

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: P916148

Luminaire Tested: DFN2DIP-HX2F0-060D040US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916148
REPORT IS A COMBINATION OF REPORTS P899180 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-060D040US930-RLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

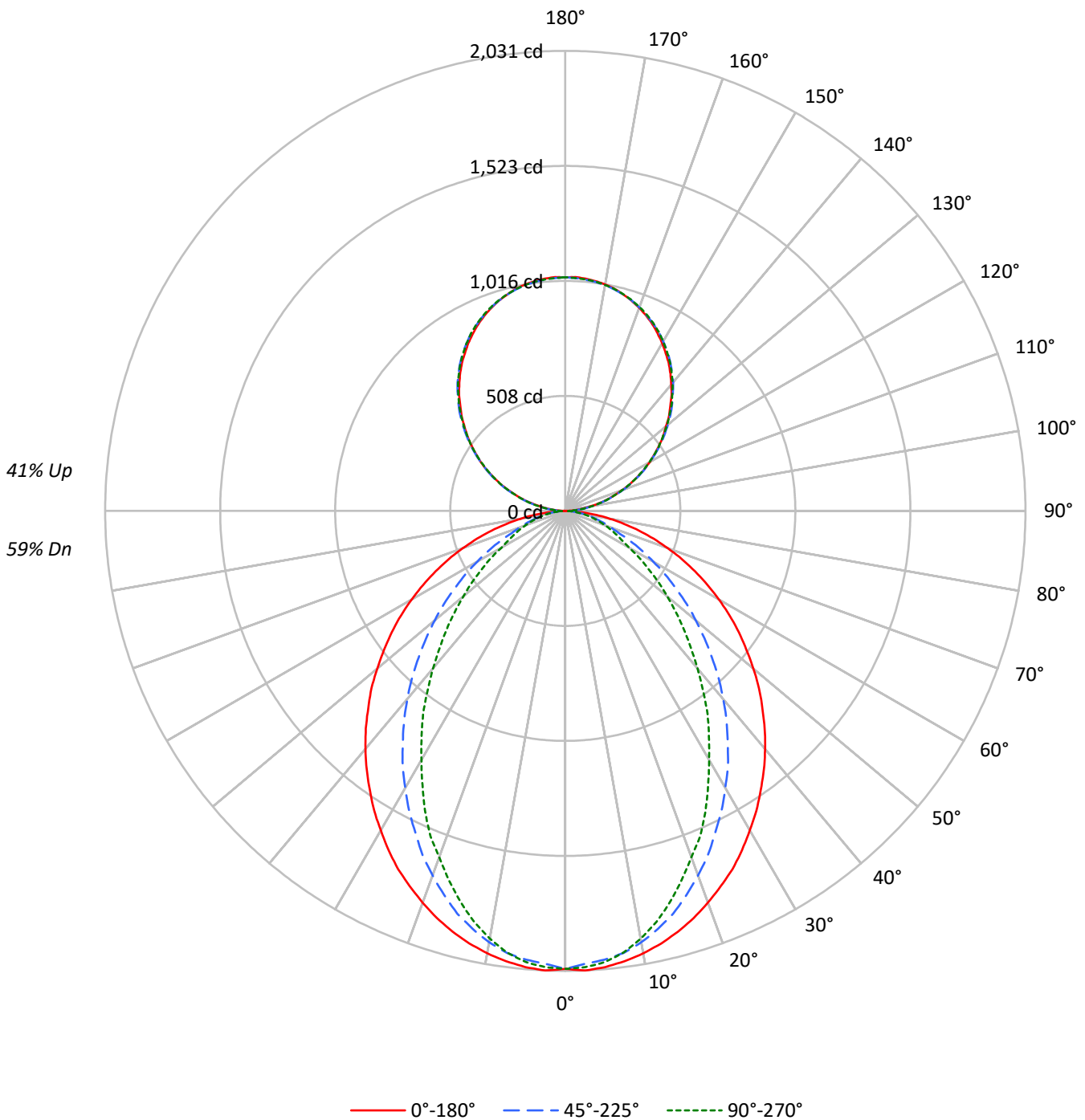
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7044.1 lumens
Efficiency: N/A
Efficacy: 79.3 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: General Diffuse

Input Watts (W): 88.8
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

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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
RCR																				
0	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59		
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56	51		
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48	44		
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41	38		
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36	33		
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32	29		
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28	26		
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25	23		
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23	21		
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21	19		
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19	17		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4764	4764	4764
5°	4764	4677	4709
10°	4709	4574	4547
15°	4637	4411	4302
20°	4543	4193	4005
25°	4448	3950	3718
30°	4322	3701	3357
35°	4198	3435	3040
40°	4072	3161	2678
45°	3926	2859	2351
50°	3775	2555	2031
55°	3616	2231	1725
60°	3431	1895	1412
65°	3219	1554	1261
70°	2961	1236	1129
75°	2636	1068	1010
80°	2169	865	851
85°	1419	534	596

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3926 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.5	2.7
10°-20°	520.2	7.4
20°-30°	730.3	10.4
30°-40°	796.1	11.3
40°-50°	731.7	10.4
50°-60°	574.6	8.2
60°-70°	374.0	5.3
70°-80°	192.5	2.7
80°-90°	52.1	0.7
90°-100°	63.8	0.9
100°-110°	202.8	2.9
110°-120°	347.0	4.9
120°-130°	456.4	6.5
130°-140°	512.3	7.3
140°-150°	502.4	7.1
150°-160°	421.4	6.0
160°-170°	279.5	4.0
170°-180°	97.7	1.4
0°-30°	1439.9	20.4
0°-40°	2236.0	31.7
0°-60°	3542.3	50.3
0°-90°	4160.9	59.1
90°-120°	613.6	8.7
90°-150°	2084.7	29.6
90°-180°	2883.0	40.9
0°-180°	7044.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2022	2022	2022	2022	2022	
5°	2022	2013	1989	2005	2000	192
15°	1923	1903	1841	1806	1788	542
25°	1746	1687	1566	1491	1464	803
35°	1504	1411	1250	1134	1094	941
45°	1230	1107	915	785	741	950
55°	935	792	595	485	450	835
65°	631	483	318	256	251	626
75°	337	208	146	134	132	356
85°	79	40	35	35	35	90
90°	1	11	30	29	30	7
95°	45	54	56	56	54	51
105°	187	190	192	193	193	198
115°	348	353	352	351	348	344
125°	506	514	512	509	508	453
135°	655	665	667	666	663	506
145°	795	802	807	808	804	497
155°	910	912	915	919	916	419
165°	989	988	988	995	990	279
175°	1030	1027	1025	1031	1026	98
180°	1031	1031	1031	1031	1031	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2021.8	2021.8	2021.8	2021.8	2021.8
2.5°	2030.9	2021.8	2001.6	2020.0	2016.3
5°	2021.8	2012.6	1988.8	2005.3	1999.8
7.5°	2005.3	1994.4	1968.8	1976.0	1966.8
10°	1983.3	1970.5	1934.1	1928.4	1917.5
12.5°	1956.0	1939.4	1889.9	1879.1	1858.9
15°	1923.0	1902.7	1840.6	1805.9	1787.6
17.5°	1884.6	1855.2	1778.3	1738.1	1708.9
20°	1840.6	1803.9	1712.5	1666.9	1626.5
22.5°	1793.1	1750.9	1644.8	1582.7	1555.3
25°	1745.6	1686.9	1566.2	1491.3	1463.7
27.5°	1688.9	1626.5	1493.0	1407.0	1364.9
30°	1628.5	1558.8	1412.4	1319.2	1269.7
32.5°	1569.9	1485.6	1335.8	1225.9	1180.1
35°	1504.1	1410.7	1249.8	1134.4	1094.0
37.5°	1440.0	1339.2	1169.2	1042.8	997.2
40°	1372.2	1262.6	1084.9	955.0	907.5
42.5°	1302.8	1185.7	1000.9	865.4	819.8
45°	1229.6	1106.8	914.9	784.8	740.9
47.5°	1160.1	1030.2	832.6	702.5	662.3
50°	1083.2	953.3	752.0	625.7	587.4
52.5°	1008.0	870.8	675.1	554.4	519.7
55°	934.9	792.2	594.6	484.9	450.1
57.5°	860.0	713.5	523.3	420.9	391.5
60°	783.1	636.7	448.3	355.1	325.7
62.5°	708.2	561.8	384.2	296.4	281.8
65°	631.3	483.0	318.4	256.2	250.6
67.5°	558.1	409.8	256.2	225.0	219.6
70°	481.2	338.5	212.1	194.0	186.5
72.5°	408.1	272.6	177.4	162.9	159.1
75°	336.6	208.5	146.3	133.5	131.8
77.5°	265.4	148.1	115.3	107.9	104.3
80°	199.3	106.2	87.7	80.6	80.6
82.5°	139.0	71.4	60.3	56.7	56.7
85°	78.6	40.2	34.7	34.7	34.7
87.5°	29.4	14.6	14.6	12.8	12.8
90°	0.9	11.2	30.5	28.6	29.5
92.5°	19.2	26.1	27.1	28.0	28.0
95°	45.4	54.1	55.7	55.7	54.1
97.5°	75.6	83.6	87.1	87.1	87.1
100°	110.4	117.6	120.0	120.0	119.1
102.5°	147.1	152.4	155.8	156.7	155.8
105°	187.2	189.6	191.5	193.1	193.1
107.5°	227.0	230.7	230.7	231.3	227.0
110°	265.5	270.5	270.5	270.5	268.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	307.2	312.5	311.5	309.1	307.2
115°	348.2	353.3	351.6	350.7	348.2
117.5°	389.0	395.8	391.5	389.0	386.5
120°	430.1	436.8	430.1	430.1	427.2
122.5°	467.3	476.1	471.7	469.2	467.3
125°	506.5	514.3	511.8	509.0	508.1
127.5°	544.8	554.4	551.0	547.2	544.8
130°	580.5	591.7	590.2	588.3	584.9
132.5°	620.6	629.3	630.0	625.6	623.1
135°	655.2	664.8	666.7	665.7	663.2
137.5°	693.7	701.5	703.0	702.4	698.7
140°	727.6	735.4	739.7	739.7	736.3
142.5°	762.5	770.2	772.7	773.6	770.2
145°	795.4	801.6	806.6	807.6	804.1
147.5°	824.9	832.7	836.4	838.0	834.5
150°	855.4	860.7	864.1	866.9	864.1
152.5°	882.5	887.7	892.1	895.5	892.1
155°	909.5	912.0	914.8	919.2	916.3
157.5°	932.9	934.7	936.2	942.5	938.1
160°	953.7	955.5	956.4	961.7	958.0
162.5°	972.9	972.9	973.9	979.7	975.4
165°	989.4	988.5	988.5	994.7	990.3
167.5°	1004.4	1001.5	1001.5	1007.8	1003.4
170°	1015.5	1013.0	1012.1	1018.3	1013.0
172.5°	1023.3	1020.8	1019.9	1026.1	1020.8
175°	1029.6	1027.0	1025.2	1031.4	1026.1
177.5°	1033.0	1030.5	1028.6	1033.9	1028.6
180°	1031.4	1031.4	1031.4	1031.4	1031.4



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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	13.24	14.15	14.12	15.05	16.19	9.22	10.13	10.10	11.03	12.17
	3H	14.90	15.71	15.79	16.62	17.78	10.40	11.21	11.30	12.12	13.29
	4H	15.49	16.26	16.40	17.17	18.35	10.84	11.61	11.75	12.52	13.70
	6H	15.90	16.61	16.82	17.53	18.71	11.15	11.86	12.08	12.78	13.97
	8H	16.02	16.69	16.95	17.63	18.81	11.24	11.91	12.17	12.85	14.03
	12H	16.07	16.71	17.00	17.64	18.85	11.28	11.92	12.21	12.85	14.06
4H	2H	13.26	14.03	14.18	14.94	16.12	9.81	10.58	10.73	11.50	12.67
	3H	15.07	15.71	16.00	16.65	17.84	11.15	11.79	12.08	12.73	13.92
	4H	15.75	16.33	16.68	17.27	18.48	11.69	12.27	12.62	13.21	14.42
	6H	16.24	16.74	17.19	17.71	18.92	12.09	12.59	13.04	13.56	14.77
	8H	16.41	16.87	17.36	17.83	19.06	12.21	12.68	13.17	13.64	14.87
	12H	16.49	16.91	17.46	17.89	19.12	12.27	12.69	13.24	13.67	14.90
8H	4H	15.72	16.18	16.67	17.14	18.37	11.96	12.43	12.91	13.38	14.61
	6H	16.26	16.64	17.24	17.64	18.87	12.46	12.84	13.43	13.84	15.07
	8H	16.46	16.80	17.45	17.79	19.03	12.63	12.98	13.62	13.96	15.21
	12H	16.58	16.88	17.57	17.86	19.16	12.74	13.04	13.73	14.02	15.32
12H	4H	15.67	16.09	16.64	17.07	18.30	11.96	12.38	12.93	13.36	14.59
	6H	16.23	16.57	17.22	17.56	18.81	12.50	12.84	13.49	13.83	15.07
	8H	16.44	16.74	17.43	17.72	19.01	12.70	13.00	13.69	13.98	15.27