

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: P926893

Luminaire Tested: DFN2DIP-HX4F0-040D090US830-RLLFLL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P926893
REPORT IS A COMBINATION OF REPORTS P899390 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D090US830-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

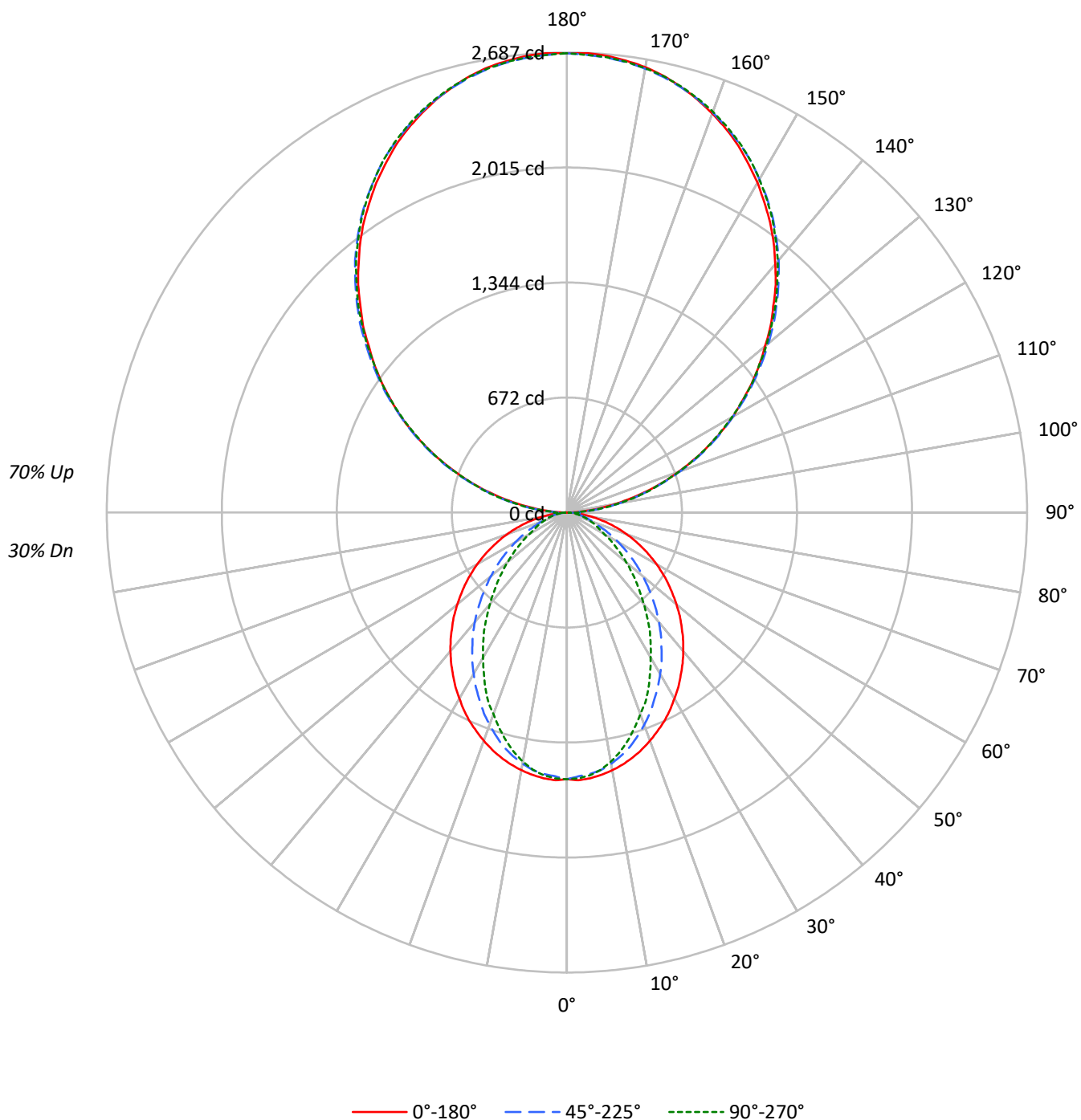
Lumens per Lamp: N/A
Luminaire Lumens: 10711.5 lumens
Efficiency: N/A
Efficacy: 105.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 101.2
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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38
1	94	89	86	83	84	80	77	75	64	62	60	48	47	46	34	33	32
2	85	78	73	68	76	71	66	62	56	53	50	43	40	38	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	33	29	32	27	24	25	22	19	18	16	14
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13
9	48	36	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12
10	45	33	27	22	40	30	24	20	25	20	17	19	16	14	14	12	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: 2022 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	1.4
10°-20°	400.9	3.7
20°-30°	562.8	5.3
30°-40°	613.5	5.7
40°-50°	563.9	5.3
50°-60°	442.8	4.1
60°-70°	288.3	2.7
70°-80°	148.4	1.4
80°-90°	45.5	0.4
90°-100°	166.0	1.5
100°-110°	527.5	4.9
110°-120°	902.7	8.4
120°-130°	1187.1	11.1
130°-140°	1332.5	12.4
140°-150°	1306.6	12.2
150°-160°	1096.1	10.2
160°-170°	726.9	6.8
170°-180°	254.1	2.4
0°-30°	1109.7	10.4
0°-40°	1723.2	16.1
0°-60°	2730.0	25.5
0°-90°	3212.1	30.0
90°-120°	1596.1	14.9
90°-150°	5422.3	50.6
90°-180°	7499.0	70.0
0°-180°	10711.5	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	29	79	74	77	11
95°	118	141	145	145	141	131
105°	487	493	498	502	502	514
115°	906	919	915	912	906	896
125°	1318	1338	1331	1324	1322	1177
135°	1704	1729	1734	1732	1725	1317
145°	2069	2085	2098	2100	2092	1293
155°	2366	2372	2379	2391	2384	1089
165°	2574	2571	2571	2587	2576	726
175°	2678	2671	2666	2683	2669	254
180°	2683	2683	2683	2683	2683	

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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°	2.5	29.1	79.3	74.4	76.8
92.5°	50.1	68.0	70.4	72.8	72.8
95°	118.1	140.7	144.8	144.8	140.7
97.5°	196.5	217.5	226.5	226.5	226.5
100°	287.1	305.7	312.2	312.2	309.8
102.5°	382.6	396.3	405.2	407.6	405.2
105°	486.9	493.3	498.2	502.3	502.3
107.5°	590.4	600.1	600.1	601.7	590.4
110°	690.7	703.7	703.7	703.7	697.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	799.1	812.8	810.4	804.0	799.1
115°	905.8	918.7	914.7	912.3	905.8
117.5°	1011.8	1029.6	1018.3	1011.8	1005.3
120°	1118.6	1136.3	1118.6	1118.6	1111.2
122.5°	1215.5	1238.3	1226.9	1220.4	1215.5
125°	1317.5	1337.7	1331.3	1323.9	1321.6
127.5°	1417.0	1442.0	1433.2	1423.5	1417.0
130°	1510.0	1539.1	1535.0	1530.1	1521.3
132.5°	1614.3	1636.9	1638.5	1627.2	1620.8
135°	1704.0	1729.1	1734.0	1731.6	1725.2
137.5°	1804.3	1824.6	1828.6	1827.0	1817.3
140°	1892.5	1912.7	1924.0	1924.0	1915.2
142.5°	1983.1	2003.3	2009.8	2012.2	2003.3
145°	2068.9	2085.0	2097.9	2100.4	2091.5
147.5°	2145.7	2165.9	2175.6	2179.6	2170.8
150°	2225.0	2238.7	2247.6	2254.8	2247.6
152.5°	2295.3	2309.0	2320.3	2329.3	2320.3
155°	2365.7	2372.1	2379.4	2390.7	2383.5
157.5°	2426.3	2431.2	2435.2	2451.3	2440.0
160°	2480.5	2485.4	2487.8	2501.5	2491.8
162.5°	2530.6	2530.6	2533.1	2548.4	2537.1
165°	2573.5	2571.0	2571.0	2587.3	2575.9
167.5°	2612.3	2605.1	2605.1	2621.2	2609.9
170°	2641.5	2634.9	2632.6	2648.7	2634.9
172.5°	2661.6	2655.2	2652.8	2669.0	2655.2
175°	2677.8	2671.3	2666.5	2682.7	2669.0
177.5°	2686.7	2680.3	2675.4	2689.1	2675.4
180°	2682.7	2682.7	2682.7	2682.7	2682.7

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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	5.42	6.11	6.54	7.22	8.75	1.39	2.08	2.51	3.19	4.73
	3H	7.09	7.71	8.21	8.82	10.37	2.57	3.19	3.70	4.31	5.86
	4H	7.69	8.28	8.83	9.39	10.95	3.02	3.60	4.15	4.72	6.28
	6H	8.11	8.65	9.25	9.77	11.33	3.33	3.87	4.48	4.99	6.56
	8H	8.23	8.74	9.38	9.88	11.44	3.42	3.93	4.57	5.07	6.63
	12H	8.29	8.77	9.44	9.90	11.48	3.46	3.95	4.61	5.08	6.66
4H	2H	5.42	6.01	6.56	7.12	8.68	1.97	2.56	3.12	3.68	5.23
	3H	7.24	7.73	8.39	8.87	10.44	3.31	3.80	4.46	4.94	6.51
	4H	7.93	8.38	9.08	9.51	11.09	3.86	4.30	5.01	5.44	7.02
	6H	8.44	8.82	9.59	9.97	11.55	4.27	4.65	5.43	5.81	7.39
	8H	8.61	8.97	9.76	10.11	11.71	4.40	4.75	5.55	5.90	7.49
	12H	8.70	9.02	9.87	10.18	11.78	4.46	4.78	5.63	5.94	7.54
8H	4H	7.89	8.24	9.04	9.39	10.98	4.13	4.48	5.28	5.63	7.22
	6H	8.45	8.74	9.62	9.93	11.52	4.64	4.94	5.82	6.13	7.72
	8H	8.66	8.92	9.85	10.09	11.70	4.83	5.09	6.01	6.26	7.87
	12H	8.80	9.02	9.98	10.19	11.83	4.95	5.17	6.13	6.34	7.98
12H	4H	7.83	8.16	9.00	9.31	10.91	4.13	4.45	5.30	5.61	7.21
	6H	8.42	8.68	9.60	9.85	11.46	4.69	4.95	5.87	6.12	7.73
	8H	8.64	8.86	9.82	10.03	11.67	4.90	5.12	6.08	6.29	7.93

END OF REPORT