

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: P902504

Luminaire Tested: DFN2DIP-HX2F0-060D030US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902504
REPORT IS A COMBINATION OF REPORTS P899170 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-060D030US830-RLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

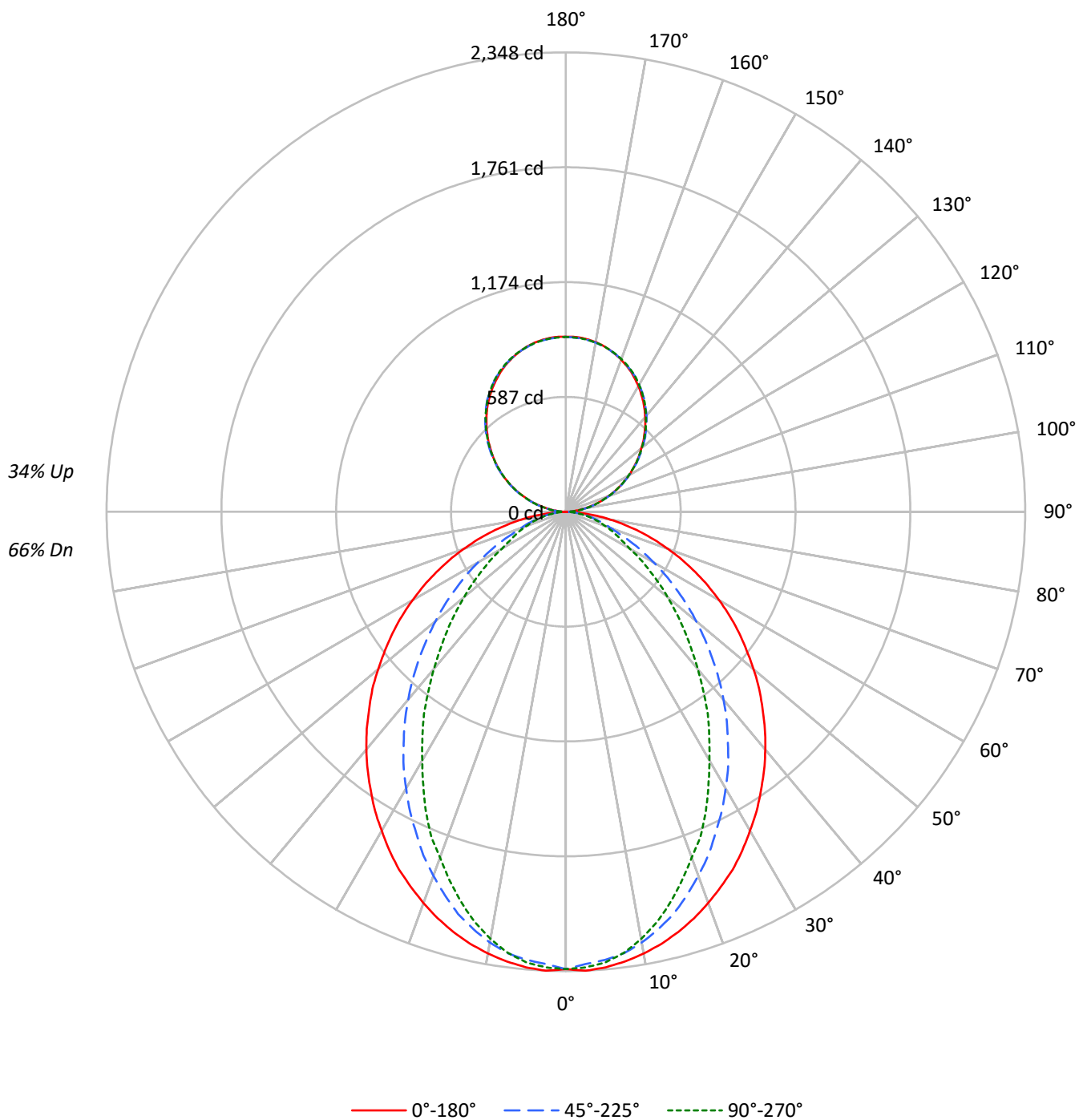
Lumens per Lamp: N/A
Luminaire Lumens: 7309.4 lumens
Efficiency: N/A
Efficacy: 90.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 81.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P902504

CATALOG NUMBER: DFN2DIP-HX2F0-060D030US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902504

CATALOG NUMBER: DFN2DIP-HX2F0-060D030US830-RLLFLL

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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5507	5507	5507
5°	5507	5406	5444
10°	5444	5288	5257
15°	5360	5100	4974
20°	5252	4847	4630
25°	5142	4566	4298
30°	4996	4279	3881
35°	4853	3971	3514
40°	4707	3654	3096
45°	4539	3305	2718
50°	4364	2953	2349
55°	4180	2579	1995
60°	3967	2190	1632
65°	3721	1797	1458
70°	3423	1429	1306
75°	3048	1235	1168
80°	2508	1000	983
85°	1641	618	690

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 4539 cd/sqm

TEST NUMBER: P902504

CATALOG NUMBER: DFN2DIP-HX2F0-060D030US830-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.1	3.0
10°-20°	601.3	8.2
20°-30°	844.3	11.6
30°-40°	920.3	12.6
40°-50°	845.9	11.6
50°-60°	664.3	9.1
60°-70°	432.4	5.9
70°-80°	222.6	3.0
80°-90°	59.4	0.8
90°-100°	55.3	0.8
100°-110°	175.8	2.4
110°-120°	300.9	4.1
120°-130°	395.7	5.4
130°-140°	444.2	6.1
140°-150°	435.6	6.0
150°-160°	365.4	5.0
160°-170°	242.3	3.3
170°-180°	84.7	1.2
0°-30°	1664.7	22.8
0°-40°	2585.0	35.4
0°-60°	4095.1	56.0
0°-90°	4809.5	65.8
90°-120°	532.1	7.3
90°-150°	1807.5	24.7
90°-180°	2500.0	34.2
0°-180°	7309.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2337	2337	2337	2337	2337	
5°	2337	2327	2299	2318	2312	222
15°	2223	2200	2128	2088	2067	626
25°	2018	1950	1811	1724	1692	928
35°	1739	1631	1445	1312	1265	1088
45°	1421	1280	1058	907	857	1098
55°	1081	916	687	561	520	966
65°	730	558	368	296	290	724
75°	389	241	169	154	152	412
85°	91	46	40	40	40	104
90°	1	10	26	25	26	7
95°	39	47	48	48	47	44
105°	162	164	166	167	167	171
115°	302	306	305	304	302	299
125°	439	446	444	441	440	392
135°	568	576	578	577	575	439
145°	690	695	699	700	697	431
155°	789	791	793	797	795	363
165°	858	857	857	862	859	242
175°	893	890	889	894	890	85
180°	894	894	894	894	894	

TEST NUMBER: P902504

CATALOG NUMBER: DFN2DIP-HX2F0-060D030US830-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2337.3	2337.3	2337.3	2337.3	2337.3
2.5°	2347.9	2337.3	2313.9	2335.2	2331.0
5°	2337.3	2326.8	2299.1	2318.3	2312.0
7.5°	2318.3	2305.6	2276.1	2284.3	2273.8
10°	2292.8	2278.0	2235.9	2229.4	2216.8
12.5°	2261.3	2242.1	2184.9	2172.4	2149.0
15°	2223.1	2199.7	2127.9	2087.7	2066.6
17.5°	2178.7	2144.8	2055.9	2009.4	1975.6
20°	2127.9	2085.5	1979.8	1927.0	1880.4
22.5°	2072.9	2024.2	1901.5	1829.7	1798.0
25°	2018.0	1950.2	1810.6	1724.0	1692.1
27.5°	1952.5	1880.4	1726.0	1626.5	1577.9
30°	1882.6	1802.0	1632.9	1525.1	1467.9
32.5°	1814.9	1717.5	1544.3	1417.2	1364.2
35°	1738.8	1630.9	1444.8	1311.5	1264.8
37.5°	1664.7	1548.2	1351.7	1205.6	1152.8
40°	1586.4	1459.6	1254.2	1104.1	1049.1
42.5°	1506.1	1370.7	1157.1	1000.4	947.7
45°	1421.4	1279.6	1057.7	907.3	856.6
47.5°	1341.1	1191.0	962.5	812.2	765.7
50°	1252.3	1102.1	869.4	723.3	679.1
52.5°	1165.4	1006.7	780.5	640.9	600.8
55°	1080.8	915.9	687.4	560.6	520.4
57.5°	994.2	824.9	605.0	486.5	452.6
60°	905.3	736.1	518.2	410.5	376.5
62.5°	818.7	649.5	444.1	342.7	325.8
65°	729.8	558.4	368.1	296.2	289.7
67.5°	645.2	473.7	296.2	260.1	253.8
70°	556.3	391.3	245.2	224.2	215.7
72.5°	471.7	315.1	205.1	188.3	184.0
75°	389.2	241.0	169.2	154.4	152.4
77.5°	306.8	171.3	133.3	124.8	120.6
80°	230.5	122.7	101.4	93.1	93.1
82.5°	160.7	82.6	69.7	65.5	65.5
85°	90.9	46.5	40.2	40.2	40.2
87.5°	33.9	16.9	16.9	14.8	14.8
90°	0.8	9.7	26.4	24.8	25.6
92.5°	16.7	22.6	23.5	24.2	24.2
95°	39.4	46.9	48.3	48.3	46.9
97.5°	65.5	72.5	75.5	75.5	75.5
100°	95.7	101.9	104.1	104.1	103.3
102.5°	127.5	132.1	135.1	135.9	135.1
105°	162.3	164.5	166.1	167.4	167.4
107.5°	196.8	200.0	200.0	200.6	196.8
110°	230.3	234.6	234.6	234.6	232.4



TEST NUMBER: P902504

CATALOG NUMBER: DFN2DIP-HX2F0-060D030US830-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	266.4	271.0	270.1	268.0	266.4
115°	302.0	306.2	304.9	304.2	302.0
117.5°	337.2	343.2	339.4	337.2	335.1
120°	372.9	378.8	372.9	372.9	370.4
122.5°	405.2	412.7	409.0	406.8	405.2
125°	439.2	445.9	443.7	441.3	440.5
127.5°	472.3	480.7	477.8	474.5	472.3
130°	503.3	513.0	511.7	510.1	507.1
132.5°	538.1	545.6	546.2	542.4	540.3
135°	568.1	576.4	578.1	577.2	575.0
137.5°	601.4	608.2	609.5	609.1	605.8
140°	630.8	637.6	641.4	641.4	638.4
142.5°	661.1	667.8	670.0	670.8	667.8
145°	689.7	695.0	699.4	700.1	697.2
147.5°	715.3	722.0	725.2	726.6	723.6
150°	741.7	746.3	749.2	751.7	749.2
152.5°	765.2	769.7	773.5	776.5	773.5
155°	788.6	790.7	793.1	796.9	794.6
157.5°	808.8	810.4	811.8	817.2	813.4
160°	826.9	828.5	829.3	833.9	830.7
162.5°	843.6	843.6	844.4	849.5	845.7
165°	857.9	857.1	857.1	862.4	858.7
167.5°	870.8	868.4	868.4	873.7	870.0
170°	880.5	878.4	877.6	883.0	878.4
172.5°	887.2	885.1	884.3	889.7	885.1
175°	892.7	890.5	888.9	894.3	889.7
177.5°	895.6	893.4	891.8	896.5	891.8
180°	894.3	894.3	894.3	894.3	894.3

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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	14.30	15.28	15.11	16.11	17.14	10.28	11.26	11.10	12.09	13.12
	3H	15.96	16.84	16.79	17.68	18.74	11.46	12.34	12.29	13.18	14.24
	4H	16.56	17.38	17.41	18.23	19.30	11.91	12.73	12.75	13.58	14.65
	6H	16.97	17.73	17.83	18.59	19.67	12.22	12.98	13.08	13.84	14.92
	8H	17.09	17.81	17.95	18.69	19.77	12.31	13.03	13.18	13.91	14.99
	12H	17.14	17.83	18.02	18.70	19.81	12.35	13.04	13.22	13.91	15.01
4H	2H	14.33	15.15	15.18	16.00	17.07	10.88	11.70	11.73	12.55	13.62
	3H	16.14	16.83	17.01	17.71	18.80	12.22	12.91	13.08	13.79	14.88
	4H	16.82	17.45	17.70	18.33	19.44	12.76	13.39	13.64	14.27	15.38
	6H	17.32	17.86	18.21	18.76	19.88	13.17	13.71	14.06	14.61	15.73
	8H	17.49	17.99	18.38	18.89	20.01	13.29	13.80	14.19	14.69	15.82
	12H	17.57	18.02	18.48	18.94	20.07	13.36	13.81	14.27	14.72	15.86
8H	4H	16.80	17.30	17.69	18.20	19.32	13.04	13.54	13.93	14.44	15.57
	6H	17.34	17.76	18.26	18.70	19.82	13.54	13.95	14.46	14.89	16.02
	8H	17.54	17.91	18.47	18.84	19.99	13.72	14.08	14.65	15.02	16.16
	12H	17.67	17.99	18.60	18.92	20.11	13.83	14.15	14.76	15.08	16.27
12H	4H	16.75	17.21	17.67	18.12	19.26	13.05	13.50	13.96	14.42	15.55
	6H	17.31	17.68	18.24	18.62	19.76	13.58	13.95	14.51	14.88	16.03
	8H	17.52	17.85	18.46	18.77	19.97	13.78	14.11	14.71	15.03	16.23