

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: P926903

Luminaire Tested: DFN2DIP-HX4F0-040D120US830-FLLFLL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P926903
REPORT IS A COMBINATION OF REPORTS P899443 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D120US830-FLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

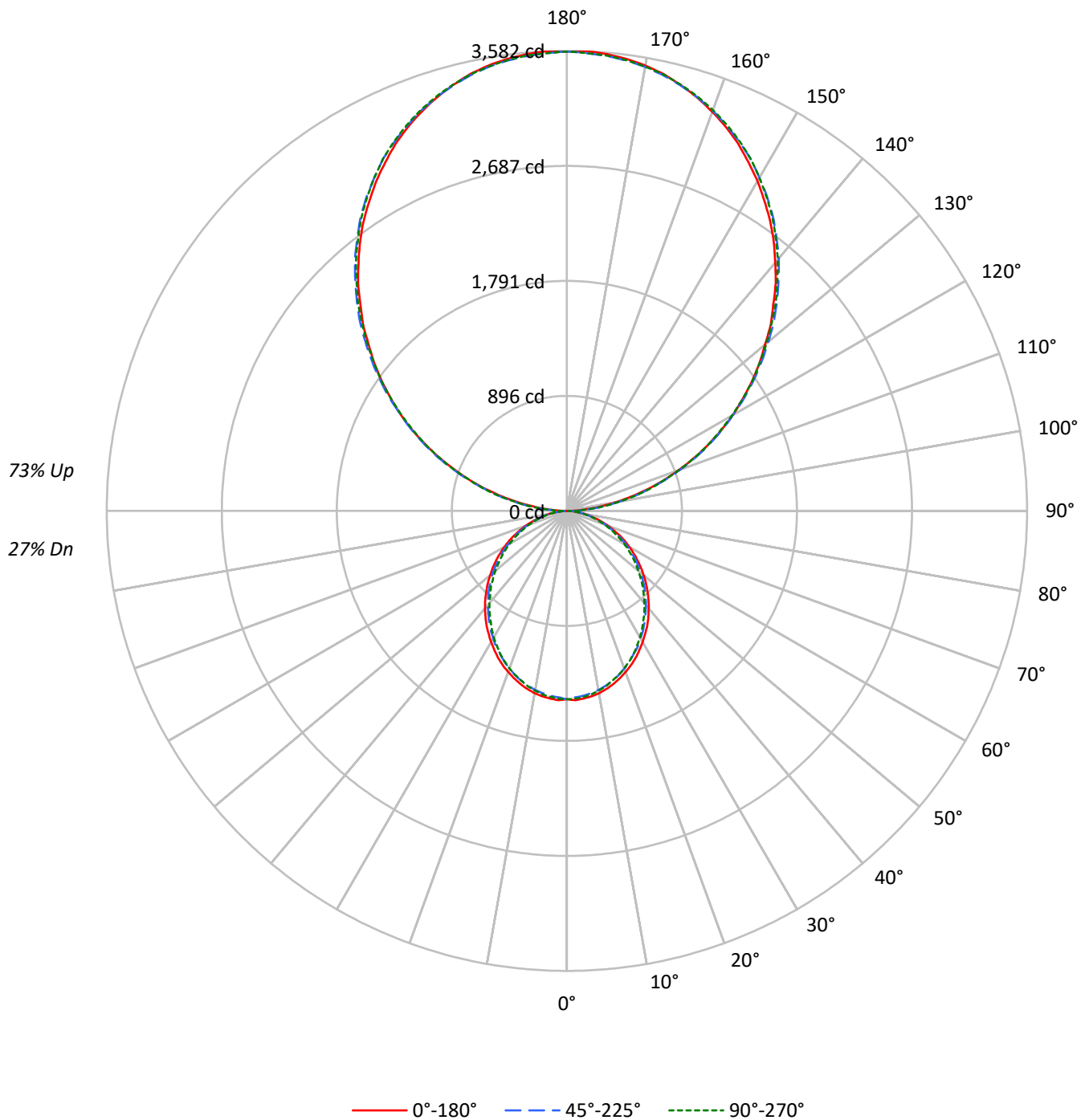
Lumens per Lamp: N/A
Luminaire Lumens: 13741.6 lumens
Efficiency: N/A
Efficacy: 106.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 129.2
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	91	91	91	91	71	71	71	52	52	52	35	35	35
1	93	88	85	81	83	79	76	73	62	60	58	46	44	43	31	30	30
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25
3	77	68	61	55	68	61	55	50	48	44	40	35	33	30	24	23	21
4	70	60	52	47	62	54	47	42	42	38	34	32	29	26	22	20	18
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	19	17	16
6	59	48	40	34	53	43	36	31	34	29	25	25	22	20	18	16	14
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	12
8	51	39	31	26	45	35	28	24	28	23	20	21	18	15	15	13	11
9	47	35	28	23	42	32	26	21	25	21	17	19	16	14	14	11	10
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1091	1091	1091
5°	1093	1076	1083
10°	1084	1061	1068
15°	1068	1044	1045
20°	1046	1020	1022
25°	1025	991	995
30°	998	964	960
35°	973	932	924
40°	942	900	889
45°	911	868	854
50°	877	834	813
55°	841	795	775
60°	801	749	732
65°	757	701	681
70°	701	643	626
75°	624	573	576
80°	531	484	479
85°	385	329	319

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2696 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.1	1.0
10°-20°	388.5	2.8
20°-30°	570.9	4.2
30°-40°	663.1	4.8
40°-50°	662.2	4.8
50°-60°	577.4	4.2
60°-70°	426.9	3.1
70°-80°	241.5	1.8
80°-90°	73.9	0.5
90°-100°	221.3	1.6
100°-110°	703.3	5.1
110°-120°	1203.5	8.8
120°-130°	1582.8	11.5
130°-140°	1776.6	12.9
140°-150°	1742.2	12.7
150°-160°	1461.5	10.6
160°-170°	969.2	7.1
170°-180°	338.8	2.5
0°-30°	1097.4	8.0
0°-40°	1760.5	12.8
0°-60°	3000.2	21.8
0°-90°	3742.4	27.2
90°-120°	2128.1	15.5
90°-150°	7229.8	52.6
90°-180°	9999.0	72.8
0°-180°	13741.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1467	1467	1467	1467	1467	
5°	1467	1461	1446	1457	1454	139
15°	1396	1388	1370	1375	1368	393
25°	1264	1253	1229	1231	1229	582
35°	1090	1076	1054	1045	1038	681
45°	887	878	856	841	835	685
55°	672	663	646	629	622	600
65°	453	444	430	418	411	448
75°	237	234	227	219	222	253
85°	58	56	55	51	49	64
90°	3	39	106	99	102	14
95°	157	188	193	193	188	175
105°	649	658	664	670	670	685
115°	1208	1225	1220	1216	1208	1195
125°	1757	1784	1775	1765	1762	1570
135°	2272	2306	2312	2309	2300	1756
145°	2758	2780	2797	2800	2789	1724
155°	3154	3163	3172	3188	3178	1452
165°	3431	3428	3428	3450	3435	968
175°	3570	3562	3555	3577	3559	339
180°	3577	3577	3577	3577	3577	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1466.9	1466.9	1466.9	1466.9	1466.9
2.5°	1475.5	1468.4	1452.9	1466.9	1464.3
5°	1466.9	1461.3	1445.8	1457.0	1454.4
7.5°	1457.0	1448.6	1433.1	1444.5	1441.6
10°	1441.6	1431.8	1414.9	1426.1	1421.9
12.5°	1420.3	1412.0	1395.1	1402.2	1399.2
15°	1396.4	1388.0	1369.6	1375.3	1368.3
17.5°	1366.8	1358.4	1340.0	1347.0	1340.0
20°	1334.3	1325.9	1306.2	1310.4	1304.9
22.5°	1302.0	1289.2	1270.9	1270.9	1268.0
25°	1263.8	1252.6	1228.6	1231.4	1228.6
27.5°	1221.5	1211.6	1193.4	1189.2	1182.2
30°	1179.3	1167.9	1146.8	1142.6	1136.9
32.5°	1134.1	1125.7	1103.1	1094.6	1088.9
35°	1090.4	1076.3	1053.7	1045.2	1038.2
37.5°	1041.0	1028.3	1005.6	995.8	988.8
40°	990.3	978.9	956.3	943.7	938.1
42.5°	940.9	929.5	907.1	892.8	884.4
45°	887.3	877.5	856.2	840.8	835.1
47.5°	835.1	825.2	802.6	787.1	778.7
50°	780.0	772.9	753.2	733.5	726.4
52.5°	726.4	716.6	698.3	682.7	672.9
55°	671.5	663.0	646.1	629.1	622.1
57.5°	616.4	609.4	590.9	574.1	568.4
60°	561.4	555.8	536.1	520.5	516.3
62.5°	507.8	497.9	483.9	469.7	464.1
65°	452.9	444.3	430.3	417.5	410.6
67.5°	396.4	389.3	376.7	366.8	361.2
70°	344.2	338.5	325.8	315.9	310.4
72.5°	290.7	284.9	277.9	268.0	263.8
75°	236.9	234.2	227.0	218.7	221.5
77.5°	189.0	183.3	180.5	176.2	172.1
80°	141.1	139.6	136.8	132.6	129.8
82.5°	95.9	95.9	94.6	88.9	88.9
85°	57.8	56.5	55.0	50.7	49.4
87.5°	25.4	22.6	19.8	15.6	14.0
90°	3.2	38.8	105.7	99.2	102.4
92.5°	66.8	90.6	93.8	97.1	97.1
95°	157.4	187.7	193.0	193.0	187.7
97.5°	262.0	290.1	302.0	302.0	302.0
100°	382.8	407.6	416.2	416.2	413.0
102.5°	510.1	528.4	540.2	543.5	540.2
105°	649.2	657.8	664.3	669.6	669.6
107.5°	787.2	800.2	800.2	802.3	787.2
110°	920.9	938.2	938.2	938.2	929.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1065.4	1083.8	1080.5	1071.9	1065.4
115°	1207.7	1225.1	1219.6	1216.4	1207.7
117.5°	1349.0	1372.8	1357.7	1349.0	1340.4
120°	1491.4	1515.1	1491.4	1491.4	1481.7
122.5°	1620.8	1651.0	1635.9	1627.2	1620.8
125°	1756.6	1783.6	1775.0	1765.3	1762.0
127.5°	1889.3	1922.7	1910.8	1897.9	1889.3
130°	2013.3	2052.1	2046.7	2040.2	2028.4
132.5°	2152.4	2182.6	2184.7	2169.6	2161.1
135°	2272.1	2305.5	2312.0	2308.7	2300.2
137.5°	2405.8	2432.8	2438.2	2436.0	2423.1
140°	2523.4	2550.3	2565.4	2565.4	2553.5
142.5°	2644.2	2671.1	2679.7	2682.9	2671.1
145°	2758.4	2780.0	2797.2	2800.5	2788.7
147.5°	2860.9	2887.8	2900.8	2906.2	2894.3
150°	2966.6	2984.9	2996.8	3006.5	2996.8
152.5°	3060.4	3078.7	3093.9	3105.7	3093.9
155°	3154.2	3162.8	3172.5	3187.6	3177.9
157.5°	3235.1	3241.5	3246.9	3268.5	3253.4
160°	3307.3	3313.8	3317.0	3335.4	3322.4
162.5°	3374.2	3374.2	3377.4	3397.9	3382.8
165°	3431.4	3428.2	3428.2	3449.6	3434.6
167.5°	3483.1	3473.4	3473.4	3495.0	3479.9
170°	3521.9	3513.3	3510.1	3531.6	3513.3
172.5°	3548.9	3540.2	3537.0	3558.6	3540.2
175°	3570.5	3561.8	3555.4	3576.9	3558.6
177.5°	3582.3	3573.7	3567.2	3585.6	3567.2
180°	3576.9	3576.9	3576.9	3576.9	3576.9

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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	4.96	5.65	6.09	6.77	8.34	4.53	5.22	5.66	6.34	7.91
	3H	6.61	7.23	7.75	8.36	9.94	6.14	6.76	7.28	7.89	9.47
	4H	7.19	7.78	8.34	8.91	10.49	6.72	7.30	7.87	8.44	10.02
	6H	7.58	8.12	8.74	9.26	10.85	7.11	7.65	8.26	8.78	10.38
	8H	7.68	8.20	8.84	9.34	10.93	7.21	7.72	8.37	8.87	10.46
	12H	7.73	8.21	8.89	9.36	10.97	7.25	7.73	8.41	8.87	10.48
4H	2H	5.40	5.99	6.56	7.12	8.71	5.06	5.65	6.22	6.78	8.36
	3H	7.26	7.74	8.42	8.90	10.50	6.86	7.35	8.02	8.51	10.10
	4H	7.96	8.41	9.13	9.56	11.17	7.56	8.01	8.72	9.15	10.77
	6H	8.47	8.85	9.64	10.02	11.63	8.06	8.45	9.23	9.61	11.22
	8H	8.62	8.98	9.78	10.14	11.76	8.20	8.56	9.37	9.72	11.35
	12H	8.68	9.01	9.86	10.18	11.81	8.26	8.59	9.44	9.76	11.38
8H	4H	8.15	8.51	9.31	9.67	11.29	7.79	8.15	8.95	9.31	10.93
	6H	8.77	9.07	9.96	10.27	11.89	8.41	8.71	9.60	9.91	11.53
	8H	8.99	9.25	10.18	10.43	12.07	8.62	8.88	9.82	10.06	11.70
	12H	9.12	9.34	10.31	10.52	12.19	8.73	8.96	9.93	10.14	11.81
12H	4H	8.12	8.45	9.31	9.62	11.25	7.77	8.10	8.96	9.27	10.90
	6H	8.80	9.06	9.99	10.24	11.88	8.45	8.71	9.64	9.89	11.53
	8H	9.04	9.26	10.23	10.44	12.11	8.68	8.91	9.87	10.08	11.75

END OF REPORT