

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: P916141

Luminaire Tested: DFN2DIP-HX2F0-060D020US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916141
REPORT IS A COMBINATION OF REPORTS P900680 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-060D020US930-RLLONL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

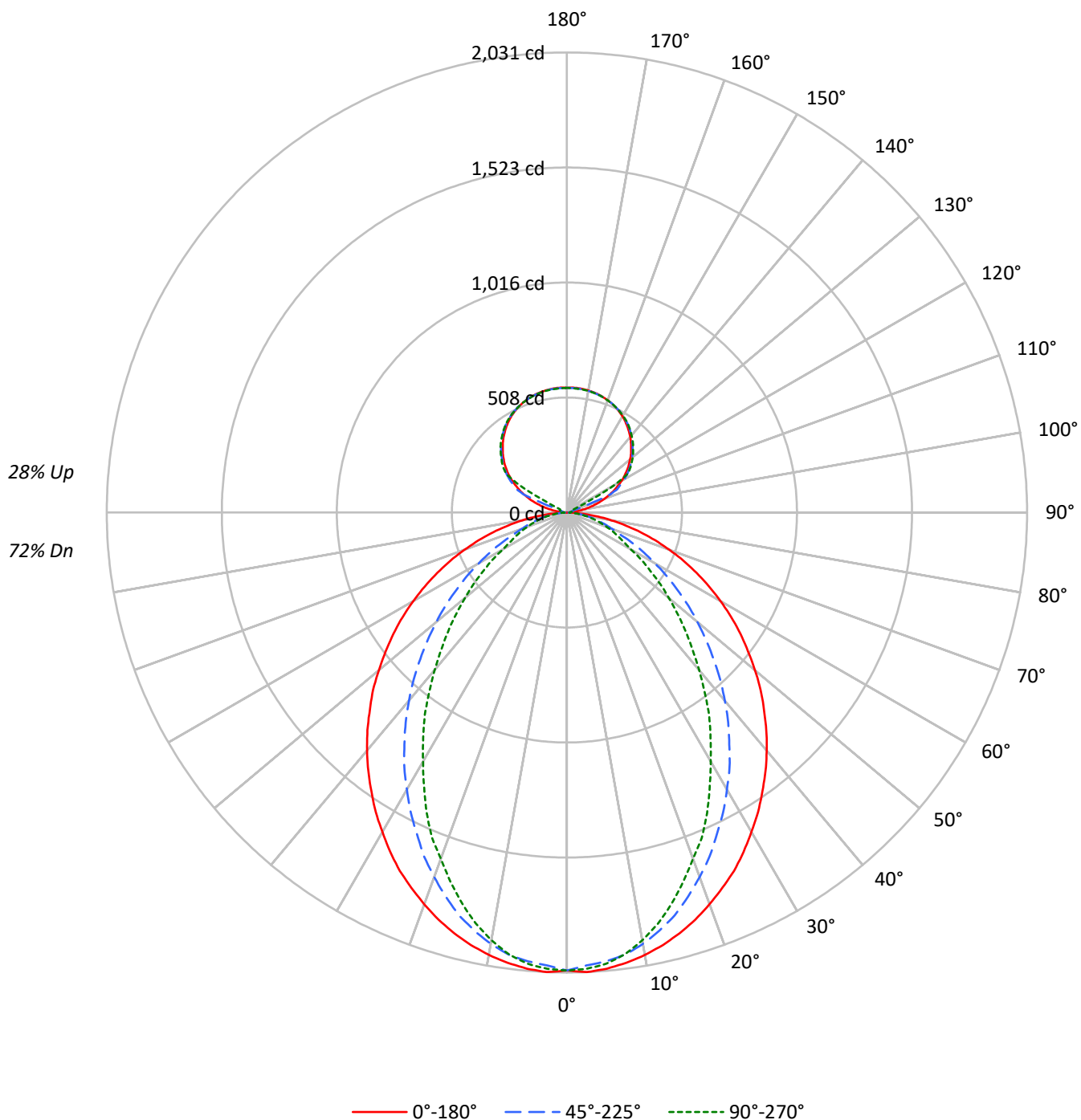
Lumens per Lamp: N/A
Luminaire Lumens: 5772.3 lumens
Efficiency: N/A
Efficacy: 77.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 74.7
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76
1	103	99	95	92	98	94	91	88	85	82	80	76	75	73	69	67	66
2	95	87	81	76	90	83	78	73	75	71	68	68	65	62	61	59	57
3	87	78	70	65	82	74	67	62	67	62	58	61	57	53	55	52	49
4	80	69	61	55	76	66	59	54	60	54	50	55	50	46	50	46	43
5	74	62	54	48	70	59	52	47	54	48	44	50	45	41	45	41	38
6	68	56	48	42	65	54	46	41	49	43	39	45	40	36	41	37	34
7	63	51	43	38	60	49	42	36	45	39	34	41	36	32	38	34	30
8	59	47	39	34	56	45	38	33	41	35	31	38	33	29	35	31	27
9	55	43	35	30	52	41	34	30	38	32	28	35	30	26	32	28	25
10	52	40	32	28	49	38	31	27	35	29	25	33	28	24	30	26	23

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	3.3
10°-20°	520.2	9.0
20°-30°	730.3	12.7
30°-40°	796.1	13.8
40°-50°	731.7	12.7
50°-60°	574.6	10.0
60°-70°	374.0	6.5
70°-80°	192.5	3.3
80°-90°	50.1	0.9
90°-100°	18.1	0.3
100°-110°	67.6	1.2
110°-120°	179.4	3.1
120°-130°	297.6	5.2
130°-140°	316.1	5.5
140°-150°	293.8	5.1
150°-160°	236.2	4.1
160°-170°	152.2	2.6
170°-180°	52.4	0.9
0°-30°	1439.9	24.9
0°-40°	2236.0	38.7
0°-60°	3542.3	61.4
0°-90°	4159.0	72.1
90°-120°	265.2	4.6
90°-150°	1172.6	20.3
90°-180°	1613.0	27.9
0°-180°	5772.3	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°	0	5	8	10	11	5
95°	26	13	16	18	17	31
105°	121	133	24	29	30	129
115°	229	236	246	61	33	225
125°	324	329	336	339	340	289
135°	401	407	410	415	414	309
145°	465	464	471	474	472	291
155°	512	508	513	515	512	236
165°	539	537	538	541	538	152
175°	552	549	550	552	548	52
180°	550	550	550	550	550	

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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°	0.4	4.8	7.9	9.9	10.8
92.5°	9.9	8.4	9.5	10.4	10.8
95°	25.8	12.7	15.5	17.5	17.1
97.5°	46.6	13.9	20.3	21.5	21.9
100°	70.5	15.9	22.7	25.8	26.7
102.5°	96.8	96.0	23.5	27.9	29.1
105°	121.1	133.0	24.3	28.6	30.2
107.5°	149.4	159.2	25.1	29.4	31.1
110°	176.4	184.7	69.7	29.9	31.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	201.9	209.0	202.3	30.7	31.9
115°	228.9	235.7	245.7	61.3	32.7
117.5°	252.4	260.4	267.2	210.3	105.9
120°	278.8	284.7	291.9	296.7	242.9
122.5°	301.0	307.4	315.4	317.7	318.2
125°	323.8	328.9	336.5	339.2	340.5
127.5°	344.5	350.0	356.0	360.0	360.4
130°	363.9	370.3	374.7	379.1	378.7
132.5°	383.8	389.1	393.4	397.0	396.6
135°	400.6	407.0	410.5	414.6	413.8
137.5°	418.1	422.9	426.9	430.9	429.7
140°	435.2	438.5	442.8	446.4	444.4
142.5°	449.6	452.4	457.5	460.7	458.7
145°	464.7	464.3	471.1	473.9	471.9
147.5°	477.8	476.6	483.4	485.3	483.8
150°	490.6	487.8	494.2	496.5	494.6
152.5°	501.3	498.1	504.1	506.5	503.7
155°	511.7	508.1	512.9	515.3	512.1
157.5°	520.1	516.9	520.5	523.3	520.1
160°	527.3	524.8	527.3	529.6	526.8
162.5°	533.5	531.2	533.2	536.0	532.4
165°	539.2	536.8	537.9	540.8	537.9
167.5°	543.6	541.1	542.3	545.2	541.5
170°	547.1	544.7	545.5	548.3	544.7
172.5°	549.5	547.1	548.0	550.7	547.1
175°	551.5	548.7	549.5	552.3	548.3
177.5°	552.3	549.5	549.9	552.7	549.1
180°	550.3	550.3	550.3	550.3	550.3

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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	14.28	15.33	15.03	16.10	17.02	10.27	11.32	11.02	12.08	13.00
	3H	15.95	16.89	16.72	17.67	18.62	11.46	12.40	12.22	13.17	14.12
	4H	16.56	17.44	17.34	18.22	19.19	11.90	12.79	12.69	13.57	14.54
	6H	16.97	17.78	17.76	18.58	19.55	12.22	13.04	13.02	13.83	14.81
	8H	17.09	17.86	17.89	18.68	19.65	12.31	13.09	13.11	13.90	14.88
	12H	17.15	17.89	17.96	18.69	19.70	12.35	13.09	13.16	13.90	14.90
4H	2H	14.33	15.21	15.11	15.99	16.96	10.88	11.76	11.66	12.54	13.51
	3H	16.15	16.88	16.94	17.70	18.68	12.23	12.96	13.02	13.78	14.76
	4H	16.83	17.49	17.64	18.31	19.32	12.77	13.43	13.58	14.25	15.26
	6H	17.33	17.91	18.16	18.75	19.76	13.18	13.76	14.01	14.60	15.61
	8H	17.50	18.03	18.33	18.87	19.90	13.30	13.84	14.14	14.68	15.71
	12H	17.59	18.07	18.44	18.93	19.96	13.37	13.85	14.22	14.71	15.74
8H	4H	16.81	17.34	17.64	18.18	19.21	13.05	13.59	13.88	14.42	15.45
	6H	17.35	17.80	18.21	18.68	19.70	13.55	14.00	14.41	14.88	15.90
	8H	17.55	17.95	18.42	18.83	19.87	13.73	14.12	14.60	15.00	16.04
	12H	17.69	18.03	18.56	18.90	20.00	13.84	14.19	14.72	15.06	16.16
12H	4H	16.77	17.25	17.62	18.11	19.14	13.06	13.54	13.91	14.40	15.43
	6H	17.33	17.72	18.20	18.60	19.64	13.59	13.99	14.47	14.87	15.91
	8H	17.54	17.89	18.41	18.75	19.85	13.80	14.15	14.67	15.01	16.11