

Test report from ZYYX Labs AB

Acoustic noise tests for ZYYX Pro II 3D printing system 1.

Performed 2021-02-12 – 2021-02-15 by Tomas Bengtsson

1.1. Measuring site

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1.2. Purpose of test

To verify that the ZYYX Pro II system as designed fulfils the acoustic noise given in the accompanying documents.

1.3. **Test objects**

- 1. ZYYX Pro II system, s/n: ZP2-2103001
- Sound level meter. Smart Sensor AS824 s/n: 03359367
- 3. Backup sound level meter, s/n: DX3D3KDMN737

1.4. **Test configurations**

- 1. Off (background)
- 2. On. idle
- 3. On, printing

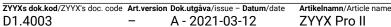
1.5. Test set-up and procedure

For all tests:

- The EUT was operated according to the manual in a typical office environment.
- The temperature: approx. 22 °C, humidity: approx. 90 %, barometric pressure 100.9 kPa
- Each test had a duration of 2 minutes.
- The sound level meter was placed 1 m from the printer, which is a typical minimum distance when used at the user's desk.

Filnamn/file name Tester SB, TB

Produkttest / Product Test Protocol



Art.kod/Art. code A1.0008



1.6. Performance requirements

The acoustic noise level for the 2 minute test duration was recorded and the mean value documented.

1.7. Test results

EUT off (background): 29.5 dB(A)
 EUT on, idle: 31.7 dB(A)
 EUT on, chamber heating: 33.9 dB(A)
 EUT on, printing, front: 38.2 dB(A)
 EUT on, printing, side: 36.8 dB(A)
 EUT on, printing, back: 37.6 dB(A)

1.8. Test analysis

The noise level of the ZYYX Pro II printer is well suited for office use, below typical office noise levels.

See reference table below.

Levels (dB)	Source Subjective Response			
Safe Range*				
0	No sound Hearing threshold			
10	Rustle of leaf Faint			
20	Buzzing Insect			
30	Quiet Whisper			
40	Quiet Office			
50	Window Air Conditioner Moderate			
60	Conversation			
70	Freight train			
80	Computer print room			
Risk Range*				
90	Heavy vehicle Limit of exposure for 8 hrs			
100	Subway station			
110	Rock drill			
Harmful Range*				
120	Propeller plane Pain threshold			
130	Riveting hammer	eting hammer Feeling threshold		
140	Jet engine at 30m Danger			
120 130	Riveting hammer Jet engine at 30m	Feeling threshold		

^{*} for average populations

 $Table\ from\ CANADA\ SAFETY\ COUNCIL,\ \underline{https://canadasafetycouncil.org/workplace-safety/office-noise-and-acoustics}$

Document history

Issue	Date	Done by	Change
Α	2021-03-12	ТВ	First issue of document.

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