be quiet!

be quiet! Pure Rock Pro 3

Lab ID BQCLR00088

Type Air

Testing Date: Mar 28, 2025

Scheme: THETA

AMD AM5



No THETA level Intel LGA1851



Aristeidis Bitziopoulos, Certification Body General Manager

THETA Cooler Performance

THETA is a Cybenetics performance rating. It is not part of our ISO/IEC 17065 certification schemes and is outside our accreditation.

Overall Performance (OP) = W × F / T, where W is the average CPU power at the EPS connectors (W), F the average CPU frequency (MHz) and T the average CPU temperature (°C). A cooler is rated on its measured OP at 30 dB(A) normalized noise output; a cooler that cannot reach 30 dB(A) is rated on its own measured 25 dB(A) point. Air and AIO coolers have separate ladders on each test platform.

Evaluated before Revision 2.0 of the Cooling Solutions Test Protocol: the THETA level was assigned from the published results measured under Revision 1.8 (20 minutes per noise level, 10-minute cool-down). The cooler was not measured again, and the earlier procedure is not identical to the procedure of Revision 2.0.

Platform	THETA level	Test CPU	Mount	Rated at	Overall Performance (OP)
AMD AM5	**THETA Silver · Air · AMD AM5**	AMD Ryzen 9 7900X (AM5)	Default	30 dB(A)	9,812
Intel LGA1851	**No THETA level**	Intel Core Ultra 9 285K (LGA1851)	Default	-	-

General Information

Test Equipment

Noise Test Environment	Hemi Anechoic Chamber with 6dB(A) noise floor
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Temperature Logger	Picoscope TC-08
Climate Chamber	Giant Force GTH-800-20-CP-AR
Testing Methodology	Cybenetics Cooling Solutions Test Protocol

DUT Information

Brand	be quiet!
Model	Pure Rock Pro 3
Lab ID	BQCLR00088
Testing Date	Mar 28, 2025
Engineer	Aris Bitziopoulos

Climate Chamber

Noise Test Environment	Hemi Anechoic Chamber with 6dB(A) noise floor
Manufacturer	Giant Force
Model Number	GTH-800-20-CP-AR
Temperature Range	-20℃ ~ +100℃
Humidity Range	20% ~ 98% RH
Temperature/Humidity Constancy	±0.2℃; ±2.5%RH
Temperature/Humidity Uniformity at center	±0.5℃; ±4%RH
Internal Dimensions (WHD)	100 x 100 x 80 cm

External Dimensions (WHD)	145 x 190 x 135 cm
Net Weight (approximately)	450 Kg
Heat-up Time (No load, no linear)	(from 20°C to +100°C) 30min
Pull-down Time (No load, no linear)	(from 20°C to -20°C) 50min
Cooling System	Airtight compressor + evaporator fins + air-cooling condenser
Power Source	3Φ AC 380V ±5%, 50Hz±1% 10KW
Based on Standards	ISO 5801-2007, AMCA 210-0, ASHRAE 51-2007, IEC 61591-2005, GB/T 1236-200

AMD Test System

Mainboard	Asus TUF GAMING X670E-PLUS
CPU	AMD Ryzen 9 7900x
GPU	Embedded
NVMe	XPG GAMMIX S50 Lite 1TB
RAM	XPG Lancer DDR5 (2 x 16GB) 6000MHz
Power Supply	Seasonic Vertex 1200W (Cybenetics Platinum)
CPU Cooler	Device Under Test
Case	Cooler Master Test Bench

Technical Specifications

Manufacturer (OEM)	be quiet!
Model	Pure Rock Pro 3
Number of Fans	2
Fan #1	be quiet! Pure Wings 3 120mm High-Speed
Fan #2	be quiet! Pure Wings 3 140mm High-Speed
Type	Air
Heatpipes	6
Heatpipe Diameter	6mm
Length	114mm
Width	124mm
Height	155mm
Block Material	Aluminium

Weight	1077g
AMD Processors Support	AM5, AM4
Intel Processors Support	LGA1851,1700,1200,1150,1151,1155

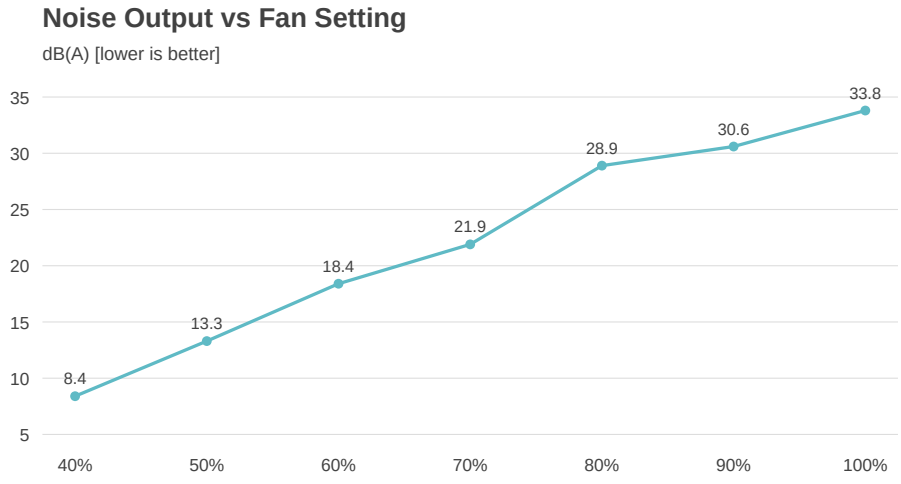
Noise Output and Fan Speed

Table

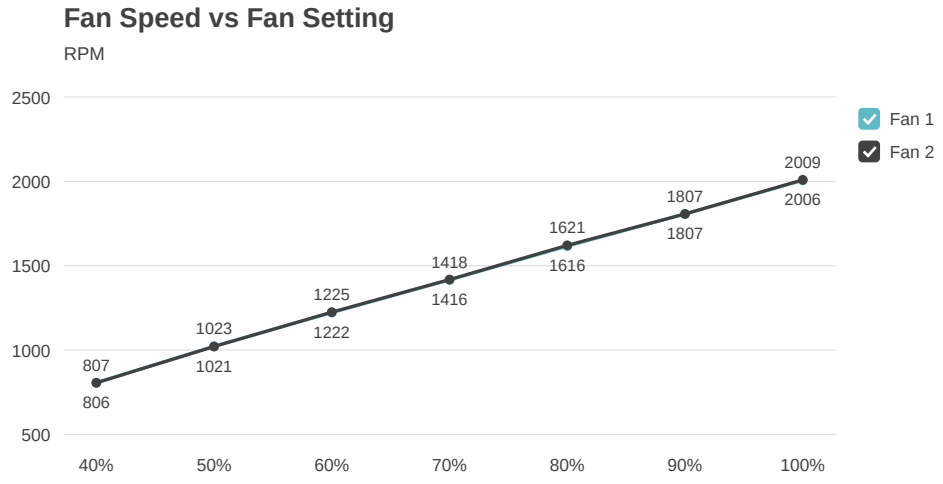
Fan Setting	Noise (dB(A))	Fan 1 (RPM)	Fan 2 (RPM)
40%	8.4	807	806
50%	13.3	1023	1021
60%	18.4	1222	1225
70%	21.9	1416	1418
80%	28.9	1616	1621
90%	30.6	1807	1807
100%	33.8	2006	2009

Graphs

Noise



Fan Speed



Fan Speed at Fixed Noise Levels

Noise Level	Fan 1 (RPM)
15 dB(A)	1085
20 dB(A)	1275
25 dB(A)	1490
30 dB(A)	1790

AMD System Test Results

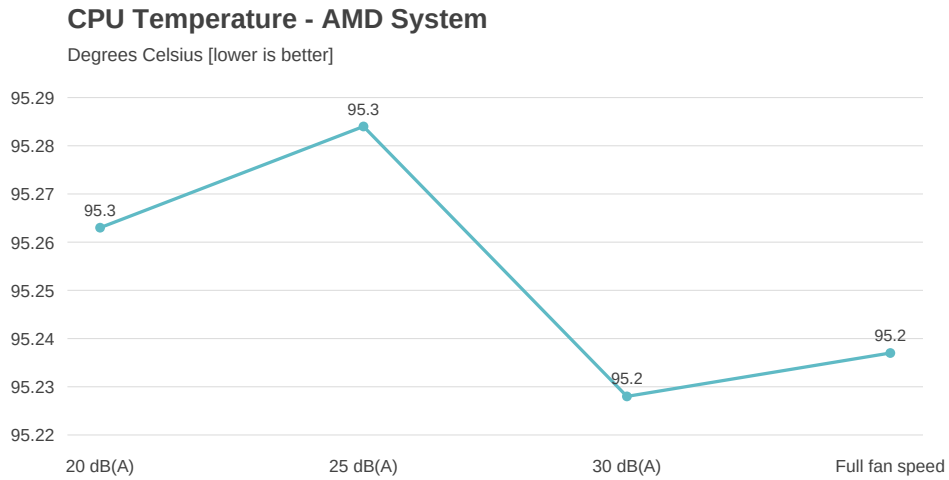
Table

Condition	CPU Temperature (°C)	CPU Frequency (MHz)	CPU Power (W)	Overall Performance
20 dB(A)	95.3	5085	175.2	9350

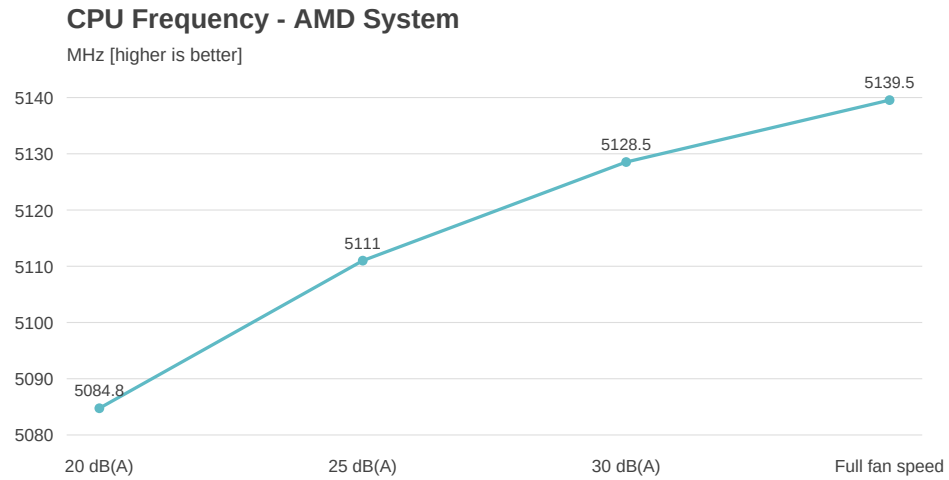
Condition	CPU Temperature (°C)	CPU Frequency (MHz)	CPU Power (W)	Overall Performance
25 dB(A)	95.3	5111	178.7	9588
30 dB(A)	95.2	5129	182.2	9812
Full fan speed	95.2	5140	184.5	9955

Graphs

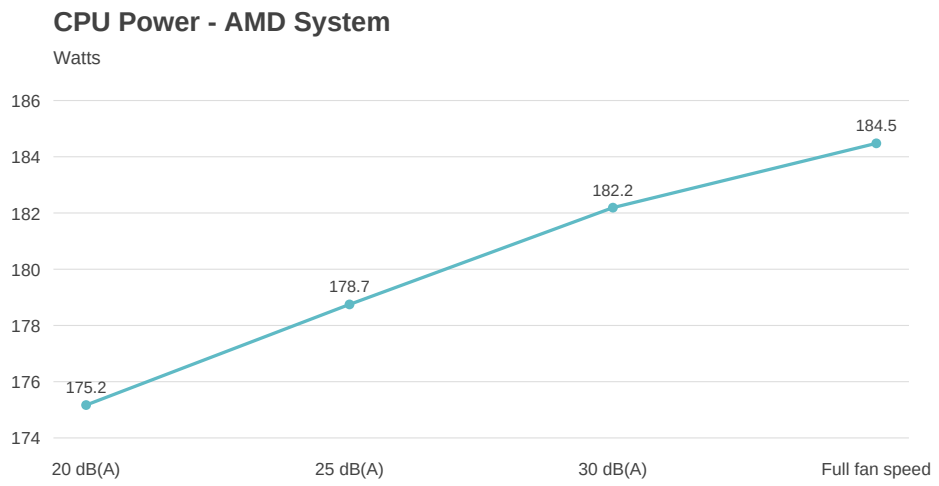
CPU Temperature



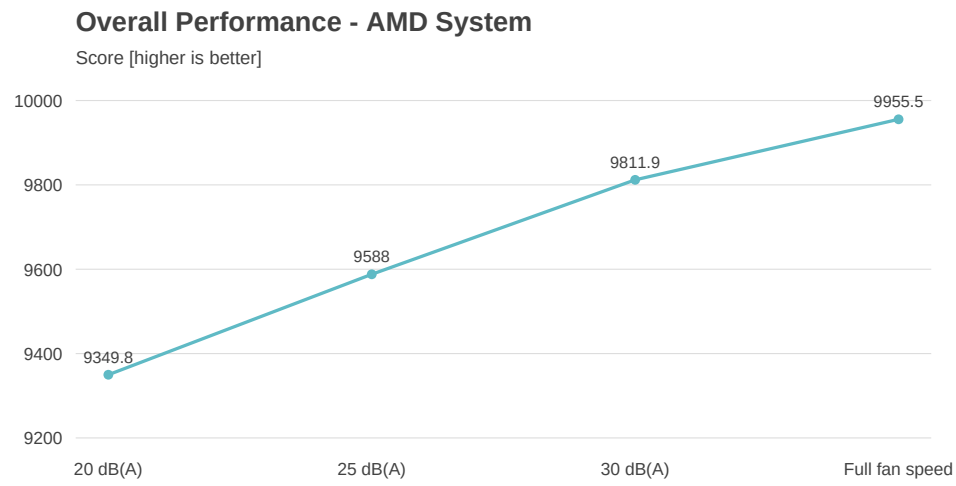
CPU Frequency



CPU Power

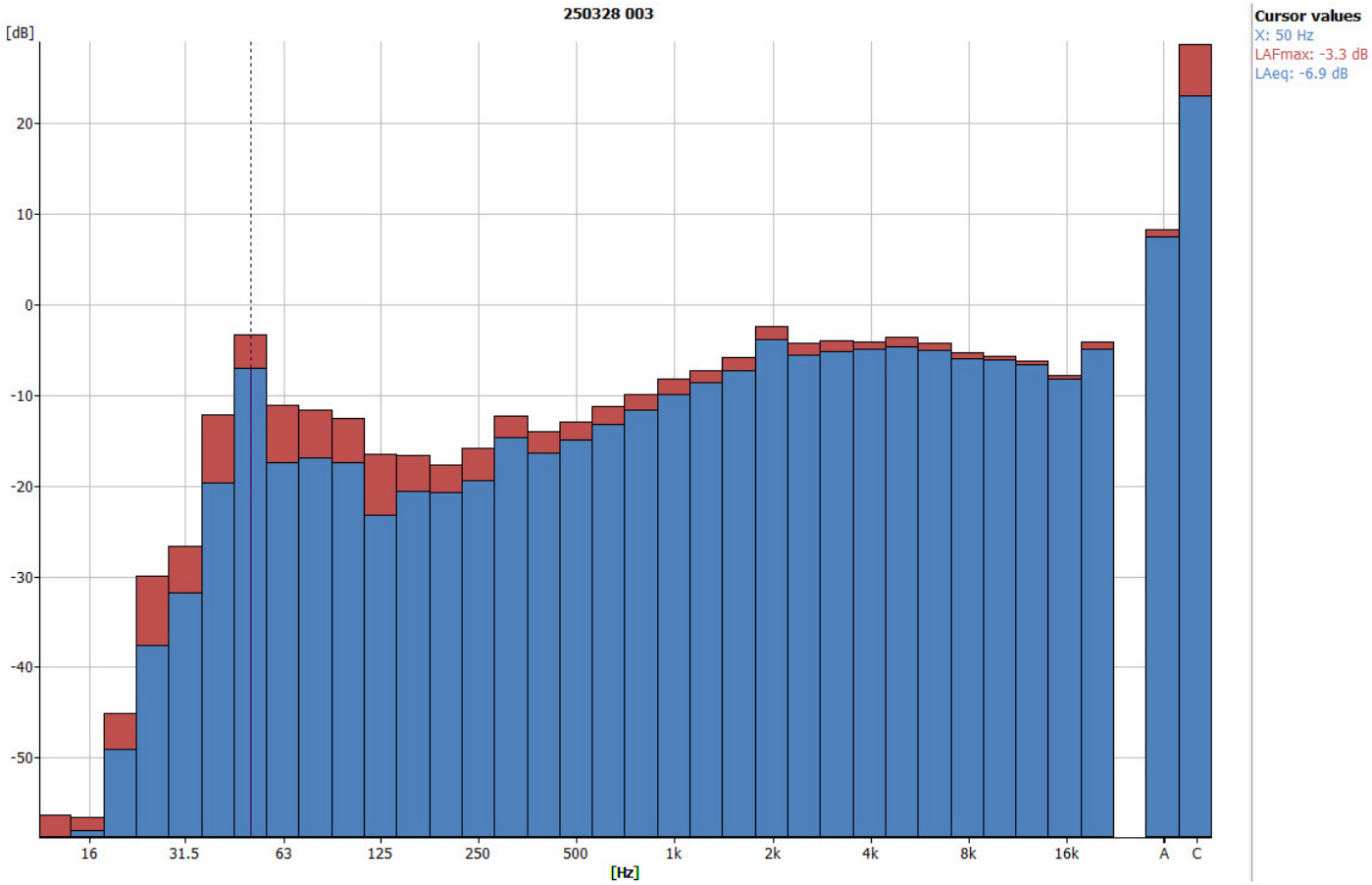


Overall Performance

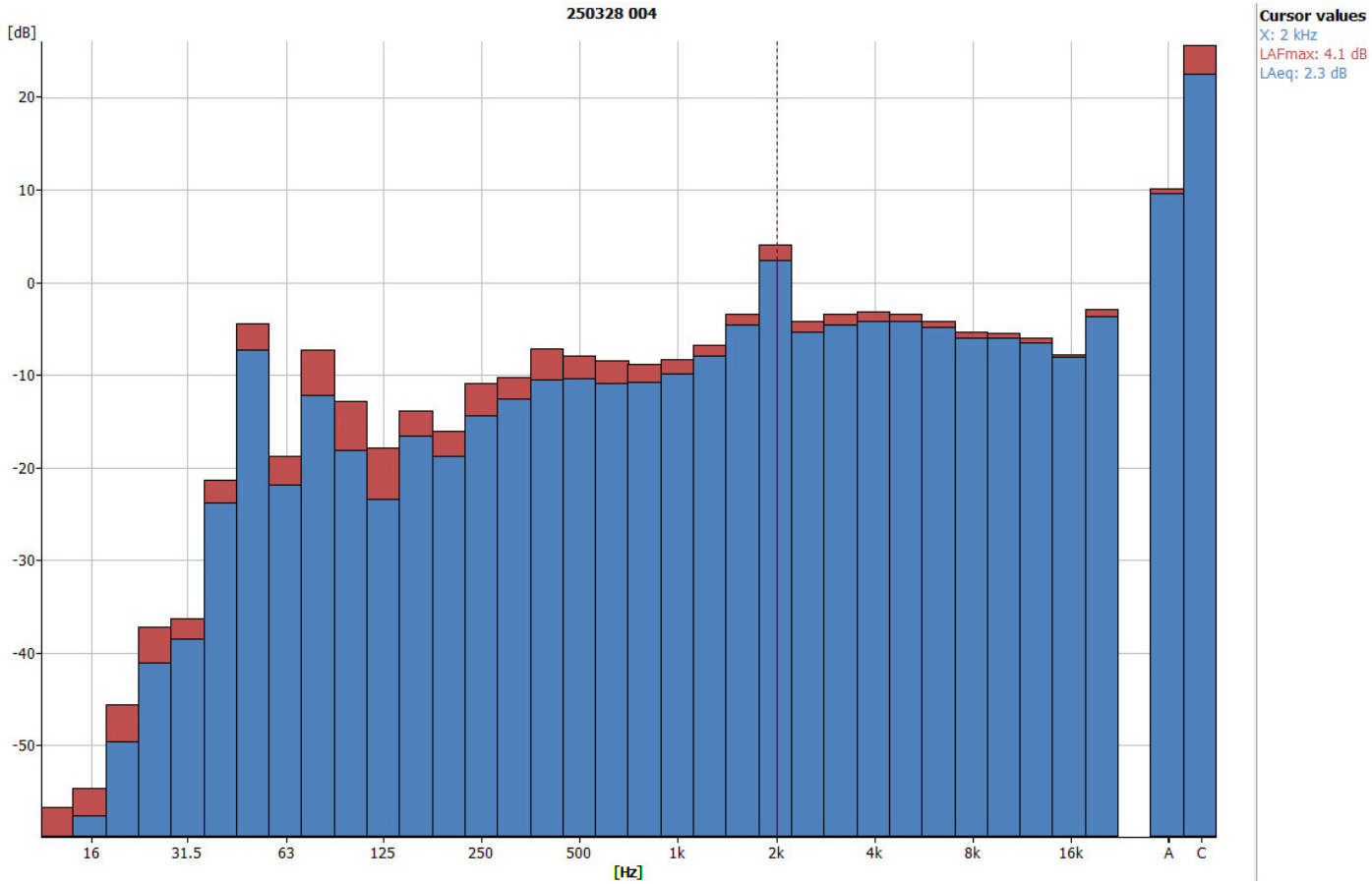


Frequency Plots

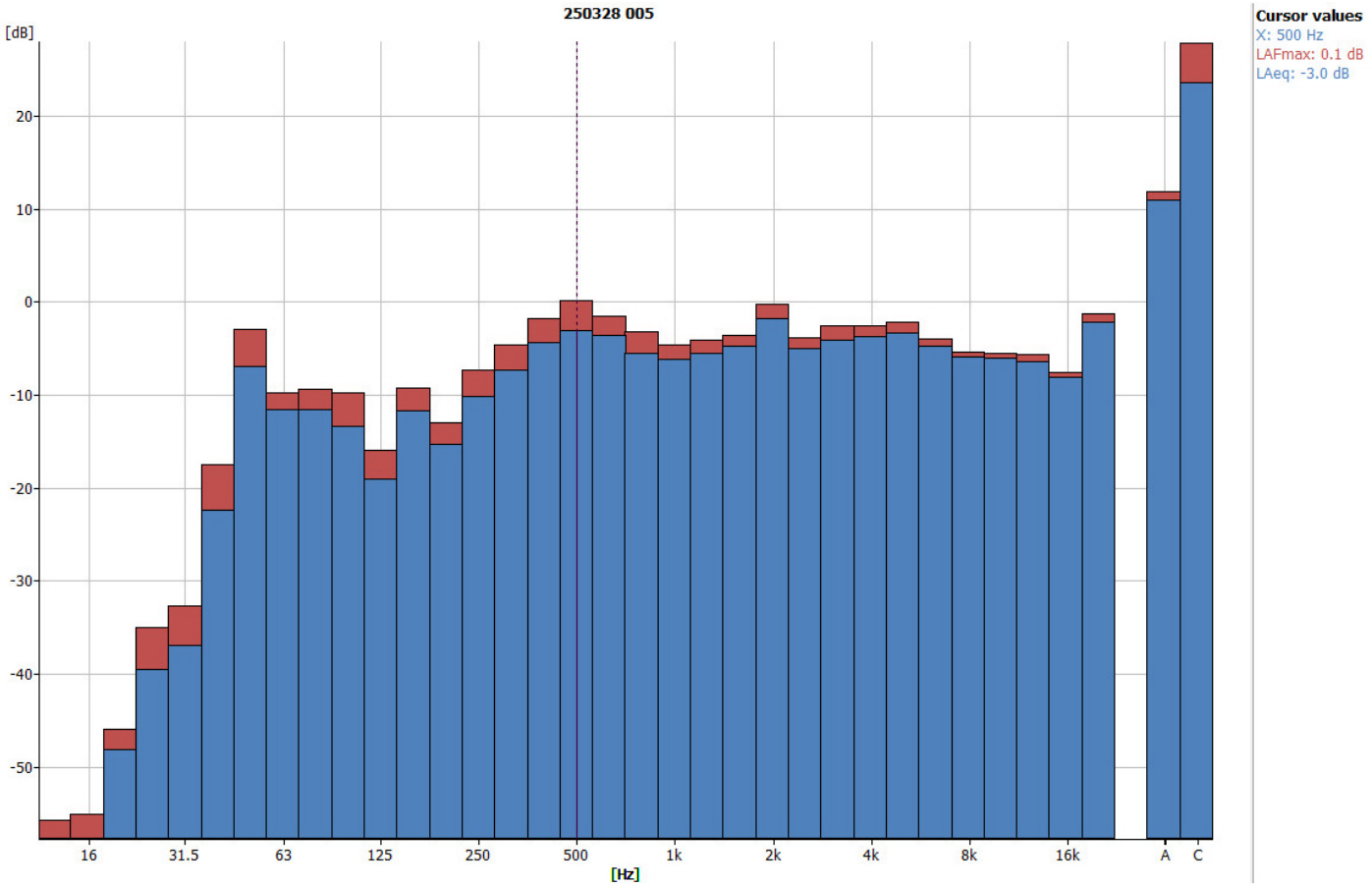
PWM 20%



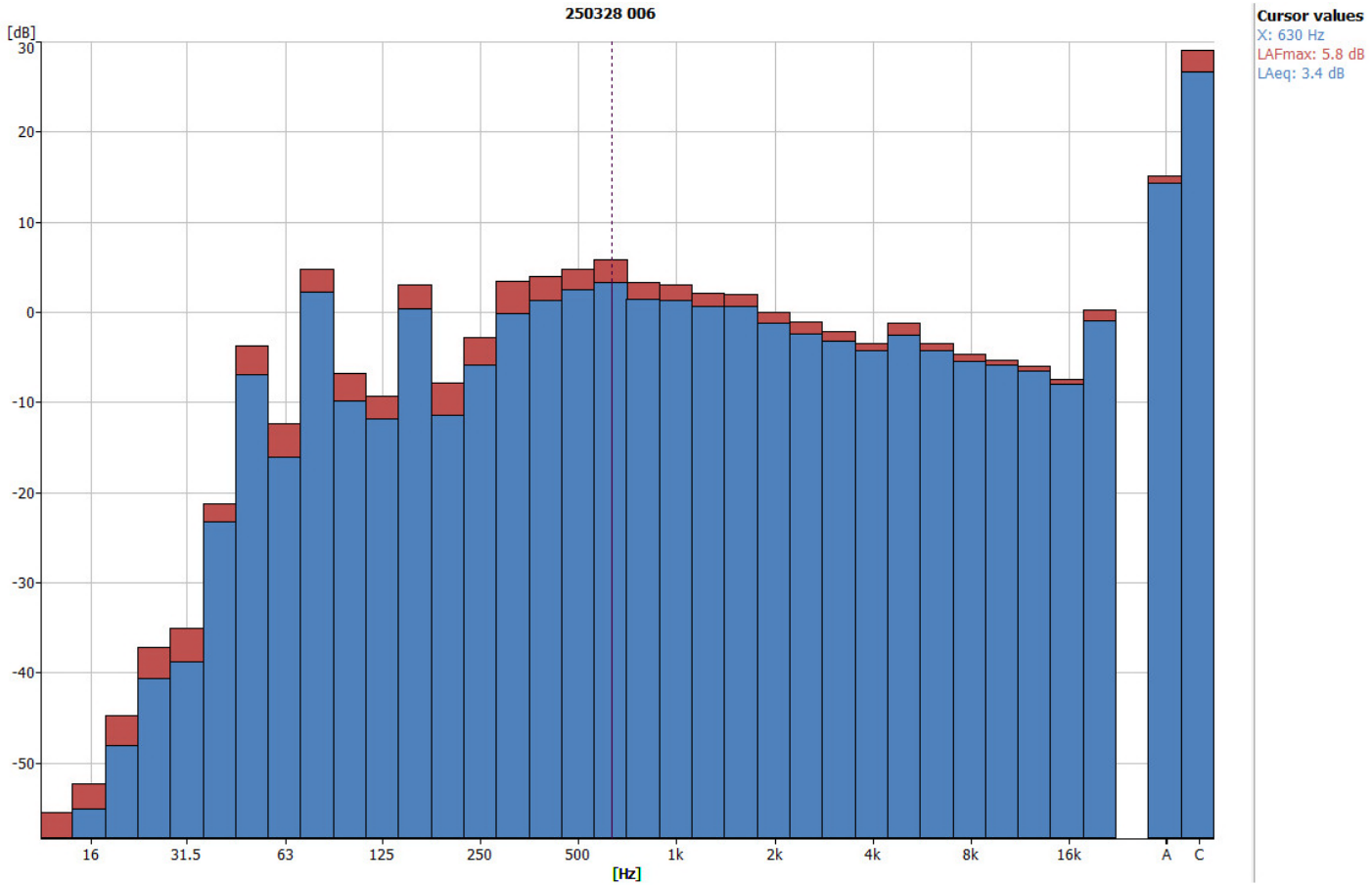
PWM 30%


250328 004
[dB]
20
10
0
-10
-20
-30
-40
-50
16
31.5
63
125
250
500
1k
2k
4k
8k
16k
A
C
[Hz]
Cursor values
X: 2 kHz
LAFmax: 4.1 dB
LAeq: 2.3 dB

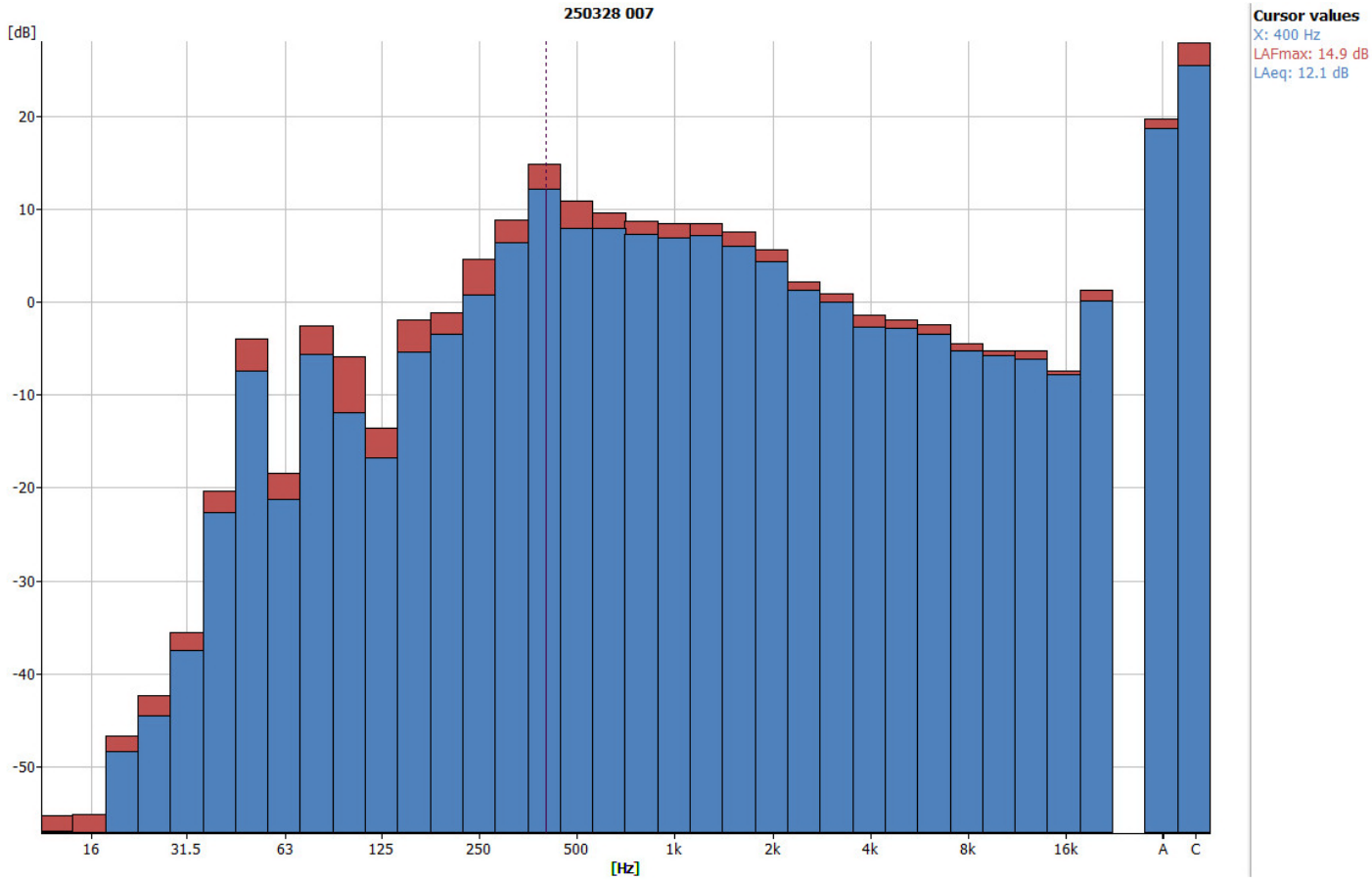
PWM 40%


250328 005
[dB]
20
10
0
-10
-20
-30
-40
-50
16
31.5
63
125
250
500
1k
2k
4k
8k
16k
A
C
[Hz]
Cursor values
X: 500 Hz
LAFmax: 0.1 dB
LAeq: -3.0 dB

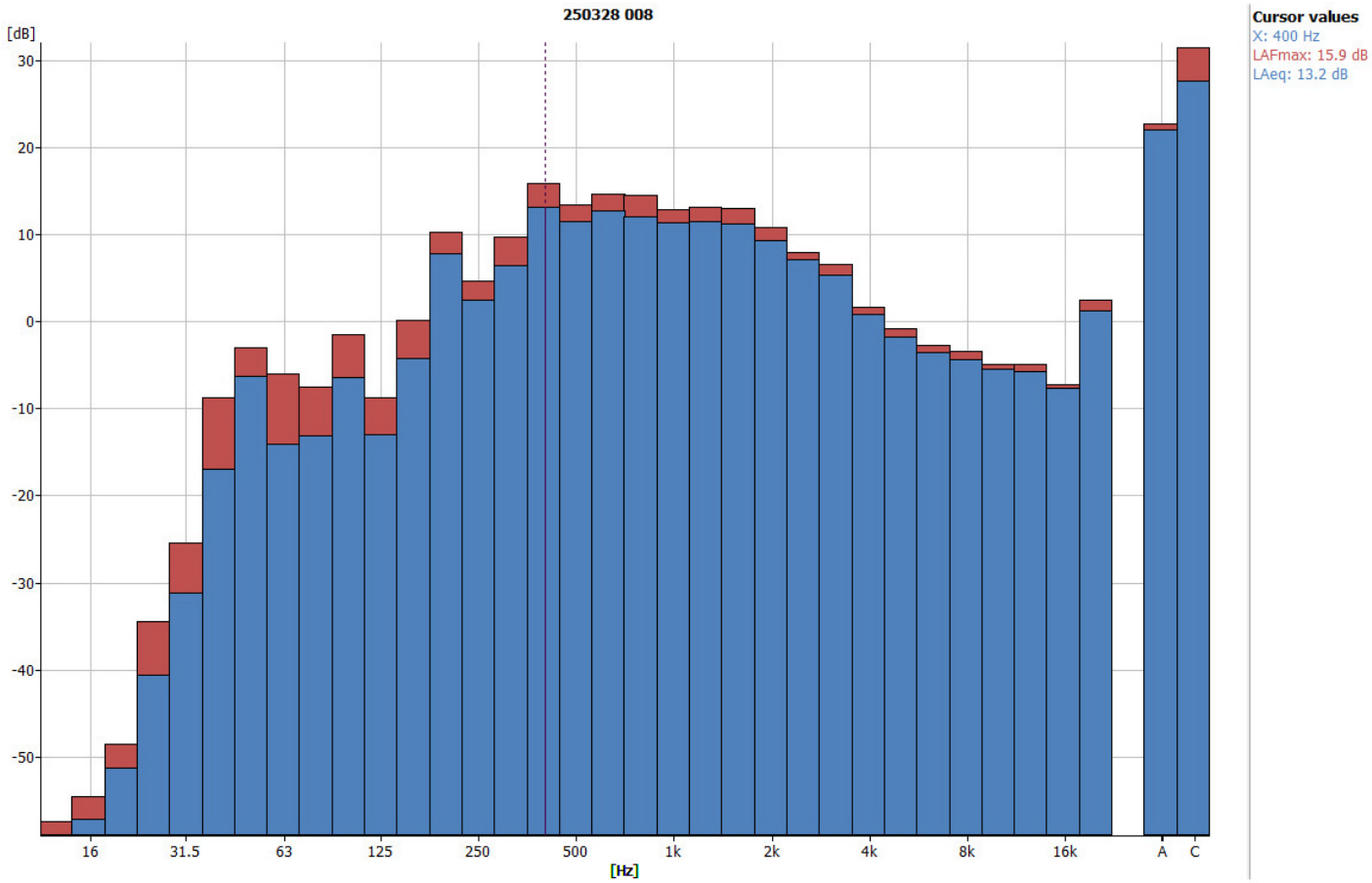
PWM 50%


250328 006
[dB]
30
20
10
0
-10
-20
-30
-40
-50
16
31.5
63
125
250
500
1k
2k
4k
8k
16k
A
C
[Hz]
Cursor values
X: 630 Hz
LAFmax: 5.8 dB
LAeq: 3.4 dB

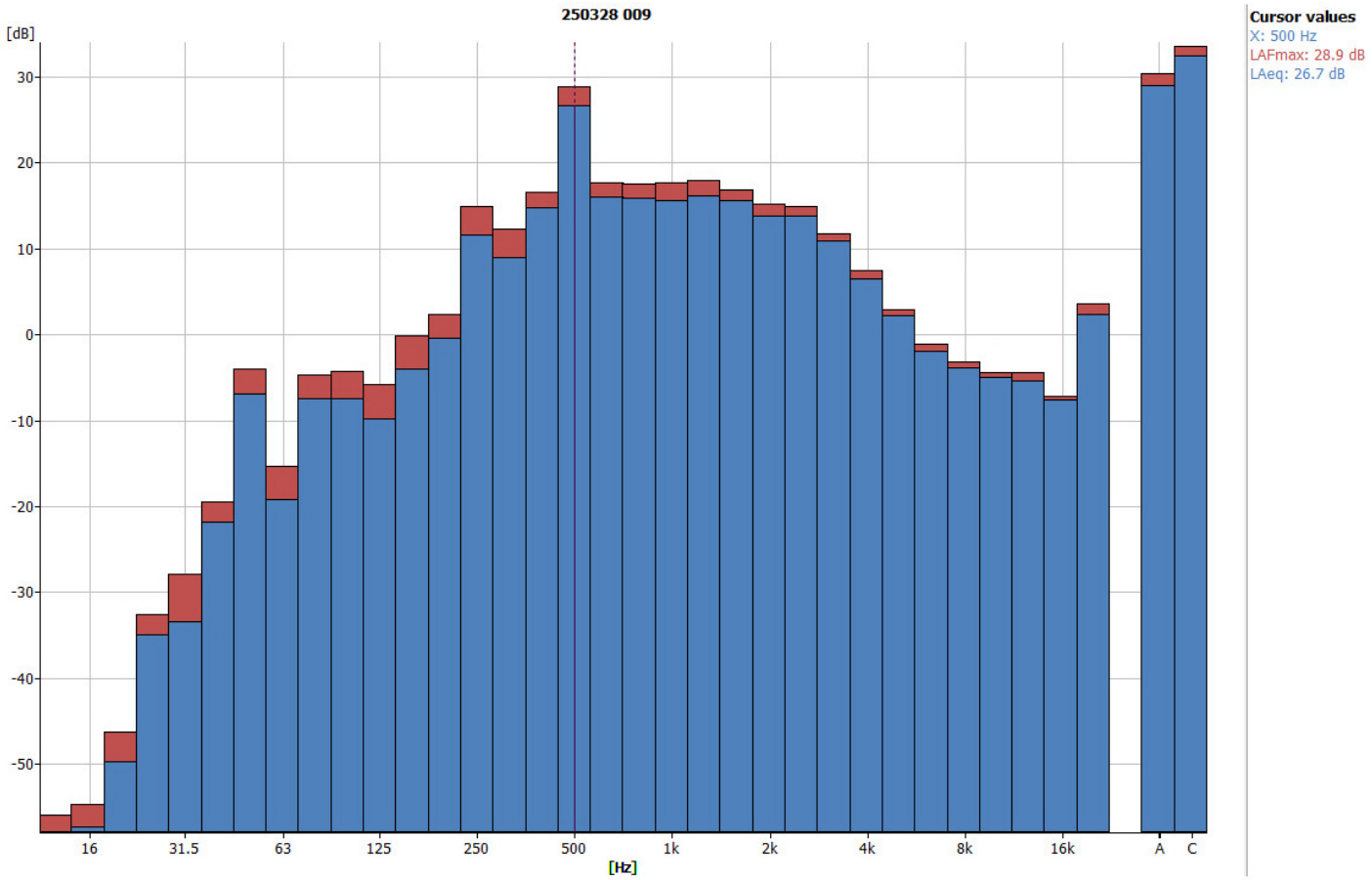
PWM 60%


250328 007
[dB]
20
10
0
-10
-20
-30
-40
-50
16
31.5
63
125
250
500
1k
2k
4k
8k
16k
A
C
[Hz]
Cursor values
X: 400 Hz
LAFmax: 14.9 dB
LAeq: 12.1 dB

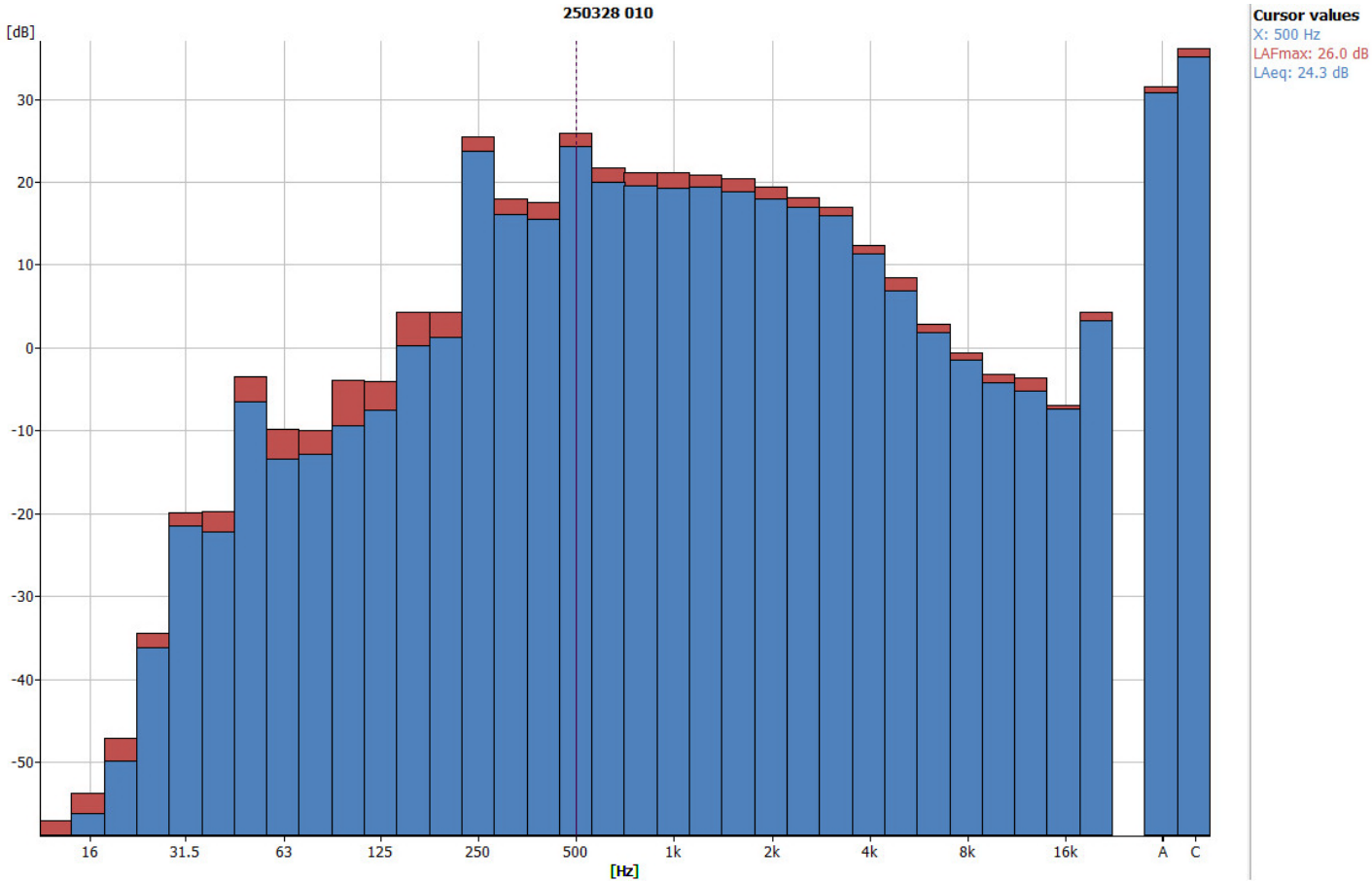
PWM 70%


250328 008
[dB]
30
20
10
0
-10
-20
-30
-40
-50
16
31.5
63
125
250
500
1k
2k
4k
8k
16k
A
C
[Hz]
Cursor values
X: 400 Hz
LAFmax: 15.9 dB
LAeq: 13.2 dB

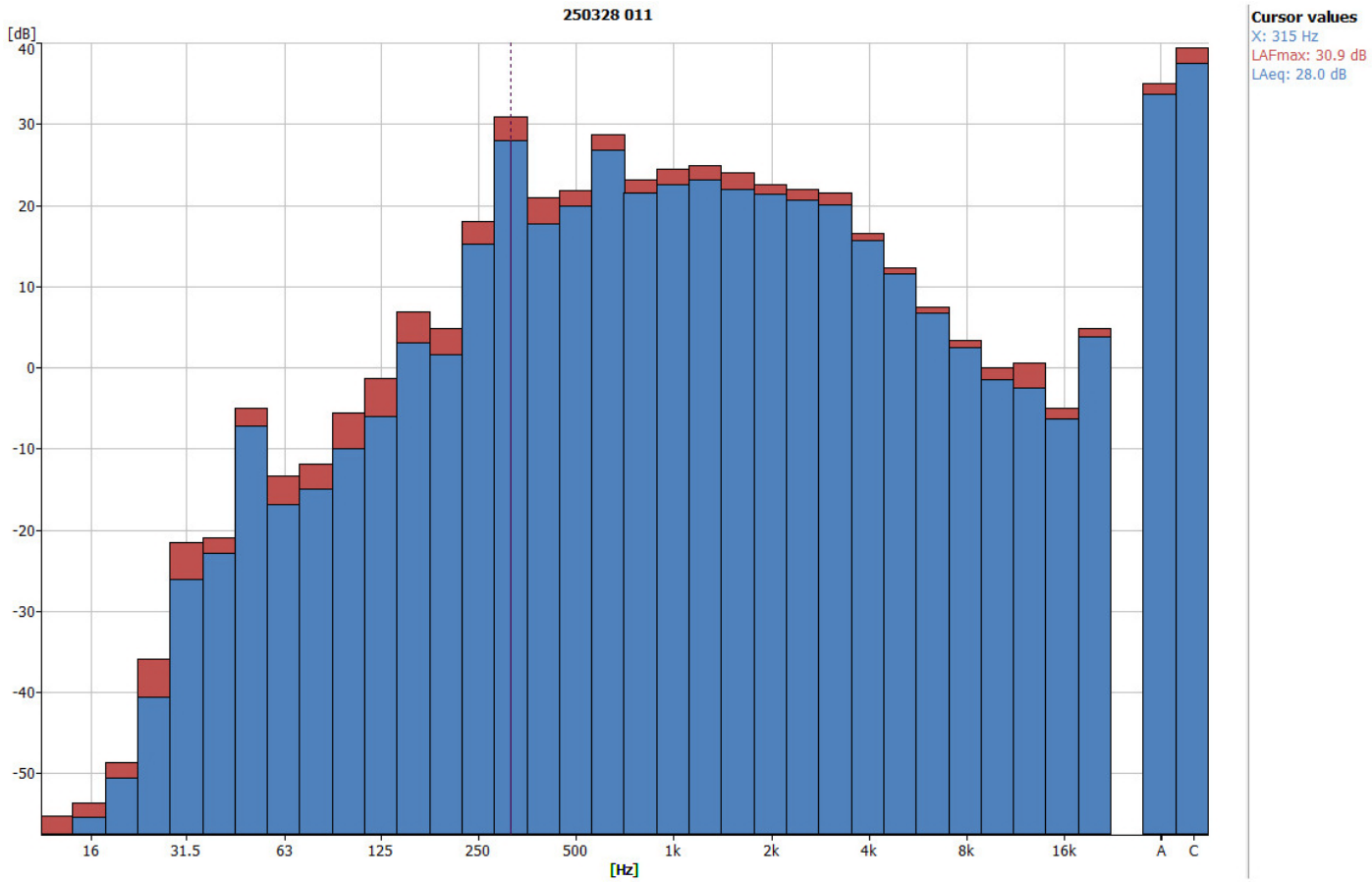
PWM 80%


250328 009
[dB]
30
20
10
0
-10
-20
-30
-40
-50
16
31.5
63
125
250
500
1k
2k
4k
8k
16k
A
C
[Hz]
Cursor values
X: 500 Hz
LAFmax: 28.9 dB
LAeq: 26.7 dB

PWM 90%


250328 010
[dB]
30
20
10
0
-10
-20
-30
-40
-50
16
31.5
63
125
250
500
1k
2k
4k
8k
16k
A
C
[Hz]
Cursor values
X: 500 Hz
LAFmax: 26.0 dB
LAeq: 24.3 dB

PWM 100%


250328 011
[dB]
40
30
20
10
0
-10
-20
-30
-40
-50
16
31.5
63
125
250
500
1k
2k
4k
8k
16k
A
C
[Hz]
Cursor values
X: 315 Hz
LAFmax: 30.9 dB
LAeq: 28.0 dB

be quiet! Pure Rock Pro 3

