

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: P917131

Luminaire Tested: DFN2DIP-SQ2F0-030D080US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917131
REPORT IS A COMBINATION OF REPORTS P901352 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-030D080US930-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

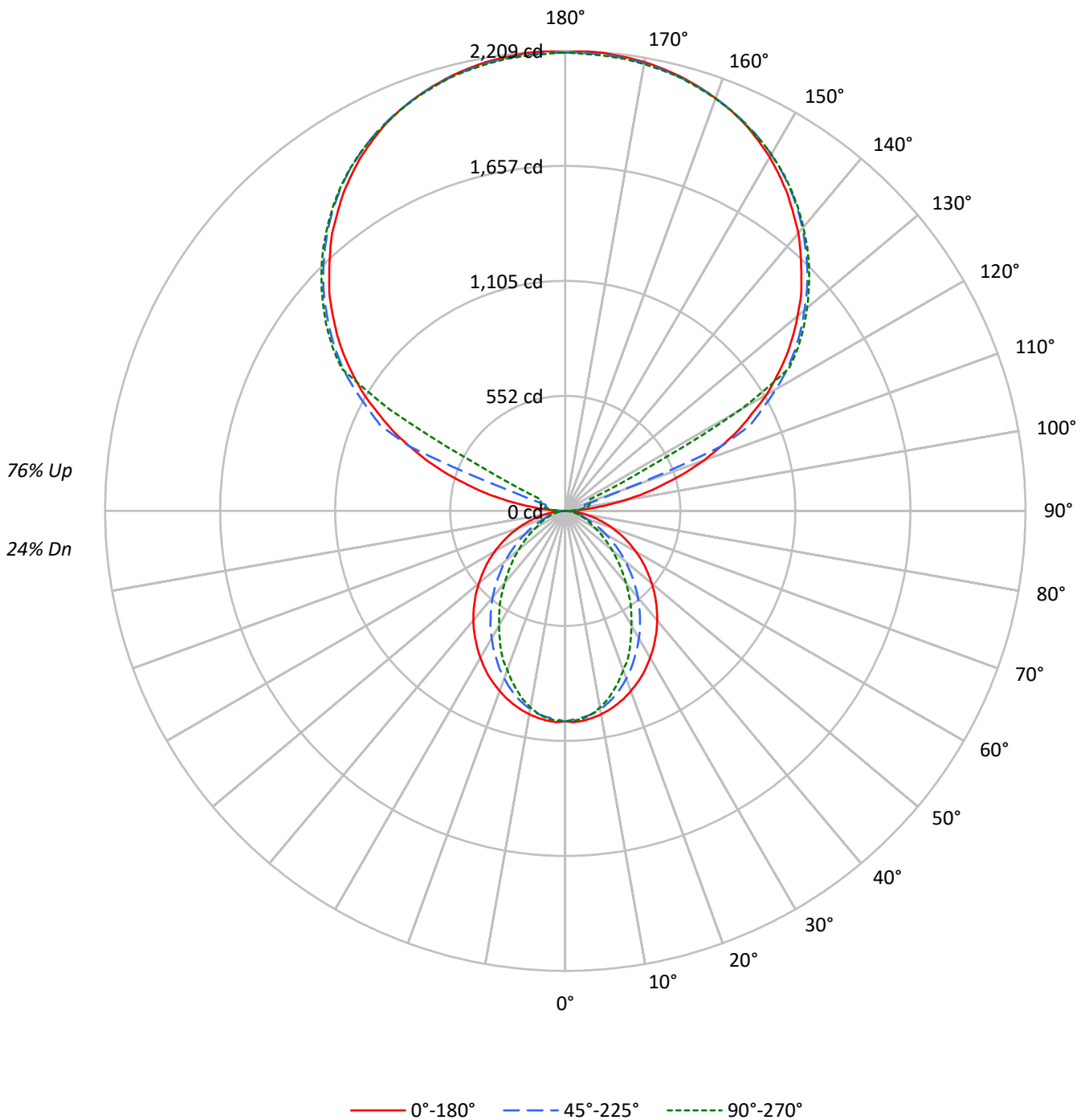
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8536.2 lumens
Efficiency: N/A
Efficacy: 97.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 88
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P917131
CATALOG NUMBER: DFN2DIP-SQ2F0-030D080US930-RLLONL

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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	0	
RCR																						
0	101	101	101	101	90	90	90	90	69	69	69	50	50	50	33	33	33	24				24
1	92	88	85	81	82	79	76	73	61	59	57	44	43	42	29	28	28	21				21
2	84	77	71	67	75	69	64	60	53	50	47	39	37	35	26	25	24	18				18
3	77	68	61	56	68	61	55	50	47	43	40	35	32	30	23	22	21	15				15
4	70	60	53	47	62	54	48	43	42	38	34	31	28	26	21	19	18	14				14
5	65	54	46	40	57	48	42	37	38	33	30	28	25	23	19	17	16	12				12
6	59	48	40	35	53	43	37	32	34	29	26	25	22	20	17	15	14	11				11
7	55	43	36	30	49	39	32	28	31	26	23	23	20	17	16	14	12	9				9
8	51	39	32	27	45	35	29	25	28	23	20	21	18	16	14	13	11	9				9
9	47	36	29	24	42	32	26	22	25	21	18	19	16	14	13	11	10	8				8
10	44	33	26	21	39	29	23	19	23	19	16	18	15	13	12	11	9	7				7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2223	2223	2223
5°	2223	2183	2198
10°	2197	2135	2124
15°	2163	2060	2010
20°	2119	1958	1872
25°	2074	1845	1739
30°	2015	1729	1571
35°	1957	1605	1424
40°	1898	1478	1255
45°	1829	1337	1102
50°	1758	1195	953
55°	1683	1044	811
60°	1597	887	664
65°	1497	728	594
70°	1376	580	534
75°	1223	502	479
80°	1005	408	406
85°	654	254	289

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2092 cd/sqm



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CATALOG NUMBER: DFN2DIP-SQ2F0-030D080US930-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.7	1.1
10°-20°	260.1	3.0
20°-30°	365.1	4.3
30°-40°	398.0	4.7
40°-50°	365.8	4.3
50°-60°	287.3	3.4
60°-70°	187.0	2.2
70°-80°	96.3	1.1
80°-90°	28.5	0.3
90°-100°	72.6	0.9
100°-110°	270.6	3.2
110°-120°	717.6	8.4
120°-130°	1190.2	13.9
130°-140°	1264.3	14.8
140°-150°	1175.0	13.8
150°-160°	944.7	11.1
160°-170°	608.7	7.1
170°-180°	209.5	2.5
0°-30°	720.0	8.4
0°-40°	1118.0	13.1
0°-60°	1771.2	20.7
0°-90°	2082.9	24.4
90°-120°	1060.8	12.4
90°-150°	4690.4	54.9
90°-180°	6453.0	75.6
0°-180°	8536.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1011	1011	1011	1011	1011	
5°	1011	1006	994	1003	1000	96
15°	962	951	920	903	894	271
25°	873	843	783	746	732	401
35°	752	705	625	567	547	471
45°	615	553	458	392	370	475
55°	467	396	297	242	225	418
65°	316	242	159	128	125	313
75°	168	104	73	67	66	178
85°	39	20	17	17	17	45
90°	2	19	32	40	43	8
95°	104	51	62	70	68	123
105°	484	532	97	115	121	517
115°	916	943	983	245	131	902
125°	1295	1316	1346	1357	1362	1155
135°	1602	1628	1642	1658	1655	1238
145°	1859	1857	1884	1895	1887	1163
155°	2047	2032	2052	2061	2048	943
165°	2157	2147	2152	2163	2152	609
175°	2206	2195	2198	2209	2193	210
180°	2201	2201	2201	2201	2201	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1010.9	1010.9	1010.9	1010.9	1010.9
2.5°	1015.5	1010.9	1000.8	1010.0	1008.2
5°	1010.9	1006.3	994.4	1002.7	999.9
7.5°	1002.7	997.2	984.4	988.0	983.4
10°	991.6	985.3	967.0	964.2	958.8
12.5°	978.0	969.7	945.0	939.5	929.4
15°	961.5	951.4	920.3	902.9	893.8
17.5°	942.2	927.6	889.2	869.1	854.4
20°	920.3	902.0	856.2	833.5	813.3
22.5°	896.6	875.5	822.4	791.3	777.6
25°	872.8	843.4	783.1	745.6	731.8
27.5°	844.4	813.3	746.5	703.5	682.4
30°	814.2	779.4	706.2	659.7	634.9
32.5°	784.9	742.8	667.9	612.9	590.0
35°	752.0	705.3	624.8	567.2	547.1
37.5°	720.0	669.6	584.6	521.4	498.6
40°	686.2	631.3	542.5	477.5	453.8
42.5°	651.3	592.9	500.4	432.7	409.9
45°	614.8	553.4	457.5	392.4	370.5
47.5°	580.0	515.1	416.3	351.2	331.2
50°	541.6	476.6	376.0	312.8	293.7
52.5°	504.0	435.5	337.6	277.2	259.8
55°	467.4	396.1	297.3	242.5	225.1
57.5°	430.0	356.8	261.7	210.4	195.8
60°	391.5	318.4	224.1	177.5	162.9
62.5°	354.1	280.9	192.1	148.2	141.0
65°	315.6	241.5	159.1	128.1	125.3
67.5°	279.1	204.9	128.1	112.5	109.7
70°	240.6	169.3	106.1	96.9	93.3
72.5°	204.0	136.2	88.7	81.4	79.6
75°	168.3	104.3	73.2	66.8	65.9
77.5°	132.6	74.0	57.6	54.0	52.1
80°	99.7	53.1	43.9	40.3	40.3
82.5°	69.5	35.7	30.2	28.4	28.4
85°	39.3	20.1	17.4	17.4	17.4
87.5°	14.7	7.3	7.3	6.4	6.4
90°	1.5	19.1	31.8	39.9	43.0
92.5°	39.9	33.5	38.2	41.4	43.0
95°	103.5	50.9	62.0	70.2	68.5
97.5°	186.3	55.8	81.1	86.1	87.6
100°	282.0	63.8	90.8	103.5	106.6
102.5°	387.0	383.9	94.0	111.4	116.3
105°	484.2	532.1	97.2	114.6	121.1
107.5°	597.3	637.0	100.4	117.8	124.3
110°	705.7	739.0	278.8	119.5	125.8



TEST NUMBER: P917131

CATALOG NUMBER: DFN2DIP-SQ2F0-030D080US930-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	807.6	836.2	809.2	122.5	127.5
115°	915.8	942.9	982.8	245.3	130.7
117.5°	1009.8	1041.6	1068.9	840.9	423.7
120°	1115.0	1138.8	1167.6	1186.7	971.6
122.5°	1204.0	1229.6	1261.6	1271.0	1272.8
125°	1294.9	1315.6	1345.9	1357.1	1361.8
127.5°	1377.7	1400.0	1424.1	1439.9	1441.4
130°	1455.8	1481.3	1498.8	1516.4	1514.8
132.5°	1535.5	1556.2	1573.7	1588.0	1586.5
135°	1602.4	1627.9	1642.1	1658.2	1655.0
137.5°	1672.4	1691.5	1707.6	1723.5	1718.7
140°	1740.8	1753.7	1771.2	1785.5	1777.5
142.5°	1798.4	1809.5	1830.1	1842.8	1834.8
145°	1858.9	1857.2	1884.2	1895.4	1887.4
147.5°	1911.3	1906.6	1933.6	1941.6	1935.3
150°	1962.3	1951.2	1976.7	1986.1	1978.2
152.5°	2005.3	1992.6	2016.4	2026.1	2014.9
155°	2046.7	2032.5	2051.6	2061.1	2048.4
157.5°	2080.2	2067.5	2081.9	2093.0	2080.2
160°	2108.9	2099.3	2108.9	2118.4	2107.2
162.5°	2134.3	2124.8	2132.7	2143.9	2129.6
165°	2156.6	2147.2	2151.9	2163.0	2151.9
167.5°	2174.2	2164.5	2169.4	2180.6	2166.2
170°	2188.6	2178.9	2182.1	2193.3	2178.9
172.5°	2198.0	2188.6	2191.8	2202.9	2188.6
175°	2206.0	2194.8	2198.0	2209.1	2193.3
177.5°	2209.1	2198.0	2199.7	2210.8	2196.5
180°	2201.2	2201.2	2201.2	2201.2	2201.2



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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	6.74	7.40	7.89	8.53	10.13	2.70	3.36	3.85	4.49	6.09
	3H	8.38	8.97	9.55	10.12	11.73	3.86	4.44	5.02	5.59	7.20
	4H	8.97	9.53	10.14	10.68	12.29	4.28	4.84	5.45	5.99	7.61
	6H	9.37	9.88	10.54	11.03	12.66	4.58	5.09	5.76	6.24	7.87
	8H	9.48	9.97	10.66	11.13	12.75	4.66	5.15	5.84	6.31	7.93
	12H	9.53	9.99	10.71	11.15	12.79	4.69	5.15	5.87	6.31	7.95
4H	2H	6.73	7.29	7.91	8.44	10.05	3.26	3.82	4.44	4.97	6.58
	3H	8.52	8.99	9.70	10.16	11.79	4.57	5.04	5.76	6.21	7.84
	4H	9.19	9.62	10.37	10.78	12.43	5.10	5.53	6.28	6.69	8.34
	6H	9.68	10.04	10.87	11.23	12.86	5.49	5.86	6.68	7.04	8.68
	8H	9.84	10.18	11.03	11.35	13.01	5.61	5.95	6.79	7.12	8.78
	12H	9.92	10.22	11.12	11.41	13.07	5.65	5.96	6.86	7.15	8.81
8H	4H	9.14	9.48	10.33	10.66	12.31	5.36	5.70	6.54	6.87	8.52
	6H	9.68	9.96	10.89	11.18	12.83	5.84	6.13	7.05	7.34	8.99
	8H	9.88	10.13	11.09	11.32	12.99	6.02	6.27	7.23	7.46	9.13
	12H	10.00	10.21	11.21	11.41	13.11	6.12	6.33	7.33	7.52	9.23
12H	4H	9.09	9.39	10.29	10.58	12.24	5.35	5.66	6.55	6.84	8.50
	6H	9.65	9.90	10.86	11.09	12.76	5.89	6.13	7.10	7.33	9.00
	8H	9.85	10.07	11.07	11.26	12.96	6.08	6.29	7.29	7.48	9.18