

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: P902168

Luminaire Tested: DFN2DIP-4P2F0-040D030US830-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902168
REPORT IS A COMBINATION OF REPORTS P899022 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D030US830-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

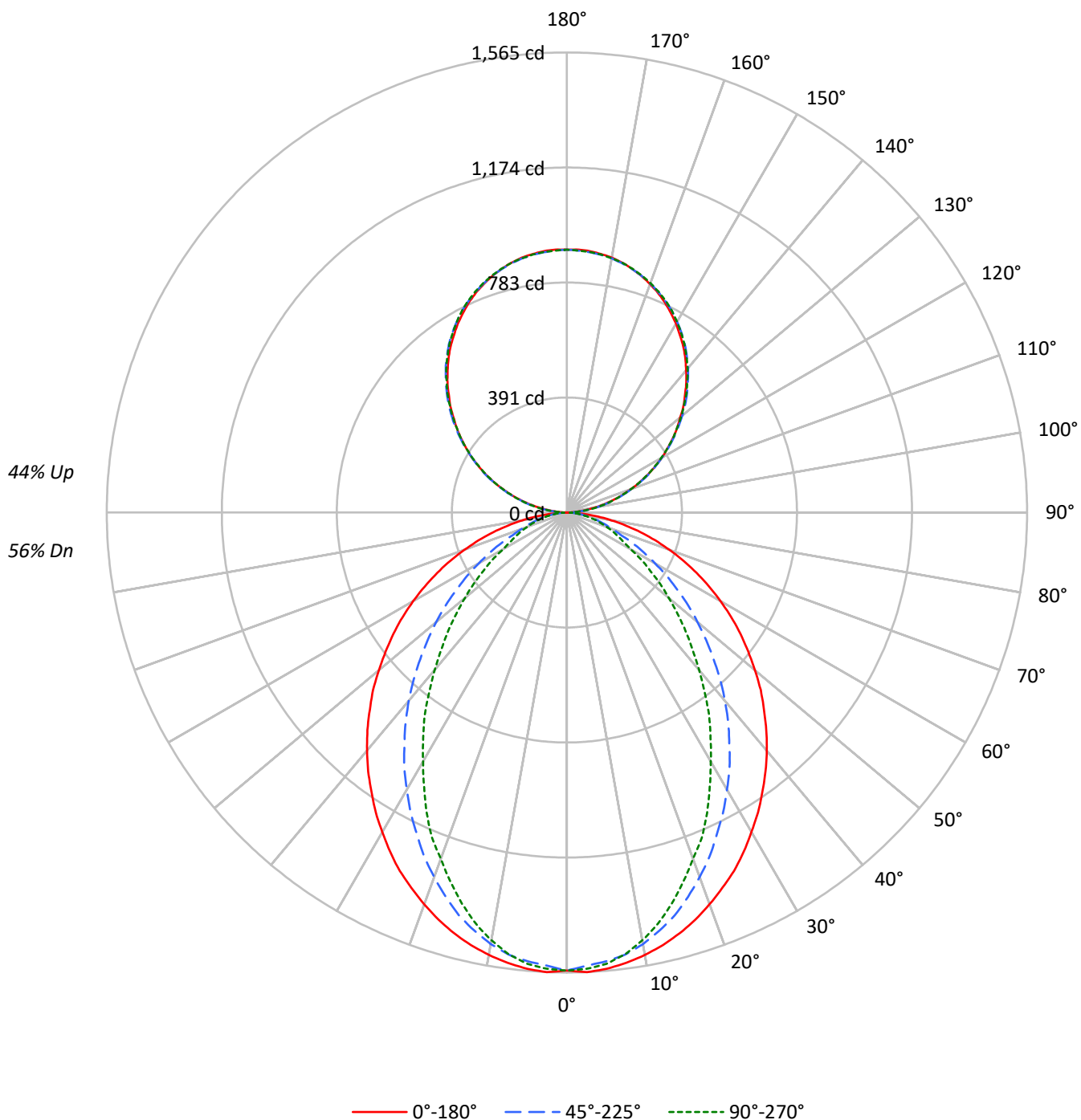
Lumens per Lamp: N/A
Luminaire Lumens: 5707.1 lumens
Efficiency: N/A
Efficacy: 89.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 63.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P902168

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902168

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US830-RLLFLL

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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62
1	100	96	92	88	93	89	86	83	77	75	72	66	64	63	55	54	53
2	91	84	78	73	85	79	73	69	68	64	61	58	56	53	49	47	46
3	84	74	67	62	78	70	63	58	61	56	52	52	49	46	44	42	40
4	77	66	59	53	71	62	55	50	54	49	45	47	43	40	40	37	35
5	71	59	51	46	66	56	49	43	49	43	39	42	38	35	36	33	30
6	65	53	46	40	61	50	43	38	44	38	34	38	34	31	33	30	27
7	61	48	41	35	56	46	39	34	40	35	30	35	31	27	30	27	24
8	56	44	37	31	52	42	35	30	37	31	27	32	28	25	28	25	22
9	53	41	33	28	49	38	32	27	34	28	25	30	25	22	26	23	20
10	49	37	30	25	46	35	29	24	31	26	22	28	23	20	24	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3902	3902	3902
5°	3900	3830	3858
10°	3854	3745	3726
15°	3793	3611	3526
20°	3715	3432	3283
25°	3635	3232	3048
30°	3531	3028	2753
35°	3428	2810	2493
40°	3323	2585	2198
45°	3201	2337	1929
50°	3075	2088	1668
55°	2943	1823	1417
60°	2789	1547	1161
65°	2612	1268	1037
70°	2398	1008	929
75°	2127	870	833
80°	1739	703	703
85°	1122	433	496

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3201 cd/sqm

TEST NUMBER: P902168

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US830-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	2.6
10°-20°	400.9	7.0
20°-30°	562.8	9.9
30°-40°	613.5	10.8
40°-50°	563.9	9.9
50°-60°	442.9	7.8
60°-70°	288.3	5.1
70°-80°	148.4	2.6
80°-90°	40.4	0.7
90°-100°	55.3	1.0
100°-110°	175.8	3.1
110°-120°	300.9	5.3
120°-130°	395.7	6.9
130°-140°	444.2	7.8
140°-150°	435.6	7.6
150°-160°	365.4	6.4
160°-170°	242.3	4.2
170°-180°	84.7	1.5
0°-30°	1109.8	19.4
0°-40°	1723.3	30.2
0°-60°	2730.1	47.8
0°-90°	3207.2	56.2
90°-120°	532.1	9.3
90°-150°	1807.5	31.7
90°-180°	2500.0	43.8
0°-180°	5707.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1558	1558	1558	1558	1558	
5°	1558	1551	1533	1546	1541	148
15°	1482	1466	1419	1392	1378	418
25°	1345	1300	1207	1149	1128	619
35°	1159	1087	963	874	843	726
45°	948	853	705	605	571	732
55°	721	611	458	374	347	644
65°	486	372	245	198	193	482
75°	259	161	113	103	102	274
85°	61	31	27	27	27	70
90°	1	10	26	25	26	6
95°	39	47	48	48	47	44
105°	162	164	166	167	167	171
115°	302	306	305	304	302	299
125°	439	446	444	441	440	392
135°	568	576	578	577	575	439
145°	690	695	699	700	697	431
155°	789	791	793	797	795	363
165°	858	857	857	862	859	242
175°	893	890	889	894	890	85
180°	894	894	894	894	894	

TEST NUMBER: P902168

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US830-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1558.2	1558.2	1558.2	1558.2	1558.2
2.5°	1565.3	1558.2	1542.7	1556.9	1554.0
5°	1558.2	1551.1	1532.8	1545.5	1541.3
7.5°	1545.5	1537.1	1517.4	1522.9	1515.9
10°	1528.6	1518.7	1490.5	1486.2	1477.9
12.5°	1507.5	1494.8	1456.6	1448.2	1432.7
15°	1482.1	1466.5	1418.6	1391.9	1377.8
17.5°	1452.5	1429.8	1370.6	1339.6	1317.0
20°	1418.6	1390.3	1319.8	1284.7	1253.6
22.5°	1382.0	1349.5	1267.6	1219.7	1198.7
25°	1345.3	1300.1	1207.0	1149.3	1128.0
27.5°	1301.7	1253.6	1150.7	1084.4	1051.9
30°	1255.1	1201.4	1088.5	1016.7	978.6
32.5°	1209.9	1145.0	1029.4	944.8	909.5
35°	1159.2	1087.2	963.2	874.3	843.2
37.5°	1109.8	1032.2	901.1	803.7	768.5
40°	1057.6	973.1	836.2	736.1	699.5
42.5°	1004.0	913.8	771.4	666.9	631.8
45°	947.6	853.1	705.1	604.9	571.1
47.5°	894.1	794.0	641.7	541.5	510.5
50°	834.8	734.7	579.6	482.2	452.7
52.5°	776.9	671.2	520.4	427.3	400.5
55°	720.6	610.6	458.3	373.7	346.9
57.5°	662.8	550.0	403.3	324.3	301.8
60°	603.5	490.7	345.4	273.6	251.1
62.5°	545.8	433.0	296.1	228.5	217.3
65°	486.5	372.2	245.3	197.5	193.1
67.5°	430.2	315.8	197.5	173.4	169.2
70°	370.9	260.9	163.5	149.5	143.7
72.5°	314.5	210.1	136.8	125.5	122.7
75°	259.4	160.7	112.8	102.9	101.6
77.5°	204.5	114.1	88.9	83.2	80.3
80°	153.6	81.8	67.6	62.1	62.1
82.5°	107.2	55.0	46.6	43.6	43.6
85°	60.6	31.0	26.8	26.8	26.8
87.5°	22.6	11.2	11.2	9.9	9.9
90°	0.8	9.7	26.4	24.8	25.6
92.5°	16.7	22.6	23.5	24.2	24.2
95°	39.4	46.9	48.3	48.3	46.9
97.5°	65.5	72.5	75.5	75.5	75.5
100°	95.7	101.9	104.1	104.1	103.3
102.5°	127.5	132.1	135.1	135.9	135.1
105°	162.3	164.5	166.1	167.4	167.4
107.5°	196.8	200.0	200.0	200.6	196.8
110°	230.3	234.6	234.6	234.6	232.4

TEST NUMBER: P902168

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US830-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	266.4	271.0	270.1	268.0	266.4
115°	302.0	306.2	304.9	304.2	302.0
117.5°	337.2	343.2	339.4	337.2	335.1
120°	372.9	378.8	372.9	372.9	370.4
122.5°	405.2	412.7	409.0	406.8	405.2
125°	439.2	445.9	443.7	441.3	440.5
127.5°	472.3	480.7	477.8	474.5	472.3
130°	503.3	513.0	511.7	510.1	507.1
132.5°	538.1	545.6	546.2	542.4	540.3
135°	568.1	576.4	578.1	577.2	575.0
137.5°	601.4	608.2	609.5	609.1	605.8
140°	630.8	637.6	641.4	641.4	638.4
142.5°	661.1	667.8	670.0	670.8	667.8
145°	689.7	695.0	699.4	700.1	697.2
147.5°	715.3	722.0	725.2	726.6	723.6
150°	741.7	746.3	749.2	751.7	749.2
152.5°	765.2	769.7	773.5	776.5	773.5
155°	788.6	790.7	793.1	796.9	794.6
157.5°	808.8	810.4	811.8	817.2	813.4
160°	826.9	828.5	829.3	833.9	830.7
162.5°	843.6	843.6	844.4	849.5	845.7
165°	857.9	857.1	857.1	862.4	858.7
167.5°	870.8	868.4	868.4	873.7	870.0
170°	880.5	878.4	877.6	883.0	878.4
172.5°	887.2	885.1	884.3	889.7	885.1
175°	892.7	890.5	888.9	894.3	889.7
177.5°	895.6	893.4	891.8	896.5	891.8
180°	894.3	894.3	894.3	894.3	894.3

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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	12.30	13.19	13.21	14.11	15.29	8.26	9.14	9.17	10.07	11.25
	3H	13.96	14.75	14.88	15.68	16.89	9.43	10.22	10.35	11.16	12.36
	4H	14.56	15.30	15.49	16.24	17.46	9.87	10.62	10.81	11.56	12.77
	6H	14.96	15.65	15.91	16.59	17.82	10.18	10.86	11.12	11.81	13.04
	8H	15.08	15.73	16.03	16.69	17.92	10.26	10.91	11.21	11.87	13.10
	12H	15.13	15.76	16.09	16.71	17.96	10.29	10.92	11.25	11.87	13.12
4H	2H	12.32	13.07	13.26	14.00	15.22	8.85	9.60	9.79	10.53	11.75
	3H	14.13	14.75	15.08	15.72	16.95	10.18	10.80	11.13	11.77	13.00
	4H	14.80	15.37	15.77	16.33	17.59	10.71	11.28	11.67	12.24	13.50
	6H	15.30	15.79	16.27	16.77	18.03	11.11	11.60	12.09	12.59	13.84
	8H	15.46	15.92	16.44	16.90	18.17	11.23	11.69	12.21	12.66	13.93
	12H	15.55	15.96	16.54	16.95	18.23	11.29	11.70	12.28	12.69	13.97
8H	4H	14.77	15.23	15.75	16.21	17.47	10.98	11.44	11.96	12.42	13.69
	6H	15.31	15.69	16.31	16.71	17.98	11.48	11.85	12.48	12.87	14.14
	8H	15.52	15.85	16.52	16.86	18.14	11.65	11.98	12.66	12.99	14.28
	12H	15.64	15.93	16.65	16.93	18.27	11.76	12.05	12.77	13.05	14.38
12H	4H	14.72	15.13	15.72	16.13	17.40	10.99	11.40	11.98	12.39	13.67
	6H	15.29	15.62	16.30	16.63	17.91	11.52	11.85	12.53	12.86	14.15
	8H	15.49	15.79	16.51	16.79	18.12	11.71	12.01	12.73	13.01	14.34