.5
120°-130°	886.9	9.9
130°-140°	995.5	11.1
140°-150°	976.2	10.9
150°-160°	818.9	9.1
160°-170°	543.1	6.1
170°-180°	189.8	2.1
0°-30°	1165.9	13.0
0°-40°	1810.5	20.2
0°-60°	2868.2	32.0
0°-90°	3372.5	37.6
90°-120°	1192.5	13.3
90°-150°	4051.1	45.1
90°-180°	5603.0	62.4
0°-180°	8975.4	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°	2	22	59	56	57	9
95°	88	105	108	108	105	98
105°	364	369	372	375	375	384
115°	677	686	683	682	677	669
125°	984	999	995	989	987	880
135°	1273	1292	1296	1294	1289	984
145°	1546	1558	1567	1569	1563	966
155°	1767	1772	1778	1786	1781	813
165°	1923	1921	1921	1933	1924	542
175°	2001	1996	1992	2004	1994	190
180°	2004	2004	2004	2004	2004	



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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°	1.8	21.8	59.3	55.6	57.4
92.5°	37.5	50.8	52.6	54.3	54.3
95°	88.2	105.1	108.1	108.1	105.1
97.5°	146.9	162.6	169.2	169.2	169.2
100°	214.5	228.4	233.2	233.2	231.4
102.5°	285.8	296.1	302.7	304.5	302.7
105°	363.8	368.6	372.2	375.3	375.3
107.5°	441.1	448.4	448.4	449.6	441.1
110°	516.0	525.7	525.7	525.7	520.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	597.0	607.3	605.5	600.6	597.0
115°	676.8	686.4	683.4	681.6	676.8
117.5°	755.9	769.2	760.7	755.9	751.1
120°	835.7	849.0	835.7	835.7	830.2
122.5°	908.2	925.1	916.6	911.8	908.2
125°	984.3	999.4	994.6	989.1	987.4
127.5°	1058.7	1077.4	1070.7	1063.5	1058.7
130°	1128.1	1149.9	1146.8	1143.3	1136.6
132.5°	1206.1	1223.0	1224.2	1215.8	1210.9
135°	1273.1	1291.9	1295.5	1293.7	1288.9
137.5°	1348.1	1363.2	1366.2	1365.0	1357.7
140°	1414.0	1429.0	1437.5	1437.5	1430.8
142.5°	1481.6	1496.7	1501.6	1503.4	1496.7
145°	1545.7	1557.7	1567.4	1569.2	1562.6
147.5°	1603.1	1618.2	1625.4	1628.5	1621.8
150°	1662.3	1672.5	1679.2	1684.7	1679.2
152.5°	1714.8	1725.1	1733.6	1740.3	1733.6
155°	1767.4	1772.3	1777.7	1786.1	1780.7
157.5°	1812.7	1816.4	1819.4	1831.4	1823.0
160°	1853.2	1856.9	1858.7	1868.9	1861.7
162.5°	1890.7	1890.7	1892.5	1904.0	1895.5
165°	1922.7	1920.9	1920.9	1933.0	1924.5
167.5°	1951.7	1946.3	1946.3	1958.4	1949.9
170°	1973.5	1968.6	1966.8	1978.9	1968.6
172.5°	1988.6	1983.8	1982.0	1994.0	1983.8
175°	2000.7	1995.8	1992.2	2004.3	1994.0
177.5°	2007.3	2002.5	1998.8	2009.1	1998.8
180°	2004.3	2004.3	2004.3	2004.3	2004.3



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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	6.55	7.28	7.61	8.35	9.79	2.52	3.26	3.58	4.32	5.76
	3H	8.22	8.88	9.29	9.95	11.41	3.70	4.36	4.77	5.43	6.89
	4H	8.82	9.45	9.90	10.52	11.98	4.15	4.77	5.23	5.85	7.31
	6H	9.24	9.81	10.33	10.89	12.37	4.47	5.04	5.56	6.12	7.60
	8H	9.36	9.91	10.46	11.00	12.47	4.56	5.10	5.65	6.19	7.67
	12H	9.42	9.94	10.52	11.03	12.52	4.60	5.12	5.70	6.20	7.70
4H	2H	6.55	7.18	7.64	8.25	9.72	3.10	3.73	4.19	4.80	6.27
	3H	8.37	8.89	9.47	9.99	11.47	4.45	4.97	5.54	6.07	7.54
	4H	9.06	9.54	10.17	10.63	12.13	4.99	5.47	6.09	6.56	8.06
	6H	9.57	9.98	10.68	11.10	12.59	5.41	5.82	6.52	6.93	8.42
	8H	9.75	10.13	10.86	11.23	12.74	5.54	5.92	6.65	7.02	8.53
	12H	9.84	10.19	10.97	11.30	12.82	5.60	5.94	6.72	7.06	8.57
8H	4H	9.03	9.41	10.13	10.51	12.02	5.27	5.65	6.38	6.75	8.26
	6H	9.59	9.90	10.72	11.05	12.56	5.78	6.10	6.91	7.25	8.75
	8H	9.81	10.08	10.94	11.21	12.73	5.98	6.25	7.11	7.38	8.90
	12H	9.94	10.18	11.08	11.31	12.87	6.09	6.33	7.23	7.46	9.02
12H	4H	8.97	9.32	10.10	10.44	11.95	5.27	5.61	6.39	6.73	8.24
	6H	9.56	9.84	10.70	10.97	12.49	5.83	6.11	6.97	7.24	8.76
	8H	9.78	10.02	10.92	11.15	12.71	6.04	6.28	7.18	7.41	8.97