

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: P913057

Luminaire Tested: DFN2DIP-4P2F0-020D030US927-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913057
REPORT IS A COMBINATION OF REPORTS P900538 AND P897455
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-020D030US927-RLLONL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

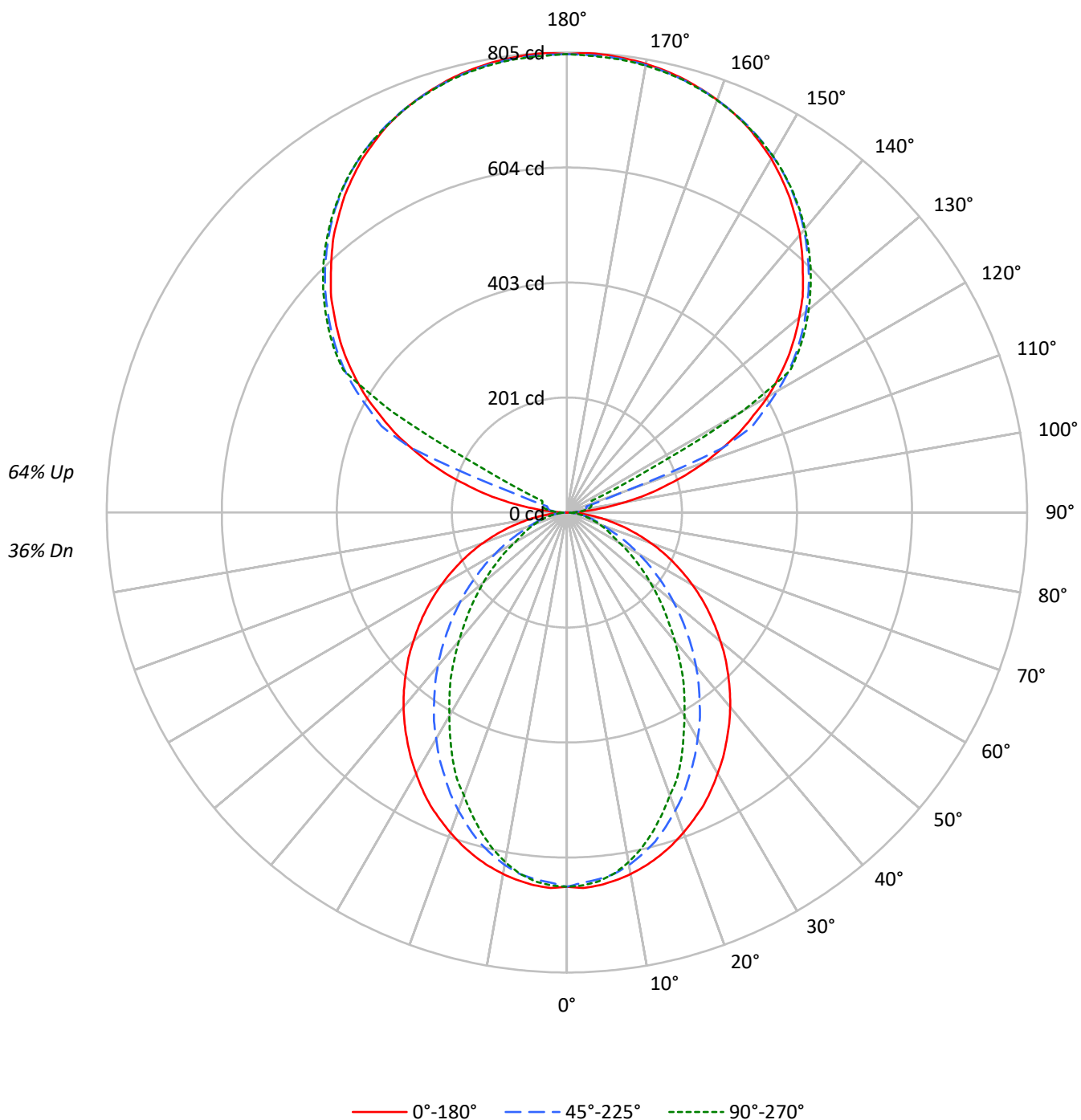
Lumens per Lamp: N/A
Luminaire Lumens: 3699.5 lumens
Efficiency: N/A
Efficacy: 92.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 40
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P913057

CATALOG NUMBER: DFN2DIP-4P2F0-020D030US927-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P913057

CATALOG NUMBER: DFN2DIP-4P2F0-020D030US927-RLLONL

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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44
1	95	91	87	84	86	83	80	77	67	65	63	52	51	50	39	38	38
2	87	80	74	69	78	73	68	63	59	56	53	46	44	42	35	33	32
3	79	70	63	58	72	64	58	53	52	48	45	41	38	36	31	29	28
4	73	63	55	49	66	57	51	46	47	42	38	37	34	31	28	26	24
5	67	56	48	42	60	51	44	39	42	37	33	33	30	27	25	23	21
6	62	50	42	37	56	46	39	34	38	33	29	30	27	24	23	21	19
7	57	45	38	32	52	41	35	30	34	29	26	28	24	21	21	19	17
8	53	41	34	29	48	38	31	27	31	26	23	25	22	19	20	17	15
9	49	37	30	25	45	34	28	24	29	24	20	23	20	17	18	16	14
10	46	34	27	23	42	32	25	21	26	22	18	22	18	15	17	14	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1640	1640	1640
5°	1639	1609	1621
10°	1620	1574	1566
15°	1594	1518	1482
20°	1561	1442	1380
25°	1528	1358	1281
30°	1484	1273	1157
35°	1440	1181	1048
40°	1396	1086	923
45°	1345	983	811
50°	1293	878	701
55°	1237	766	595
60°	1173	650	488
65°	1098	533	436
70°	1007	424	390
75°	894	366	350
80°	731	295	296
85°	470	181	207

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1345 cd/sqm

TEST NUMBER: P913057

CATALOG NUMBER: DFN2DIP-4P2F0-020D030US927-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.4	1.7
10°-20°	168.5	4.6
20°-30°	236.5	6.4
30°-40°	257.8	7.0
40°-50°	237.0	6.4
50°-60°	186.1	5.0
60°-70°	121.2	3.3
70°-80°	62.3	1.7
80°-90°	17.3	0.5
90°-100°	26.5	0.7
100°-110°	98.6	2.7
110°-120°	261.5	7.1
120°-130°	433.7	11.7
130°-140°	460.7	12.5
140°-150°	428.1	11.6
150°-160°	344.2	9.3
160°-170°	221.8	6.0
170°-180°	76.3	2.1
0°-30°	466.4	12.6
0°-40°	724.2	19.6
0°-60°	1147.3	31.0
0°-90°	1348.1	36.4
90°-120°	386.5	10.4
90°-150°	1709.0	46.2
90°-180°	2351.0	63.5
0°-180°	3699.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	655	655	655	655	655	
5°	655	652	644	650	648	62
15°	623	616	596	585	579	176
25°	565	546	507	483	474	260
35°	487	457	405	367	354	305
45°	398	358	296	254	240	308
55°	303	257	193	157	146	271
65°	204	156	103	83	81	203
75°	109	68	47	43	43	115
85°	25	13	11	11	11	29
90°	1	7	12	15	16	3
95°	38	18	23	26	25	45
105°	176	194	35	42	44	188
115°	334	344	358	89	48	329
125°	472	479	490	494	496	421
135°	584	593	598	604	603	451
145°	677	677	687	691	688	424
155°	746	741	748	751	746	344
165°	786	782	784	788	784	222
175°	804	800	801	805	799	76
180°	802	802	802	802	802	

TEST NUMBER: P913057

CATALOG NUMBER: DFN2DIP-4P2F0-020D030US927-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	654.8	654.8	654.8	654.8	654.8
2.5°	657.7	654.8	648.2	654.3	653.1
5°	654.8	651.9	644.1	649.5	647.7
7.5°	649.5	645.9	637.6	640.0	637.0
10°	642.4	638.2	626.4	624.6	621.1
12.5°	633.5	628.1	612.1	608.6	602.1
15°	622.8	616.2	596.1	584.9	579.0
17.5°	610.4	600.9	576.0	562.9	553.5
20°	596.1	584.2	554.7	539.9	526.8
22.5°	580.7	567.1	532.7	512.6	503.7
25°	565.4	546.4	507.2	483.0	474.0
27.5°	547.0	526.8	483.5	455.7	442.0
30°	527.4	504.9	457.5	427.3	411.2
32.5°	508.4	481.2	432.6	397.0	382.2
35°	487.1	456.9	404.8	367.4	354.3
37.5°	466.4	433.7	378.7	337.8	323.0
40°	444.4	408.9	351.4	309.3	293.9
42.5°	421.9	384.0	324.2	280.3	265.5
45°	398.2	358.5	296.4	254.2	240.0
47.5°	375.7	333.7	269.7	227.5	214.5
50°	350.9	308.8	243.6	202.6	190.3
52.5°	326.5	282.0	218.6	179.6	168.3
55°	302.8	256.6	192.6	157.1	145.8
57.5°	278.5	231.1	169.5	136.3	126.8
60°	253.7	206.2	145.2	115.0	105.5
62.5°	229.3	182.0	124.5	96.0	91.3
65°	204.5	156.5	103.1	83.0	81.2
67.5°	180.8	132.7	83.0	72.9	71.1
70°	155.8	109.6	68.7	62.8	60.4
72.5°	132.1	88.2	57.4	52.8	51.6
75°	109.0	67.5	47.4	43.3	42.7
77.5°	86.0	48.0	37.3	34.9	33.7
80°	64.6	34.4	28.4	26.1	26.1
82.5°	45.0	23.1	19.6	18.4	18.4
85°	25.4	13.0	11.2	11.2	11.2
87.5°	9.5	4.8	4.8	4.1	4.1
90°	0.6	7.0	11.6	14.6	15.6
92.5°	14.6	12.2	13.9	15.1	15.6
95°	37.7	18.5	22.6	25.6	25.0
97.5°	67.9	20.4	29.5	31.4	31.9
100°	102.7	23.2	33.1	37.7	38.9
102.5°	141.0	139.9	34.2	40.6	42.4
105°	176.4	193.8	35.4	41.7	44.1
107.5°	217.6	232.1	36.6	42.9	45.3
110°	257.1	269.3	101.6	43.6	45.9

TEST NUMBER: P913057

CATALOG NUMBER: DFN2DIP-4P2F0-020D030US927-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	294.3	304.7	294.8	44.7	46.4
115°	333.7	343.6	358.1	89.4	47.6
117.5°	368.0	379.5	389.4	306.4	154.4
120°	406.2	414.9	425.4	432.4	354.0
122.5°	438.7	448.1	459.7	463.1	463.7
125°	471.8	479.3	490.4	494.5	496.2
127.5°	502.0	510.1	518.9	524.7	525.2
130°	530.4	539.8	546.1	552.5	552.0
132.5°	559.4	567.0	573.4	578.6	578.1
135°	583.8	593.2	598.3	604.2	603.0
137.5°	609.3	616.3	622.2	628.0	626.2
140°	634.3	639.0	645.3	650.5	647.7
142.5°	655.3	659.3	666.9	671.5	668.6
145°	677.3	676.7	686.6	690.6	687.7
147.5°	696.4	694.7	704.6	707.4	705.1
150°	715.0	711.0	720.3	723.7	720.8
152.5°	730.6	726.0	734.7	738.2	734.2
155°	745.8	740.6	747.5	751.0	746.4
157.5°	758.0	753.4	758.6	762.6	758.0
160°	768.4	764.9	768.4	771.9	767.8
162.5°	777.7	774.2	777.1	781.2	775.9
165°	785.8	782.4	784.1	788.1	784.1
167.5°	792.2	788.7	790.4	794.6	789.3
170°	797.4	793.9	795.1	799.2	793.9
172.5°	800.9	797.4	798.6	802.6	797.4
175°	803.7	799.7	800.9	804.9	799.2
177.5°	804.9	800.9	801.5	805.6	800.3
180°	802.1	802.1	802.1	802.1	802.1

TEST NUMBER: P913057

CATALOG NUMBER: DFN2DIP-4P2F0-020D030US927-RLONL

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	7.32	8.05	8.39	9.11	10.57	3.28	4.01	4.35	5.08	6.53
	3H	8.96	9.62	10.04	10.69	12.17	4.44	5.09	5.52	6.17	7.64
	4H	9.55	10.17	10.64	11.25	12.73	4.87	5.49	5.96	6.57	8.05
	6H	9.95	10.52	11.05	11.60	13.09	5.16	5.73	6.26	6.82	8.31
	8H	10.06	10.60	11.17	11.70	13.19	5.24	5.78	6.35	6.88	8.37
	12H	10.11	10.63	11.22	11.72	13.22	5.27	5.79	6.38	6.88	8.39
4H	2H	7.32	7.93	8.41	9.01	10.49	3.85	4.47	4.95	5.54	7.02
	3H	9.11	9.62	10.21	10.73	12.22	5.16	5.68	6.27	6.78	8.28
	4H	9.78	10.25	10.89	11.35	12.86	5.69	6.16	6.80	7.26	8.77
	6H	10.27	10.67	11.38	11.79	13.30	6.08	6.49	7.20	7.60	9.11
	8H	10.43	10.81	11.54	11.92	13.44	6.20	6.57	7.31	7.69	9.21
	12H	10.51	10.85	11.64	11.97	13.50	6.24	6.59	7.38	7.71	9.24
8H	4H	9.73	10.11	10.85	11.22	12.74	5.95	6.33	7.07	7.44	8.96
	6H	10.27	10.58	11.41	11.74	13.25	6.44	6.75	7.57	7.90	9.42
	8H	10.47	10.74	11.62	11.88	13.42	6.61	6.88	7.75	8.02	9.55
	12H	10.59	10.83	11.74	11.96	13.53	6.71	6.95	7.85	8.08	9.65
12H	4H	9.68	10.02	10.81	11.15	12.67	5.95	6.29	7.08	7.41	8.94
	6H	10.25	10.52	11.39	11.65	13.19	6.48	6.75	7.62	7.88	9.42
	8H	10.44	10.68	11.59	11.81	13.39	6.67	6.91	7.81	8.04	9.61