

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: P904341

Luminaire Tested: DFN2DIP-TR2F0-060D020US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904341
REPORT IS A COMBINATION OF REPORTS P901749 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-060D020US830-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

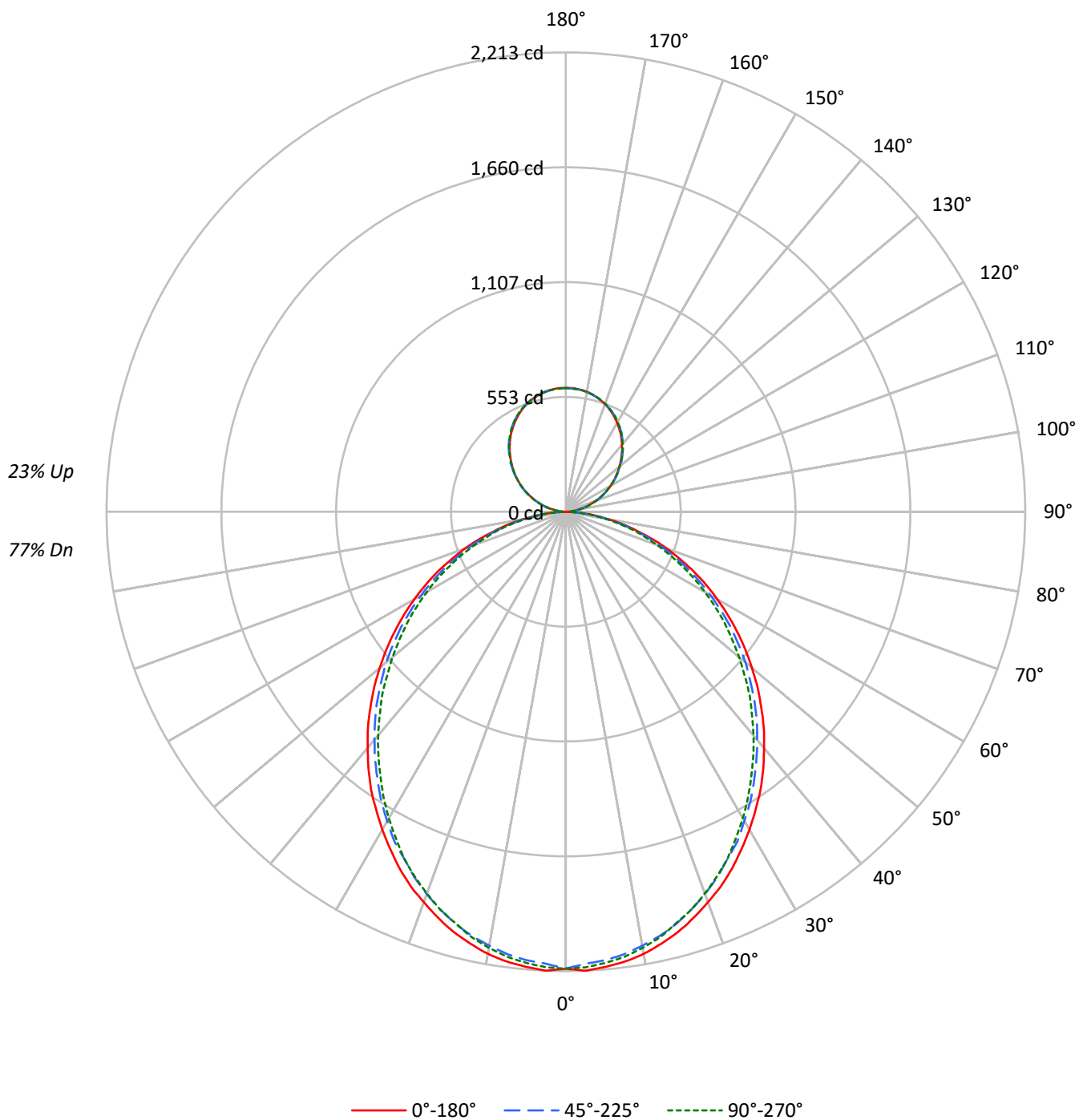
Lumens per Lamp: N/A
Luminaire Lumens: 7267.0 lumens
Efficiency: N/A
Efficacy: 97.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 74.7
Input Voltage (V): 120
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: P904341

CATALOG NUMBER: DFN2DIP-TR2F0-060D020US830-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P904341

CATALOG NUMBER: DFN2DIP-TR2F0-060D020US830-FLONL

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°	4908	4908	4908
5°	4909	4829	4864
10°	4862	4753	4789
15°	4783	4664	4678
20°	4679	4544	4565
25°	4575	4403	4434
30°	4448	4271	4272
35°	4325	4118	4100
40°	4176	3962	3935
45°	4028	3805	3767
50°	3865	3641	3573
55°	3694	3450	3392
60°	3500	3227	3185
65°	3287	2993	2941
70°	3016	2707	2677
75°	2644	2365	2421
80°	2192	1929	1957
85°	1493	1216	1216

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4028 cd/sqm

TEST NUMBER: P904341

CATALOG NUMBER: DFN2DIP-TR2F0-060D020US830-FLLONL

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: P904341

CATALOG NUMBER: DFN2DIP-TR2F0-060D020US830-FLLONL

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: P904341

CATALOG NUMBER: DFN2DIP-TR2F0-060D020US830-FLLONL

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

TEST NUMBER: P904341

CATALOG NUMBER: DFN2DIP-TR2F0-060D020US830-FLLONL

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	14.87	16.04	15.55	16.74	17.57	14.45	15.62	15.13	16.32	17.14
	3H	16.53	17.58	17.23	18.29	19.15	16.07	17.12	16.76	17.83	18.69
	4H	17.11	18.11	17.83	18.83	19.70	16.65	17.65	17.37	18.37	19.24
	6H	17.51	18.43	18.24	19.16	20.05	17.05	17.97	17.78	18.70	19.59
	8H	17.62	18.49	18.36	19.24	20.13	17.16	18.03	17.90	18.78	19.67
	12H	17.67	18.50	18.41	19.25	20.16	17.20	18.04	17.95	18.78	19.70
4H	2H	15.36	16.35	16.08	17.07	17.94	15.02	16.01	15.74	16.74	17.61
	3H	17.22	18.05	17.96	18.81	19.70	16.84	17.67	17.57	18.43	19.32
	4H	17.93	18.69	18.68	19.45	20.36	17.54	18.29	18.29	19.05	19.97
	6H	18.44	19.10	19.21	19.88	20.81	18.05	18.70	18.81	19.49	20.41
	8H	18.59	19.20	19.36	19.98	20.92	18.19	18.80	18.96	19.58	20.52
	12H	18.66	19.21	19.46	20.02	20.96	18.26	18.81	19.05	19.61	20.56
8H	4H	18.14	18.75	18.91	19.54	20.47	17.79	18.40	18.56	19.18	20.12
	6H	18.76	19.27	19.56	20.09	21.03	18.41	18.91	19.21	19.74	20.68
	8H	18.97	19.42	19.78	20.24	21.20	18.61	19.06	19.42	19.89	20.84
	12H	19.10	19.50	19.91	20.31	21.32	18.73	19.13	19.54	19.94	20.95
12H	4H	18.14	18.69	18.93	19.50	20.44	17.80	18.35	18.59	19.15	20.09
	6H	18.79	19.24	19.60	20.06	21.02	18.44	18.90	19.26	19.72	20.67
	8H	19.03	19.42	19.84	20.24	21.25	18.68	19.08	19.49	19.89	20.90