

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: P902928

Luminaire Tested: DFN2DIP-PN2F0-060D020US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902928
REPORT IS A COMBINATION OF REPORTS P899469 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-060D020US830-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

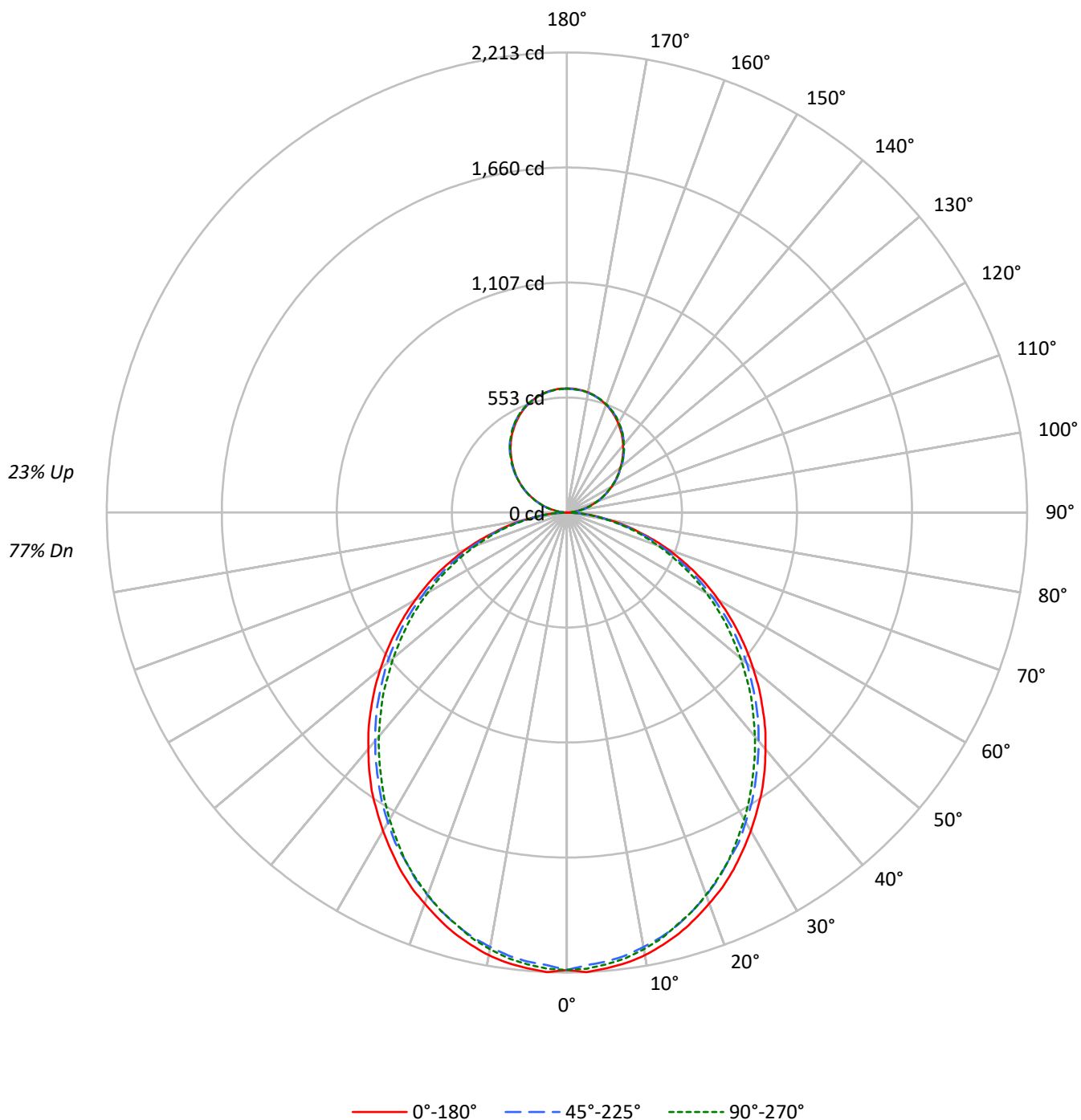
Lumens per Lamp: N/A
Luminaire Lumens: 7267.0 lumens
Efficiency: N/A
Efficacy: 90.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 80.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P902928

CATALOG NUMBER: DFN2DIP-PN2F0-060D020US830-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902928

CATALOG NUMBER: DFN2DIP-PN2F0-060D020US830-FLLFL

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	114	114	114	114	108	108	108	108	98	98	98	89	89	89	81	81	81
1	104	99	95	92	99	95	91	88	86	84	81	79	77	75	72	70	68
2	95	87	80	75	90	83	77	72	76	71	67	69	66	62	63	60	58
3	86	76	69	63	82	73	66	61	67	61	57	61	57	53	56	52	49
4	79	68	59	53	75	65	57	52	60	53	48	55	50	45	50	46	42
5	73	61	52	46	69	58	50	44	53	47	42	49	44	39	45	41	37
6	67	55	46	40	64	52	45	39	48	42	37	45	39	35	41	36	33
7	62	49	41	35	59	48	40	34	44	37	33	41	35	31	37	33	29
8	58	45	37	31	55	43	36	31	40	34	29	37	32	28	34	30	26
9	54	41	33	28	52	40	32	27	37	31	26	34	29	25	32	27	24
10	51	38	30	25	48	37	30	25	34	28	24	32	26	23	30	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4766	4766	4766
5°	4766	4689	4724
10°	4720	4616	4653
15°	4642	4530	4546
20°	4541	4414	4437
25°	4440	4278	4312
30°	4315	4150	4155
35°	4196	4001	3989
40°	4051	3851	3831
45°	3906	3699	3668
50°	3747	3540	3481
55°	3580	3355	3307
60°	3391	3139	3107
65°	3183	2912	2873
70°	2919	2635	2618
75°	2556	2304	2373
80°	2116	1882	1925
85°	1435	1190	1207

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3906 cd/sqm

TEST NUMBER: P902928

CATALOG NUMBER: DFN2DIP-PN2F0-060D020US830-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.1	2.9
10°-20°	582.7	8.0
20°-30°	856.4	11.8
30°-40°	994.6	13.7
40°-50°	993.4	13.7
50°-60°	866.2	11.9
60°-70°	640.3	8.8
70°-80°	362.3	5.0
80°-90°	97.3	1.3
90°-100°	36.9	0.5
100°-110°	117.2	1.6
110°-120°	200.6	2.8
120°-130°	263.8	3.6
130°-140°	296.1	4.1
140°-150°	290.4	4.0
150°-160°	243.6	3.4
160°-170°	161.5	2.2
170°-180°	56.5	0.8
0°-30°	1646.2	22.7
0°-40°	2640.9	36.3
0°-60°	4500.5	61.9
0°-90°	5600.4	77.1
90°-120°	354.7	4.9
90°-150°	1205.0	16.6
90°-180°	1667.0	22.9
0°-180°	7267.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2200	2200	2200	2200	2200	
5°	2200	2192	2169	2186	2182	209
15°	2095	2082	2055	2063	2053	590
25°	1896	1879	1843	1847	1843	872
35°	1636	1615	1581	1568	1557	1021
45°	1331	1316	1284	1261	1253	1027
55°	1007	994	969	944	933	901
65°	679	667	646	626	616	672
75°	355	351	340	328	332	379
85°	87	85	83	76	74	97
90°	1	6	18	16	17	7
95°	26	31	32	32	31	29
105°	108	110	111	112	112	114
115°	201	204	203	203	201	199
125°	293	297	296	294	294	262
135°	379	384	385	385	383	293
145°	460	463	466	467	465	287
155°	526	527	529	531	530	242
165°	572	571	571	575	572	161
175°	595	594	593	596	593	57
180°	596	596	596	596	596	

TEST NUMBER: P902928

CATALOG NUMBER: DFN2DIP-PN2F0-060D020US830-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2200.5	2200.5	2200.5	2200.5	2200.5
2.5°	2213.3	2202.7	2179.3	2200.5	2196.4
5°	2200.5	2192.2	2168.8	2185.7	2181.6
7.5°	2185.7	2173.1	2149.8	2166.8	2162.6
10°	2162.6	2147.8	2122.3	2139.2	2132.9
12.5°	2130.7	2118.1	2092.7	2103.3	2099.0
15°	2094.7	2082.2	2054.6	2063.1	2052.6
17.5°	2050.3	2037.8	2010.2	2020.6	2010.2
20°	2001.6	1989.0	1959.4	1965.7	1957.4
22.5°	1953.1	1934.0	1906.4	1906.4	1902.1
25°	1895.8	1879.1	1843.0	1847.1	1843.0
27.5°	1832.3	1817.5	1790.1	1783.9	1773.3
30°	1769.1	1751.9	1720.3	1714.0	1705.4
32.5°	1701.2	1688.7	1654.7	1641.9	1633.4
35°	1635.7	1614.6	1580.6	1567.8	1557.3
37.5°	1561.6	1542.5	1508.6	1493.7	1483.2
40°	1485.4	1468.4	1434.5	1415.7	1407.1
42.5°	1411.4	1394.3	1360.7	1339.4	1326.7
45°	1331.1	1316.2	1284.3	1261.2	1252.6
47.5°	1252.6	1237.8	1204.0	1180.6	1168.0
50°	1170.1	1159.5	1129.9	1100.2	1089.7
52.5°	1089.7	1074.9	1047.4	1024.2	1009.4
55°	1007.3	994.5	969.1	943.8	933.2
57.5°	924.7	914.2	886.6	861.2	852.6
60°	842.1	833.8	804.2	780.8	774.5
62.5°	761.7	746.9	725.8	704.6	696.2
65°	679.3	666.6	645.5	626.3	615.8
67.5°	594.6	583.9	565.1	550.3	541.7
70°	516.3	507.8	488.7	473.9	465.6
72.5°	435.9	427.4	416.9	402.1	395.8
75°	355.3	351.4	340.5	328.0	332.2
77.5°	283.5	275.0	270.7	264.5	258.2
80°	211.7	209.4	205.2	198.9	194.6
82.5°	143.9	143.9	141.9	133.4	133.4
85°	86.6	84.6	82.6	76.1	74.1
87.5°	38.2	33.9	29.6	23.4	21.1
90°	0.6	6.5	17.6	16.5	17.1
92.5°	11.1	15.1	15.6	16.2	16.2
95°	26.2	31.3	32.1	32.1	31.3
97.5°	43.6	48.4	50.3	50.3	50.3
100°	63.8	68.0	69.4	69.4	68.8
102.5°	85.0	88.0	90.0	90.6	90.0
105°	108.2	109.6	110.7	111.6	111.6
107.5°	131.2	133.4	133.4	133.7	131.2
110°	153.5	156.4	156.4	156.4	155.0

TEST NUMBER: P902928

CATALOG NUMBER: DFN2DIP-PN2F0-060D020US830-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	177.6	180.6	180.1	178.6	177.6
115°	201.3	204.2	203.3	202.7	201.3
117.5°	224.9	228.8	226.3	224.9	223.4
120°	248.5	252.5	248.5	248.5	246.9
122.5°	270.1	275.1	272.7	271.3	270.1
125°	292.8	297.3	295.9	294.3	293.7
127.5°	314.9	320.5	318.5	316.3	314.9
130°	335.5	342.0	341.1	340.1	338.1
132.5°	358.7	363.8	364.1	361.7	360.1
135°	378.7	384.3	385.3	384.8	383.3
137.5°	401.0	405.5	406.4	406.0	403.9
140°	420.6	425.1	427.6	427.6	425.7
142.5°	440.7	445.2	446.7	447.1	445.2
145°	459.8	463.4	466.3	466.7	464.8
147.5°	476.8	481.4	483.5	484.4	482.4
150°	494.5	497.5	499.5	501.1	499.5
152.5°	510.1	513.1	515.7	517.6	515.7
155°	525.8	527.2	528.8	531.3	529.7
157.5°	539.2	540.3	541.2	544.8	542.2
160°	551.3	552.3	552.9	555.9	553.7
162.5°	562.4	562.4	562.9	566.4	563.8
165°	571.9	571.4	571.4	575.0	572.5
167.5°	580.5	578.9	578.9	582.5	580.0
170°	587.0	585.6	585.0	588.6	585.6
172.5°	591.5	590.0	589.6	593.1	590.0
175°	595.1	593.7	592.6	596.2	593.1
177.5°	597.1	595.7	594.6	597.6	594.6
180°	596.2	596.2	596.2	596.2	596.2

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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	14.78	15.95	15.46	16.65	17.48	14.34	15.51	15.03	16.22	17.04
	3H	16.44	17.49	17.14	18.21	19.06	15.96	17.01	16.66	17.73	18.58
	4H	17.03	18.02	17.75	18.75	19.62	16.55	17.54	17.26	18.26	19.13
	6H	17.43	18.35	18.16	19.08	19.96	16.94	17.86	17.67	18.59	19.48
	8H	17.53	18.41	18.27	19.16	20.05	17.05	17.92	17.79	18.68	19.56
	12H	17.59	18.42	18.33	19.17	20.08	17.09	17.93	17.84	18.67	19.59
4H	2H	15.27	16.26	15.99	16.98	17.85	14.92	15.91	15.64	16.63	17.50
	3H	17.14	17.97	17.87	18.73	19.61	16.74	17.57	17.47	18.33	19.21
	4H	17.85	18.60	18.59	19.36	20.28	17.43	18.19	18.18	18.95	19.86
	6H	18.36	19.01	19.13	19.80	20.72	17.94	18.59	18.71	19.38	20.30
	8H	18.51	19.12	19.28	19.90	20.84	18.08	18.70	18.85	19.48	20.41
	12H	18.58	19.14	19.38	19.94	20.88	18.15	18.70	18.94	19.51	20.45
8H	4H	18.06	18.67	18.83	19.45	20.39	17.69	18.30	18.46	19.08	20.02
	6H	18.68	19.18	19.48	20.01	20.95	18.30	18.81	19.10	19.63	20.57
	8H	18.89	19.34	19.70	20.16	21.11	18.51	18.96	19.32	19.78	20.73
	12H	19.02	19.42	19.83	20.23	21.24	18.62	19.02	19.44	19.83	20.85
12H	4H	18.05	18.61	18.85	19.41	20.35	17.69	18.24	18.49	19.05	19.99
	6H	18.70	19.16	19.52	19.98	20.93	18.34	18.79	19.15	19.62	20.57
	8H	18.94	19.34	19.76	20.16	21.17	18.58	18.97	19.39	19.79	20.80