

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: P926889

Luminaire Tested: DFN2DIP-HX4F0-040D080US830-RLLFLL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P926889
REPORT IS A COMBINATION OF REPORTS P899372 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D080US830-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

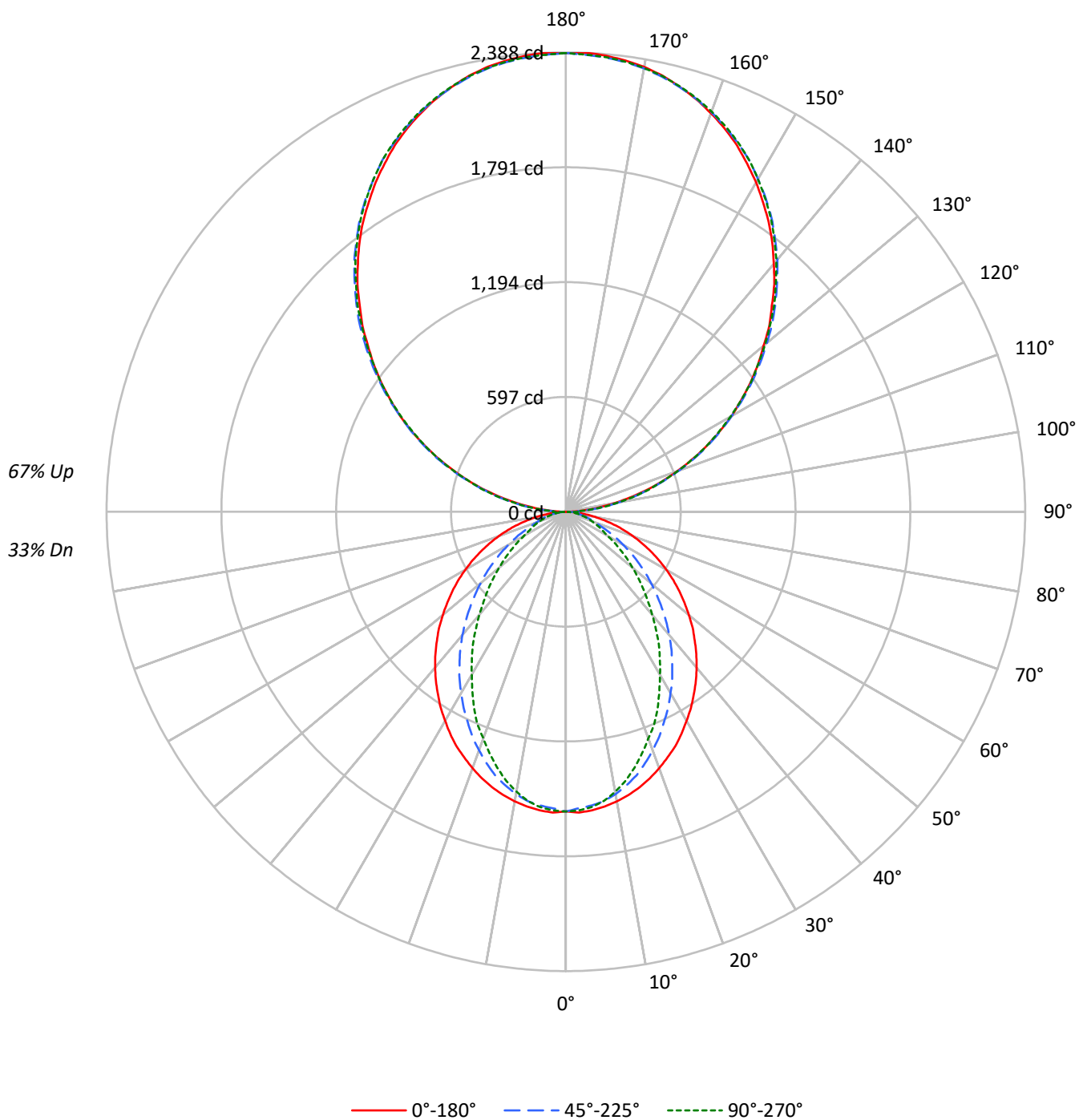
Lumens per Lamp: N/A
Luminaire Lumens: 9877.4 lumens
Efficiency: N/A
Efficacy: 107.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 91.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1159	1159	1159
5°	1160	1140	1148
10°	1149	1118	1110
15°	1133	1081	1053
20°	1113	1030	982
25°	1091	973	913
30°	1063	915	827
35°	1035	852	751
40°	1006	787	663
45°	973	715	584
50°	938	642	507
55°	903	564	432
60°	861	483	356
65°	813	400	320
70°	756	322	290
75°	683	284	264
80°	578	239	229
85°	404	160	173

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1798 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	1.5
10°-20°	400.9	4.1
20°-30°	562.8	5.7
30°-40°	613.5	6.2
40°-50°	563.9	5.7
50°-60°	442.8	4.5
60°-70°	288.3	2.9
70°-80°	148.4	1.5
80°-90°	44.7	0.5
90°-100°	147.6	1.5
100°-110°	468.9	4.7
110°-120°	802.3	8.1
120°-130°	1055.2	10.7
130°-140°	1184.4	12.0
140°-150°	1161.5	11.8
150°-160°	974.3	9.9
160°-170°	646.1	6.5
170°-180°	225.8	2.3
0°-30°	1109.7	11.2
0°-40°	1723.2	17.4
0°-60°	2730.0	27.6
0°-90°	3211.3	32.5
90°-120°	1418.8	14.4
90°-150°	4819.9	48.8
90°-180°	6666.0	67.5
0°-180°	9877.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1558	1558	1558	1558	1558	
5°	1558	1551	1533	1545	1541	148
15°	1482	1466	1419	1392	1378	418
25°	1345	1300	1207	1149	1128	619
35°	1159	1087	963	874	843	726
45°	948	853	705	605	571	732
55°	720	611	458	374	347	644
65°	486	372	245	198	193	482
75°	259	161	113	103	102	274
85°	61	31	27	27	27	70
90°	2	26	70	66	68	10
95°	105	125	129	129	125	117
105°	433	438	443	446	446	457
115°	805	817	813	811	805	796
125°	1171	1189	1183	1177	1175	1047
135°	1515	1537	1541	1539	1533	1171
145°	1839	1853	1865	1867	1859	1149
155°	2103	2109	2115	2125	2119	968
165°	2288	2285	2285	2300	2290	645
175°	2380	2374	2370	2385	2372	226
180°	2385	2385	2385	2385	2385	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1558.1	1558.1	1558.1	1558.1	1558.1
2.5°	1565.2	1558.1	1542.6	1556.8	1553.9
5°	1558.1	1551.1	1532.7	1545.4	1541.3
7.5°	1545.4	1537.0	1517.3	1522.8	1515.8
10°	1528.5	1518.7	1490.5	1486.1	1477.8
12.5°	1507.4	1494.7	1456.5	1448.2	1432.6
15°	1482.0	1466.4	1418.6	1391.8	1377.7
17.5°	1452.4	1429.8	1370.5	1339.6	1317.0
20°	1418.6	1390.3	1319.8	1284.6	1253.5
22.5°	1381.9	1349.5	1267.6	1219.7	1198.7
25°	1345.2	1300.1	1207.0	1149.3	1128.0
27.5°	1301.6	1253.5	1150.6	1084.3	1051.8
30°	1255.0	1201.3	1088.5	1016.7	978.6
32.5°	1209.9	1144.9	1029.4	944.8	909.4
35°	1159.2	1087.2	963.1	874.3	843.2
37.5°	1109.8	1032.1	901.0	803.7	768.5
40°	1057.6	973.0	836.2	736.1	699.4
42.5°	1004.0	913.8	771.3	666.9	631.8
45°	947.6	853.1	705.1	604.9	571.1
47.5°	894.1	794.0	641.7	541.5	510.5
50°	834.8	734.7	579.5	482.2	452.7
52.5°	776.9	671.2	520.4	427.2	400.5
55°	720.5	610.6	458.2	373.7	346.9
57.5°	662.8	549.9	403.3	324.3	301.8
60°	603.5	490.7	345.4	273.6	251.1
62.5°	545.8	433.0	296.0	228.5	217.2
65°	486.5	372.2	245.3	197.5	193.1
67.5°	430.2	315.8	197.5	173.4	169.2
70°	370.9	260.9	163.5	149.5	143.7
72.5°	314.5	210.1	136.8	125.5	122.7
75°	259.4	160.7	112.8	102.9	101.6
77.5°	204.5	114.1	88.9	83.2	80.3
80°	153.6	81.8	67.6	62.1	62.1
82.5°	107.2	55.0	46.6	43.6	43.6
85°	60.6	31.0	26.8	26.8	26.8
87.5°	22.6	11.2	11.2	9.9	9.9
90°	2.2	25.9	70.5	66.2	68.3
92.5°	44.6	60.4	62.6	64.7	64.7
95°	105.0	125.1	128.7	128.7	125.1
97.5°	174.7	193.4	201.3	201.3	201.3
100°	255.2	271.7	277.5	277.5	275.3
102.5°	340.1	352.3	360.1	362.3	360.1
105°	432.8	438.5	442.9	446.5	446.5
107.5°	524.8	533.5	533.5	534.9	524.8
110°	613.9	625.4	625.4	625.4	619.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	710.3	722.5	720.4	714.6	710.3
115°	805.2	816.7	813.1	810.9	805.2
117.5°	899.3	915.2	905.1	899.3	893.6
120°	994.2	1010.1	994.2	994.2	987.7
122.5°	1080.5	1100.7	1090.6	1084.8	1080.5
125°	1171.1	1189.1	1183.3	1176.8	1174.7
127.5°	1259.6	1281.8	1273.9	1265.3	1259.6
130°	1342.2	1368.0	1364.5	1360.2	1352.3
132.5°	1435.0	1455.0	1456.5	1446.5	1440.7
135°	1514.7	1537.0	1541.4	1539.2	1533.4
137.5°	1603.9	1621.9	1625.4	1624.0	1615.4
140°	1682.3	1700.2	1710.3	1710.3	1702.3
142.5°	1762.8	1780.8	1786.5	1788.7	1780.8
145°	1839.0	1853.3	1864.8	1867.0	1859.1
147.5°	1907.2	1925.2	1933.8	1937.5	1929.6
150°	1977.7	1989.9	1997.8	2004.3	1997.8
152.5°	2040.2	2052.5	2062.6	2070.5	2062.6
155°	2102.8	2108.6	2115.1	2125.1	2118.6
157.5°	2156.7	2161.1	2164.6	2179.0	2169.0
160°	2204.9	2209.2	2211.4	2223.5	2215.0
162.5°	2249.5	2249.5	2251.6	2265.3	2255.2
165°	2287.5	2285.4	2285.4	2299.8	2289.7
167.5°	2322.0	2315.6	2315.6	2330.0	2319.9
170°	2348.0	2342.2	2340.0	2354.5	2342.2
172.5°	2366.0	2360.2	2358.0	2372.4	2360.2
175°	2380.3	2374.5	2370.2	2384.6	2372.4
177.5°	2388.2	2382.5	2378.1	2390.4	2378.1
180°	2384.6	2384.6	2384.6	2384.6	2384.6

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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	5.76	6.46	6.86	7.56	9.06	1.73	2.44	2.83	3.53	5.03
	3H	7.43	8.06	8.53	9.16	10.68	2.91	3.54	4.02	4.64	6.16
	4H	8.03	8.63	9.15	9.73	11.26	3.36	3.96	4.48	5.06	6.58
	6H	8.45	9.00	9.57	10.10	11.64	3.67	4.22	4.80	5.33	6.87
	8H	8.57	9.09	9.70	10.21	11.74	3.76	4.28	4.89	5.40	6.94
	12H	8.63	9.12	9.76	10.24	11.79	3.80	4.30	4.94	5.41	6.97
4H	2H	5.76	6.36	6.89	7.46	8.99	2.31	2.91	3.44	4.01	5.54
	3H	7.58	8.08	8.71	9.21	10.74	3.65	4.15	4.78	5.28	6.82
	4H	8.27	8.73	9.40	9.84	11.40	4.20	4.65	5.33	5.77	7.33
	6H	8.78	9.17	9.92	10.31	11.86	4.61	5.00	5.75	6.14	7.69
	8H	8.95	9.32	10.09	10.45	12.01	4.74	5.10	5.88	6.24	7.80
	12H	9.04	9.37	10.20	10.52	12.09	4.80	5.13	5.95	6.27	7.84
8H	4H	8.23	8.59	9.37	9.73	11.29	4.47	4.83	5.61	5.97	7.53
	6H	8.79	9.09	9.95	10.27	11.83	4.98	5.29	6.14	6.46	8.02
	8H	9.01	9.27	10.17	10.42	12.01	5.18	5.44	6.34	6.59	8.18
	12H	9.14	9.37	10.31	10.52	12.14	5.29	5.52	6.46	6.67	8.29
12H	4H	8.17	8.50	9.33	9.65	11.22	4.47	4.80	5.62	5.94	7.51
	6H	8.76	9.03	9.93	10.18	11.77	5.03	5.30	6.20	6.45	8.03
	8H	8.98	9.21	10.15	10.36	11.98	5.24	5.47	6.41	6.62	8.24

END OF REPORT