SOUTH QUALITY

PROFICIENCY TESTING PROVIDER

REPORT No 11682

Date of issue: *May 22, 2026*

Status: FINAL REPORT

****

IEC 60068-2-6

ENVIRONMENTAL TESTING

TEST Fc: VIBRATION SINUSOIDAL

Program: SQO-EV6 (Round 9)

****

Prepared by:	Reviewed by:	Approved by:
cn=BERENICE C. FERREL, o=PT SOUTH QUALITY SAS, ou=SOUTH QUALITY, email=tech@ptsouthquality.com, c=AR 2026.05.22 10:26:57 -03'00'	cn=ESTHER CASAS, o=PT SOUTH QUALITY SAS, ou=SOUTH QUALITY, email=ecasas@ptsouthquality.com, c=AR 2026.05.22 16:14:21 -03'00'	cn=Emiliano Medina, o=SOUTH QUALITY, ou=PT SOUTH QUALITY SAS, email=quality@ptsouthquality.com, c=ES 2026.05.23 09:09:06 -03'00'
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1. FOREWORD

This report summarizes the results of the **SQO-EV6 (Round 9)** proficiency testing program on the adequacy of specimens to resist specified severities of sinusoidal vibration. This program is carried out under a simultaneous participation format, as described in clause A.2.2 of ISO/IEC 17043: 2023 (Types of PT schemes).

South Quality conducted the testing program in March/April 2026 with the aim of assessing the laboratory's ability to competently perform the designated tests.

2. ORGANIZATION

Program Coordinator:	Lic. Esther Casas
Assistant Technician:	Berenice Ferrel
Statistics:	Lic. Manuel Tozaki
Supervision:	Eng. Emiliano Medina

3. OBJECTIVE

The objective of this proficiency testing program is to visually and functionally inspect the equipment under test, using the following standard:

Standard
IEC 60068-2-6: 2007

To verify this, electronic equipment has been selected.

Participants in this program have not been previously informed about the expected behavior of the samples they receive.

As part of the usual practice of this program, three different sample combinations may be sent to participants.

i. Sample A (PASS) + Sample B (PASS).
ii. Sample A (PASS) + Sample B (FAIL).
iii. Sample A (FAIL) + Sample B (FAIL).

4. PARTICIPANTS

In the present round, 23 laboratories have participated with the following details:

CODE	Country	ISO 17025 accredited	Results delivered
01	Australia	Yes	Yes
02	Malaysia	Yes	Yes
03	Netherlands	Yes	Yes
04	France	Yes	Yes
05	Portugal	Yes	No
06	Argentina	No	Yes
07	France	Yes	Yes
08	Spain	Yes	Yes
09	Peru	No	No
10	Bangladesh	Yes	Yes
11	Chile	Yes	Yes
12	Germany	Yes	Yes
13	Spain	Yes	No
14	South Africa	No	Yes
15	Türkiye	Yes	Yes
16	Germany	Yes	Yes
17	Thailand	Yes	Yes
18	Belgium	Yes	Yes
19	Italy	Yes	Yes
20	China	Yes	No
21	Brazil	No	Yes
22	Mexico	Yes	Yes
23	Finland	Yes	Yes

5. HOMOGENEITY

A homogeneity study was conducted to verify the compliance of the samples with the requirements of the IEC 60068-2-6 standard, using an ISO 17025-accredited laboratory.

Six batches, each consisting of 35 units of different electronic equipment, were prepared and tested to assess the result homogeneity.

The control process followed ISO 33405: 2024, clauses 7.4.1.1 / 7.4.1.2. Stratified random sampling was applied, and the samples were selected using random-number-generation software.

The results of this test are presented below:

Size of each batch: **35 units**
Tested samples from each batch: **8 units**
Test conditions: **10-500Hz, 10m/s^2, 1 oct/min, 3 axes, 15 min/axis**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE SAMPLES ANALYZED		
	BATCH: LEV3018	BATCH: LEV3019	BATCH: LEV3020
Visual inspection	YES	YES	YES
Functional performance	NO	YES	YES

Size of each batch: **35 units**
Tested samples from each batch: **8 units**
Test conditions: **10-500Hz, 10m/s^2, 1 oct/min, 3 axes, 15 min/axis**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE SAMPLES ANALYZED		
	BATCH: LEV3468	BATCH: LEV3469	BATCH: LEV3470
Visual inspection	YES	YES	YES
Functional performance	YES	NO	YES

Samples for this program are taken from the selected batches identified as **LEV3020**, and **LEV3468**.

The analysis of the test data indicated that the selected samples exhibited sufficient homogeneity for the program. Therefore, the results of participants identified as outliers cannot be attributed to sample variability.

6. SAMPLE INFORMATION

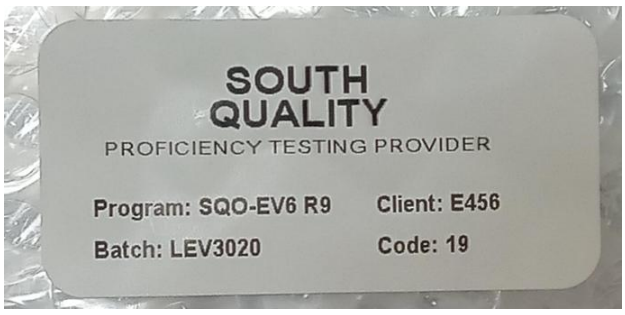
The following samples were sent for testing (Participant **Code 19**):

Batch:	LEV3020
Sample ID:	19
Characteristics:	Switching power supply In: 110/220V; 50/60Hz; Class 1 - Out: 12Vcc; 5A; 60W Trademark: SIMALED Model: 12V-5A(S)-60W

Batch:	LEV3468
Sample ID:	19
Characteristics:	ATX power supply 220V - 50Hz - 600W Trademark: ACONCAWA Model: ATX 600 X 24 P 2S

7. IMAGES

SAMPLES



SAMPLES

8. ASSIGNED RESULTS

The assigned results are obtained from the results reported by all participants (**Consensus values**).

9. STATISTICS

The results must be treated as qualitative.

For qualitative results, the comparison will be made directly against the assigned results, so any difference will be evaluated as **Unsatisfactory**.

The assessment involves assigning a compliance verdict (PASS or FAIL) to each verification parameter (Visual and functional performance) carried out by each participant.

10. PARTICIPANTS' RESULTS

LABORATORY CODE	LEV3020		LEV3468	
	Visual inspection	Functional performance	Visual inspection	Functional performance
01	PASS	PASS	PASS	PASS
02	PASS	PASS	PASS	FAIL
03	PASS	PASS	PASS	PASS
04	PASS	PASS	PASS	PASS
06	PASS	PASS	PASS	FAIL
07	PASS	PASS	PASS	PASS
08	PASS	PASS	PASS	PASS
10	PASS	PASS	PASS	PASS
11	PASS	PASS	PASS	FAIL
12	PASS	PASS	PASS	PASS
14	PASS	PASS	PASS	FAIL
15	PASS	PASS	PASS	PASS
16	PASS	PASS	PASS	PASS
17	PASS	PASS	PASS	PASS
18	PASS	PASS	PASS	PASS
19	PASS	PASS	PASS	PASS
21	PASS	PASS	PASS	PASS
22	PASS	PASS	PASS	PASS
23	PASS	PASS	PASS	PASS

ASSIGNED RESULTS			
LEV3020		LEV3468	
Visual inspection	Functional performance	Visual inspection	Functional performance
PASS	**PASS**	**PASS**	**PASS**

11. EVALUATION OF PERFORMANCE

Laboratory **Code 01**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 02**: The laboratory obtained **UNSATISFACTORY** result in the functional performance verification of sample **LEV3468**. However, **SATISFACTORY** results were obtained for the remaining parameters.

Laboratory **Code 03**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 04**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 05**: The laboratory did not send the results before the deadline.

Laboratory **Code 06**: The laboratory obtained **UNSATISFACTORY** result in the functional performance verification of sample **LEV3468**. However, **SATISFACTORY** results were obtained for the remaining parameters.

Laboratory **Code 07**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 08**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 09**: The laboratory did not send the results before the deadline.

Laboratory **Code 10**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 11**: The laboratory obtained **UNSATISFACTORY** result in the functional performance verification of sample **LEV3468**. However, **SATISFACTORY** results were obtained for the remaining parameters.

Laboratory **Code 12**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 13**: The laboratory did not send the results before the deadline.

Laboratory **Code 14**: The laboratory obtained **UNSATISFACTORY** result in the functional performance verification of sample **LEV3468**. However, **SATISFACTORY** results were obtained for the remaining parameters.

Laboratory **Code 15**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 16**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 17**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 18**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 19**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 20**: The laboratory did not send the results before the deadline.

Laboratory **Code 21**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 22**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

Laboratory **Code 23**: The laboratory obtained **SATISFACTORY** results in the verification of all parameters.

12. CONCLUSIONS

The overall performance in the **SQO-EV6 (Round 9)** program, based on expected results from the participating laboratories, was as follows:

- Participants Codes **01, 03, 04, 07, 08, 10, 12, 15, 16, 17, 18, 19, 21, 22,** and **23** have obtained **SUFFICIENT** performance according to the expected results, and no action is required;
- Participants Codes **02, 06, 11,** and **14** have obtained **INSUFFICIENT** performance in comparison with the expected results and must take corrective action for the tests in which their results differ from the expected values (see Appendix B).

The criteria used for the evaluation of the overall performance are the following:

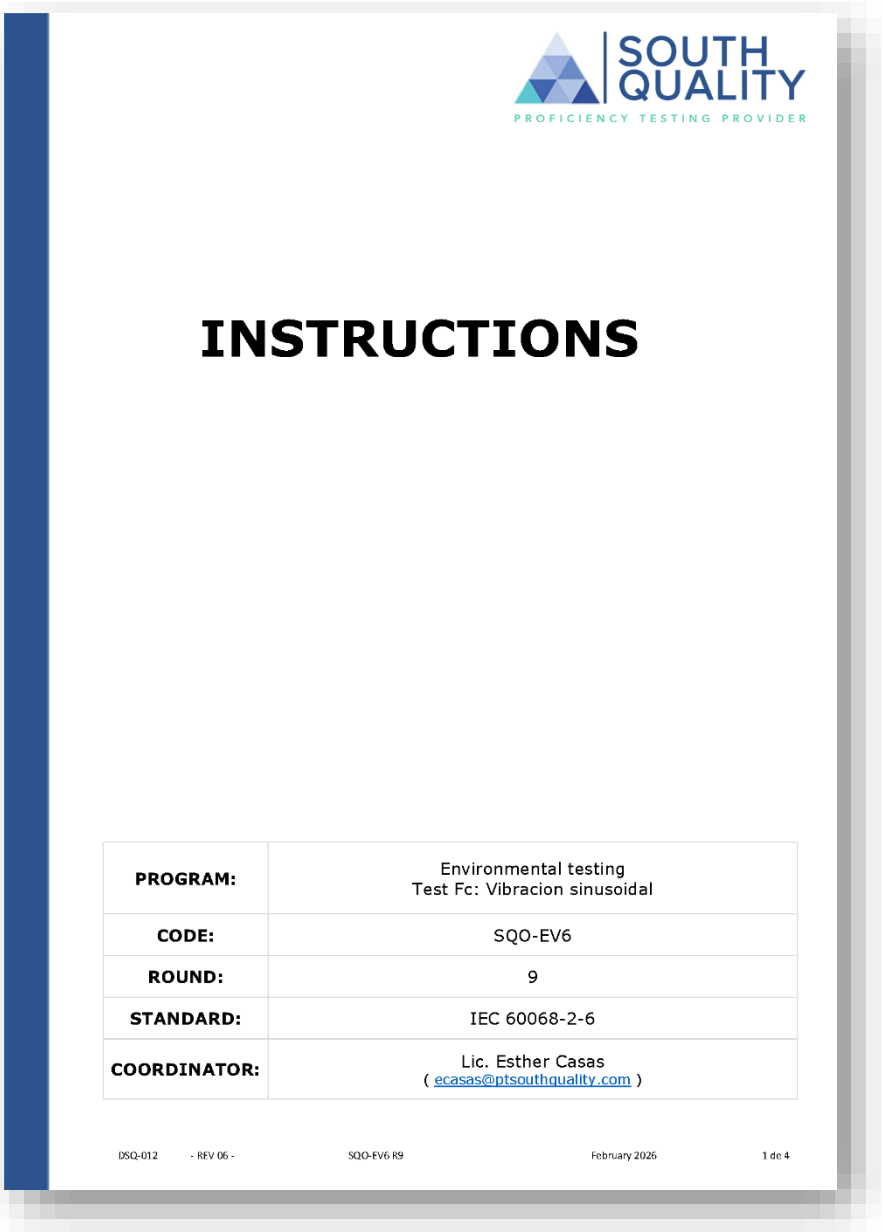
- **SUFFICIENT** performance: No unsatisfactory results were obtained.
- **INSUFFICIENT** performance: An unsatisfactory result was obtained.

APPENDIX A

A1 - PARTICIPANT DATA

Company:	**INTEK S.p.A.**
Laboratory:	**INTEK S.p.A.**
Country:	Italy
Client ID:	E456
Contact person:	Flavio Floriani - Technical Director
	(flavio.floriani@intek.it)

A2 - INSTRUCTIONS



INSTRUCTIONS

PROGRAM:	Environmental testing Test Fc: Vibracion sinusoidal
CODE:	SQO-EV6
ROUND:	9
STANDARD:	IEC 60068-2-6
COORDINATOR:	Lic. Esther Casas (ecasas@ptsouthquality.com)

DSQ-012 - REV 06 - SQO-EV6 R9 February 2026 1 de 4

1 - General

This document serves as a guide for managing the results of the **SQO-EV6 (Round 9)** program.

2 - Standard

IEC 60068-2-6: 2007

3 - Participant

INTEK S.p.A.	**CODE 19**

4 - Tests involved

TEST
Verification of the adequacy of specimens to resist specified severities of sinusoidal vibration

5 - Samples

CODE	SAMPLE	QUANTITY
LEV3020-19	Switching power supply In: 110/220V; 50/60Hz; Class 1 - Out: 12Vcc; 5A; 60W Trademark: SIMALED Model: 12V-5A(S)-60W	1
LEV3468-19	ATX power supply 220 V - 50Hz - 600W Trademark: ACONCAWA Model: ATX 600 X 24 P 2S	1

6 - Notes

a) The deadline for the delivery of results is **April 20, 2026**.
b) Participants must submit the results using the usual report employed by their laboratory.
c) The samples are to be handled as routine lab samples, with all testing, documentation, and reporting adhering to **IEC 60068-2-6**.
d) Samples must be retained until the end of the program, which concludes with the submission of the final report.
e) To review the results, the submission of images of the tests is appreciated. These images can be attached at the end of this document or sent via email.

7 - **Test conditions**

CODE	CONDITION	TEST SEVERITIES
LEV3020-19	Powered-off	10-500 Hz, 10 m/s², 1 oct/min round-trip, 3 axes, 15 min/axis effective (single-point control at fixing point, rigid horizontal mounting)
LEV3468-19	Powered-off	10-500 Hz, 10 m/s², 1 oct/min round-trip, 3 axes, 15 min/axis effective (single-point control at fixing point, rigid horizontal mounting)

8 - **Parameters to determine**

CODE	PARAMETERS (BEFORE VIBRATION)	RECOVERY / STABILIZATION PHASE (AFTER VIBRATION)	PARAMETERS (AFTER RECOVERY)
LEV3020-19	- Visual inspection - Voltage measurement (After 15 minutes powered-on - No load)	2 hours at maximum load - Input: 220 V - 50 Hz - Output: +12 V at 5 A (resistive load)	- Visual Inspection - Voltage measurement (after recovery load)
LEV3468-19	- Visual inspection - Voltage measurement (After 15 minutes powered-on - No load)	2 hours at maximum load - Input: 220 V - 50 Hz - Output: +12 V at 11 A (resistive load)	- Visual Inspection - Voltage measurement (after recovery load)

PHOTOGRAPHS

A3 - PARTICIPANT RESULTS (TEST REPORT #TR 2026-0167-00)

INTEK S.p.A.
TEST AND MEASUREMENT DIVISION

TEST REPORT
TR 2026-0167-00

Environmental and material tests (ENV) SECTOR

Product description:	Switching power supply	ATX power supply
Tested Models:	12V-5A(S)-60W	ATX 600 X 24 P 2S
Manufacturer:	SIMALED	ACONCAWA

Reference documents:	IEC 60068-2-6:2007-12
Application:	Test Fc: Vibration (sinusoidal)
Remarks:	None

Customer:	**PT SOUTH QUALITY SAS.** Pareja 3981 - Villa Devoto (C1419GVG) Ciudad Autónoma de Buenos Aires - ARGENTINA		
Order Confirmation:	CO 2026-0140/00	**dated:**	2026-03-21

Samples receiving date:	2026-03-13			
Tests date:	**from:**	2026-03-26	**to:**	2026-03-30

Test Laboratory

INTEK S.p.A. - Test and Measurement Division
Via Mazzini, 75 - 25086 Rezzato (BS) - Italy
Tel. +39 030 2591857
url: http://www.intek.it e-mail: info@intek.it

Compiled by	Verified by	Approved by
Matteo Valenti	*Marco Camodeca*	*Flavio Floriani*
ENV Test Engineer	*ENV Sector Manager*	*Chief Technical Officer*

Firmato digitalmente da

Flavio Floriani

This document does not include any attachments.

00	2026-04-13	Formal issue
Rev.	***Date***	***Description***

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1. PURPOSE

Purpose of this document is to contain results of the tests, measurements and verifications performed to assess the compliance of the samples under test, as identified and described in paragraph 3, to requirements of the standards listed in paragraph 2.

2. APPLICABLE DOCUMENTS

In the following of this test report, the "applicable documents" will be indicated without date and/or edition number and/or amendments.

2.1 REFERENCE DOCUMENTS

The tests are performed in compliance with the documents listed below:

Document	Title
IEC 60068-2-6:2007-12	Environmental testing Part 2-6: Tests - Test Fc: Vibration (sinusoidal)

2.2 TEST METHODS

The reference standards listed in the par. 2.1 require the use of the following basic standards that specify *how* the tests shall be performed. The dates of publication of the following basic standards are in conformity with the reference standards requirements.

In this case the reference standard contains the test method.

2.3 TEST PROCEDURES

Document	Title
INTEK 07 02 PP 085 PRE	Intek procedure for vibration test

2.4 OTHER DOCUMENTS

Document	Title
SQO-EV6: 2026-02	Instructions: Environmental testing - Test Fc: Vibration sinusoidal

3. SAMPLE INFORMATION

The technical data stated in this paragraph, unless otherwise specified, are declared by the customer/manufacturer or obtained from the product technical documentation and are not verified by the Laboratory. The laboratory declines all responsibility for the correctness of the information and concerning the data that can have influence on the test results.

3.1 DESCRIPTION

Identification data of test samples are reported in the first page of this document.

Photo of the sample (external view 1) – Sample No. 260808

Photo of the sample (external view 2) – Sample No. 260808

Photo of the sample (external view 3) – Sample No. 260808

Photo of the sample (external view 4) – Sample No. 260808

Photo of the sample (external view 5) – Sample No. 260808

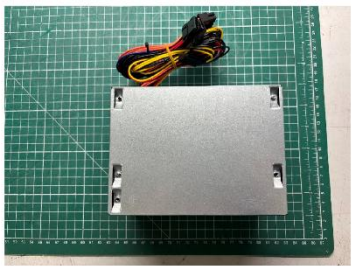


Photo of the sample (external view 6) – Sample No. 260808

Marking plate / markings – Sample No. 260808

Photo of the sample (external view 1) – Sample No. 260809

Photo of the sample (external view 2) – Sample No. 260809

Photo of the sample (external view 3) – Sample No. 260809

Photo of the sample (external view 4) – Sample No. 260809

Photo of the sample (external view 5) – Sample No. 260809

Photo of the sample (external view 6) – Sample No. 260809

Marking plate / markings – Sample No. 260809

Sample No.	Manufacturer	Model / Type	S/N or Lot No.
260808	ACONCAWA	ATX 600 X 24 P 2S	LEV3468-19
260809	SIMALED	12V-5A(S)-60W	LEV3020-19

Note: Only the tested objects are reported in this table

3.1.1 TECHNICAL DATA
None.

3.1.2 CLASSIFICATION
None.

3.1.3 ADDITIONAL INFORMATION
None.

3.2 SAMPLES ORIGIN
The test laboratory does not perform sampling.

Item	Provided by [1]	No. of samples		Internal selection method [3]
		Received	Tested [2]	
Test object				
Switching power supply	Customer	1	1	N/A
ATX power supply	Customer	1	1	N/A

[1] Manufacturer / Customer / Applicant / Unknow / Other (to specify)
[2] See chapter 5.1 for more details related to tests performed on different samples and the test sequence.
[3] Selection with the "random" module of Python 3 https://docs.python.org/3/library/random.html using the "random.choice (seq)" function

4. TEST INFORMATION

4.1 CONDITIONS DURING THE TESTS

4.1.1 PERSONNEL
Tests performed by: ***Marco Camodeca (Intek S.p.A.) for the tests at par. 6.1***
Matteo Valenti (Intek S.p.A.) for the tests at par. 6.1

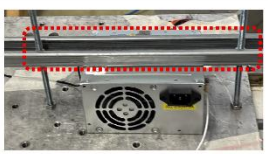
4.1.2 MODIFICATIONS TO SAMPLES
Test samples were not modified during the tests.

4.1.3 ENVIRONMENTAL CONDITIONS
The laboratory environmental conditions are recorded during the tests and for each test, the ranges that the laboratory ensures are listed in the relative paragraph. These ranges are in conformity to the limits prescribed by the reference standards.
The measurement uncertainties are given with expanded uncertainty with a level of confidence of 95% (k=2)

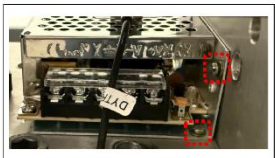
4.1.4 CONVENTIONS
If applicable, on the right of each chapter or paragraph is written the number of the chapter or paragraph of reference Standard in the form: § number.
Throughout this report a **comma** is used as the decimal separator.

4.1.5 ABBREVIATIONS
N/A = Not Applicable
N/Av = Not Available
N/D = Not Declared
N/R = Not Required (by the applicant, customer or manufacturer)
No. = Number
F = Fail
P = Pass
TR = Test Report
EUT = Equipment Under Test
NCR = No Calibration Required
x ... y = from x to y
U_{LAB} = Laboratory Measurement Uncertainty)

4.2 CONFIGURATION MODES
4.2.1.1 FIXING THE SAMPLES

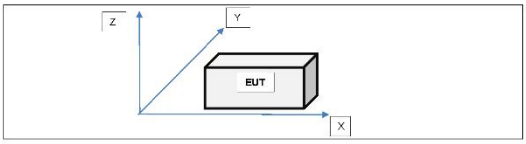


The sample No. 260808 was mounted on the vibration table and secured and anchored using a bracket.



The sample No. 260809 was mounted on a fixture using four M3 screws with flat washers tightened at 0,7 Nm

4.2.1.2 CARTESIAN PLANE



4.2.1.3 PERFORMANCE TEST
In agreement with the customer the performance test was performed as follow:

Sample no.	CODE	PARAMETERS (BEFORE VIBRATION)	RECOVERY / STABILIZATION PHASE (AFTER VIBRATION)	PARAMETERS (AFTER RECOVERY)
260808	LEV3468-19	- Visual inspection - Voltage measurement (After 15 minutes powered-on - No load)	2 hours at maximum load - Input: 220 V - 50 Hz - Output: +12 V at 11 A (resistive load)	- Visual inspection - Voltage measurement (after recovery load)
260809	LEV3020-19	- Visual inspection - Voltage measurement (After 15 minutes powered-on - No load)	2 hours at maximum load - Input: 220 V - 50 Hz - Output: +12 V at 5 A (resistive load)	- Visual inspection - Voltage measurement (after recovery load)

4.2.2 AUXILIARY EQUIPMENT DESCRIPTION
Supporting equipment used during testing: none.

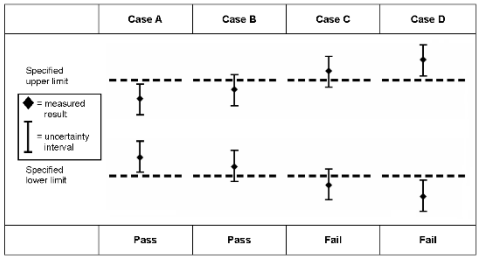
4.3 CRITERIA ADOPTED FOR COMPLIANCE EVALUATION

If applicable for compliance evaluation of the test results and considering the uncertainty values of the tests, the Laboratory adopts the following criteria:

- the reference standard specifies uncertainty for measurements:
  - measurements uncertainty permitted, or
  - instruments accuracy, or
  - application of measurements uncertainty to the measured values,

  in this case the measurement complies with the requirement if the measured value is within the limits, or with the correction due to the Laboratory uncertainty.

- the reference standard doesn't specify uncertainty for measurements or particular requirements of the instrumentation: in this case the Laboratory uses the following scheme:



For Case B the result is considered to comply with the requirements only if the measured result (♦) is within the limits of the standard (50 % risk level).

5. TEST RESULTS

Ch. TR	Test	Reference	Sample No.	Result (+)
6.1	Test Fc: Vibration (sinusoidal)	IEC 60068-2-6	260808	*See par. 6.1.3*
			260809	*See par. 6.1.3*

Notes:
(+) The criteria by which the results are expressed are given in the standards and/or in the Customer specification listed in paragraph 2 of this test report.

5.1 SAMPLES CORRELATION / TEST SEQUENCE

The samples are sequentially subjected to the tests described in the following table.

Seq.	Test	Date (from-to)	Sample No.	Remarks
1	Test Fc: Vibration (sinusoidal)	2026-03-26 2026-03-30	260808	Sequency: Axis X-Y-Z
			260809	Sequency: Axis Y-X-Z

5.2 TEST METHOD DEVIATIONS

Test methods described in the reference document are adopted without any deviation.

5.3 OPINIONS AND INTERPRETATIONS

None.

6. TESTS PERFORMED

6.1 VIBRATION TEST

The test is performed according to requirements of standards listed on chapter 2	
Test specification:	IEC 60068-2-6
Test method:	
Test procedure:	INTEK 07 02 PP 085 PRE

6.1.1 TEST PARAMETERS

Test type	Fc
Motion type	Sinusoidal
Frequency range	From 10 Hz to 500 Hz
Acceleration	10 m/s²
Test duration	15 min on each axis
Sweep rate	1 octave/minute
Sweep type	Logarithmic
Measurement filter	Filter proportional (25 % of bandwidth)
Signal plot points	2048
Note	- Spurious motions measured at each frequency are less than 50% of the excitation level except for some frequencies (see graphs below). - The X, Y axes were tested on the shaker in horizontal position.
Accelerometers fixing method	Glue and screwed directly for control accelerometer Adhesive for measurement accelerometers
Configuration	See par 4.2
Fixture	Intek fixture Aluminium cube 300 x 300 mm for sample No. 260809
EUT supply during test	No

Acceptance criteria:
No acceptance criteria are required for this test.

6.1.2 ENVIRONMENTAL CONDITIONS OF THE TEST SITE

Temperature:	(23,0 ± 5) °C
Relative humidity:	(50 ± 25) %
Atmospheric press.:	(960 ± 100) mbar

6.1.3 SUMMARY OF RESULTS

PARAMETERS (BEFORE VIBRATION)		
Description	Result	
	Sample No. 260808	Sample No. 260809
Visual inspection	During inspection, a screw was found detached from the enclosure	No critical issues detected during visual inspection
Voltage measurement (After 15 minutes powered-on - No load)	Voltage measured: 12,33 Vdc (after 15 min)	Voltage measured: 12,23 Vdc (after 15 min)

RECOVERY / STABILIZATION PHASE (AFTER VIBRATION)		
Description	Result	
	Sample No. 260808	Sample No. 260809
2 hours at maximum load	Output load for 2 hours: Voltage measured: 10,68 Vdc Measured total current of the 2 outputs: 11,0 Adc	Output load for 2 hours: Voltage measured: 11,69 Vdc Current measured: 4,99 Adc

PARAMETERS (AFTER RECOVERY)		
Description	Result	
	Sample No. 260808	Sample No. 260809
Visual inspection	A visual inspection has shown no visual damages on the sample (at naked eye, at a distance of 10 cm)	A visual inspection has shown no visual damages on the sample (at naked eye, at a distance of 10 cm).
Voltage measurement (after recovery load)	Voltage measured: 12,33 Vdc	Voltage measured: 12,25 Vdc

6.1.4 TEST INSTRUMENTATION

Description	Manufacturer	Model	Intek ID	Last Calibration	Calibration due
Power amplifier	Sentek	SCU-200	1248 N	NCR	NCR
Vibration Controller	Crystal instruments	Spider-81	1249 P	2026-02	2027-02
Shaker	Sentek	L1024M	1251 L	NCR	NCR
Rail Table	Centrotecnica	RT 450	1278 L	NCR	NCR
Expander	Centrotecnica	Magnesium 500x500 mm	1279 L	NCR	NCR
Triaxial accelerometer	Dytran	3093D3	1253 P	2026-03	2027-03
Uniaxial accelerometer	Dytran	3056D1	1255 P	2026-02	2027-02
Uniaxial accelerometer	Dytran	3056B1G	1557 P	2026-02	2027-02
Benchtop digital multimeter	Fluke	8808A	1310 P	2025-07	2026-07
Benchtop digital multimeter	Aim- TTi	1908P	1514 P	2025-07	2026-07
Multimeter clamp	Fluke	325	1482 P	2025-07	2026-07
Thermo-Hygrometer datalogger	Delta Ohm	HD35EDL1NTVI.E	1260 P	2026-03	2027-03
Barometer	Fischer	//	0224 P	2023-02	2027-02
Dynamometric screwdriver	Wera	7440-074700	1587 P	2025-10	2027-09

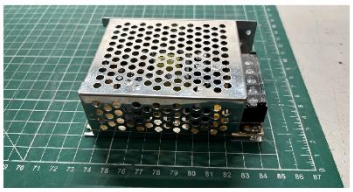
6.1.5 MEASUREMENT UNCERTAINTY

Values of expanded uncertainty are given with a level of confidence of 95 % (k = 2).

Measure	Uncertainty U
Vibration test	
Acceleration linearity	5,0 %
Sensitivity	10,0 %
Displacement	5,0 %
Velocity	5,0 %
Frequency	0,05 Hz
Other measures	
Current	1,5 %
Voltage	1,5 %

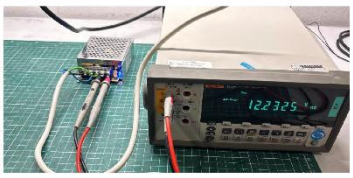
6.1.6 GRAPHS AND PHOTOGRAPHS

1 - Visual inspection: Before vibration – Sample No. 260808 - **screw detached**

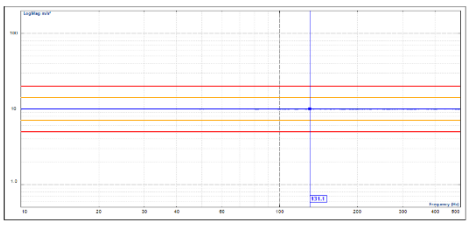


2 - Visual inspection: Before vibration – Sample No. 260809

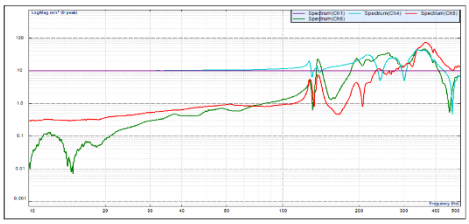
3 - Voltage measurement: Before vibration – Sample No. 260808



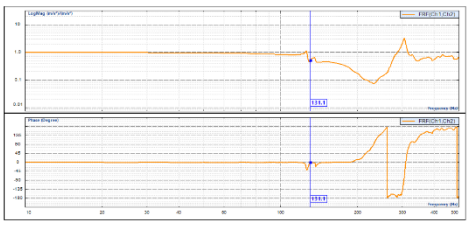
4 - Voltage measurement: Before vibration – Sample No. 260809



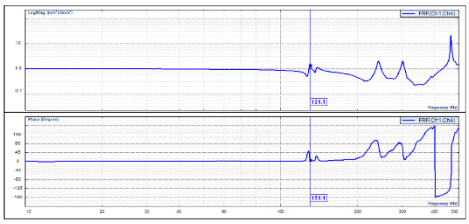
5 - Vibration profile (All axes) – Sample No. 260808



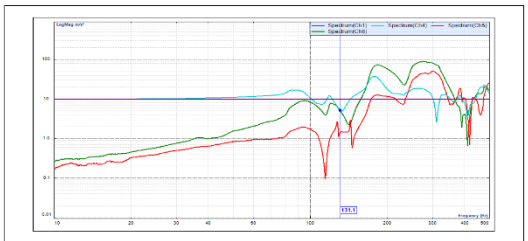
6 - Spurious motion and uniformity of motion Axis X (CH5 and CH6 traverse axes) – Sample No. 260808



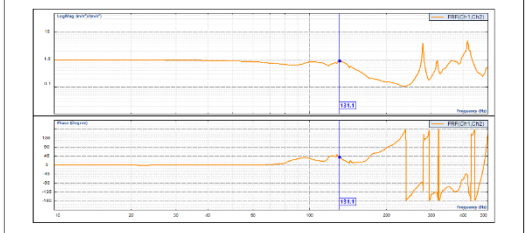
7 - Transfer function (CH2) – Axis X – Sample No. 260808



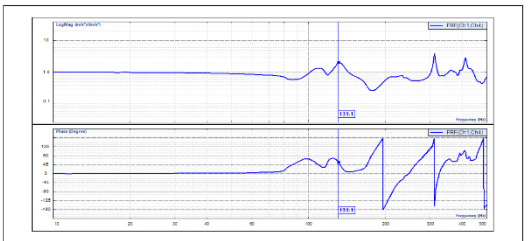
8 - Transfer function (CH4) – Axis X – Sample No. 260808



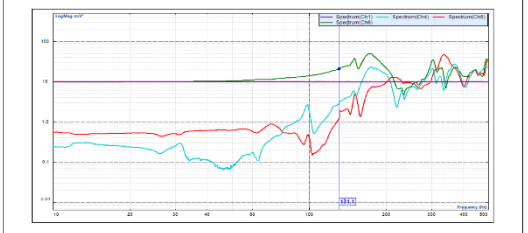
9 - Spurious motion and uniformity of motion Axis Y (CH5 and CH6 traverse axes) – Sample No. 260808



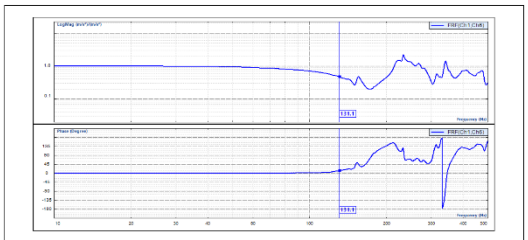
10 - Transfer function (CH2) – Axis Y– Sample No. 260808



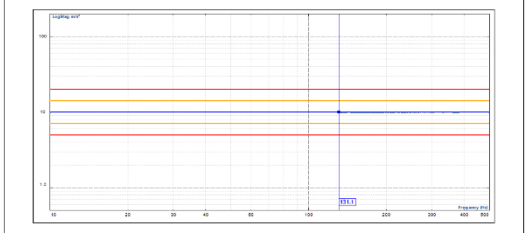
11 - Transfer function (CH4) – Axis Y – Sample No. 260808



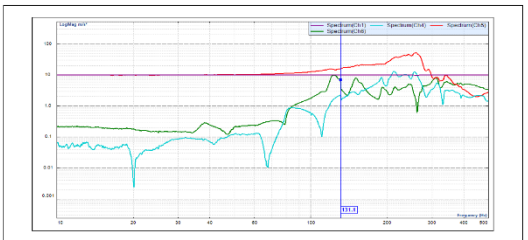
12 - Spurious motion and uniformity of motion Axis Z (CH4 and CH5 traverse axes) – Sample No. 260808



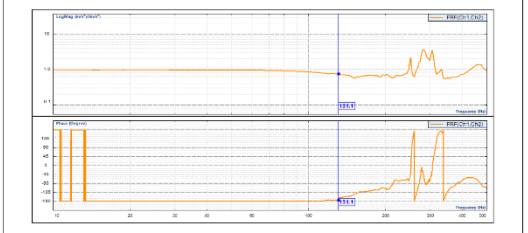
13 - Transfer function (CH6) – Axis Z – Sample No. 260808



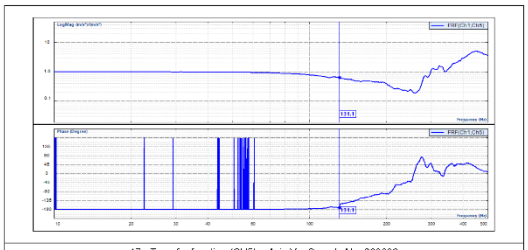
14 - Vibration profile (All axes) – Sample No. 260809



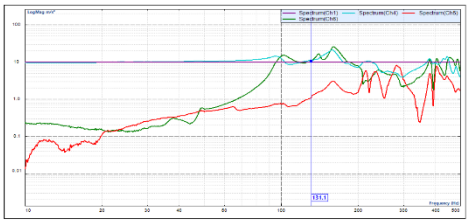
15 - Spurious motion and uniformity of motion Axis Y (CH4 and CH6 traverse axes) – Sample No. 260809



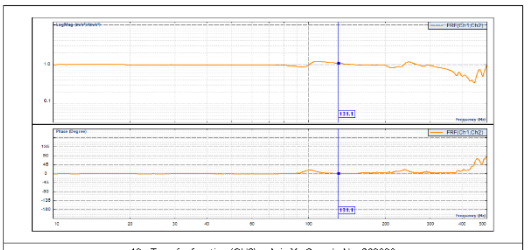
16 - Transfer function (CH2) – Axis Y – Sample No. 260809



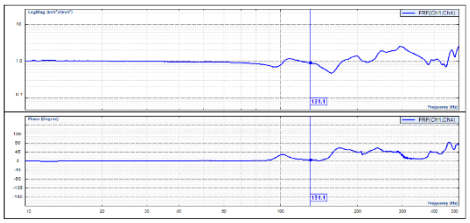
17 - Transfer function (CH5) – Axis Y – Sample No. 260809



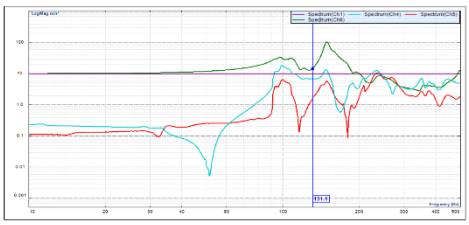
18 - Spurious motion and uniformity of motion Axis X (CH5 and CH6 traverse axes) – Sample No. 260809



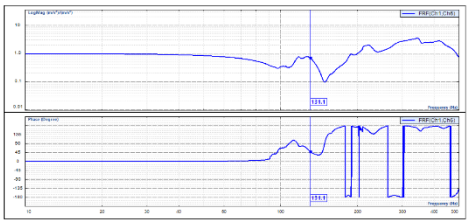
19 - Transfer function (CH2) – Axis X– Sample No. 260809



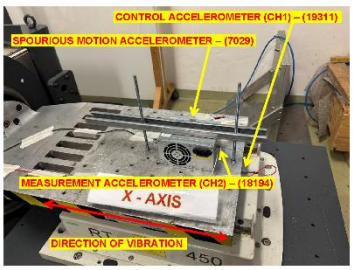
20 - Transfer function (CH4) – Axis X – Sample No. 260809



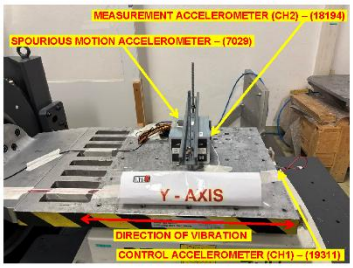
21 - Spurious motion and uniformity of motion Axis Z (CH4 and CH5 traverse axes) – Sample No. 260809



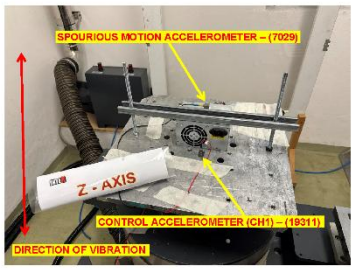
22 - Transfer function (CH6) – Axis Z – Sample No. 260809



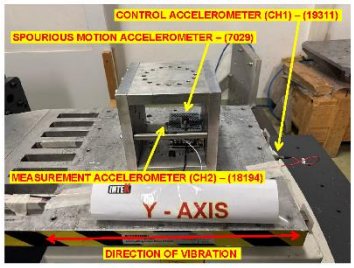
23 - Photo of test set-up – Axis X – Sample No. 260808



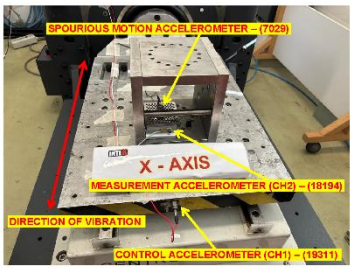
24 - Photo of test set-up – Axis Y – Sample No. 260808



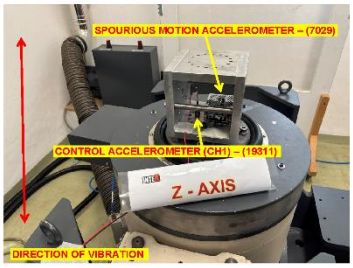
25 - Photo of test set-up – Axis Z – Sample No. 260808



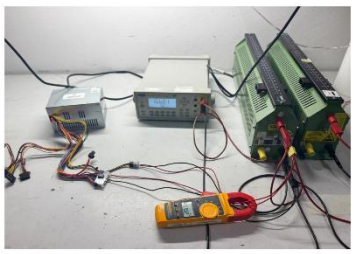
26 - Photo of test set-up – Axis Y – Sample No. 260809



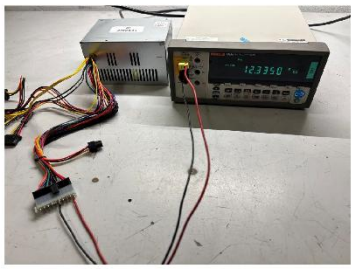
27 - Photo of test set-up – Axis X – Sample No. 260809



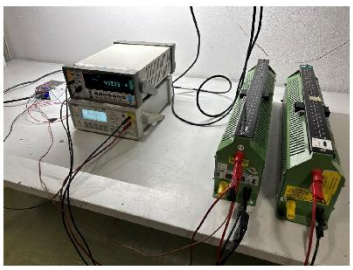
28 - Photo of test set-up – Axis Z – Sample No. 260809



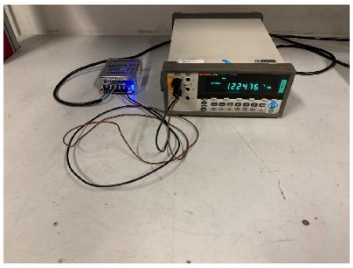
29 - Photo of test set-up – Maximum load – Sample No. 260808



30 - Voltage measurement: After vibration – Sample No. 260808



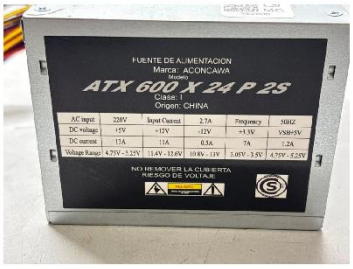
31 - Photo of test set-up – Maximum load – Sample No. 260809



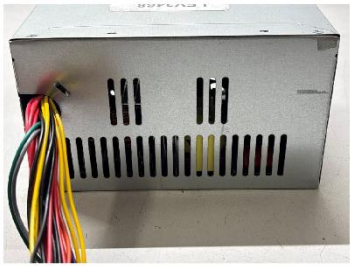
32 - Voltage measurement: After vibration – Sample No. 260809

33 - Visual inspection: After vibration – Sample No. 260808

34 - Visual inspection: After vibration – Sample No. 260808

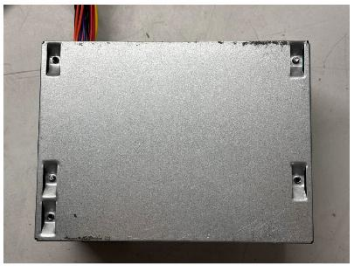


35 - Visual inspection: After vibration – Sample No. 260808

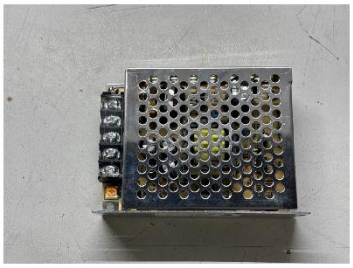


36 - Visual inspection: After vibration – Sample No. 260808

37 - Visual inspection: After vibration – Sample No. 260808



38 - Visual inspection: After vibration – Sample No. 260808



39 - Visual inspection: After vibration – Sample No. 260809

40 - Visual inspection: After vibration – Sample No. 260809

41 - Visual inspection: After vibration – Sample No. 260809

42 - Visual inspection: After vibration – Sample No. 260809

43 - Visual inspection: After vibration – Sample No. 260809

44 - Visual inspection: After vibration – Sample No. 260809

7. TEST INSTRUMENTATION

The Laboratory guarantees that all the test instruments and accessories are within the valid calibration period and satisfy all requirements of standard ISO/IEC 17025:2017.

7.1 INSTRUMENTATION ACCURACY

If reference standard doesn't specify otherwise, accuracy of used instruments is in accordance with the limits listed in the IEC operational document - IECEE OD-5014 "Instrument Accuracy Limit".

8. DOCUMENTATION

No document was necessary to acquire for the execution of the tests.

9. ANNEXES LIST

None.

End of test report.

APPENDIX B

VOID

----- END OF REPORT -----