Polytec

Qsources

## FEATURES

Integrated high resolution force sensor
Patented shaker decoupling system

## BENEFITS

Extremely small size, decoupled, dynamic shaker
Efficient connection to test-objects by adhesives
Efficient self-supporting shaker, self aligning in any inclination
Extremely low impedance loading of test-objects
High test repeatibility, far better than instrumented hammer excitation

## POTENTIAL APPLICATION AREAS

Electronic boards and assemblies
Mechatronic devices
Satelite and aircraft bound components
Ventilation and air-co systems
Automotive bound components
White goods
Electromechanic medical equipment
Components of defence equipment

## POTENTIAL MEASUREMENT TECHNIQUES

Experimental modal analysis
Transfer Path Analysis
FRF matrix based substructuring
Inverse load identification
FE model correlation
Vibro-Acoustic transfer
Structural transfer testing
Structures Statistical Energy Analysis

# Qlws LightWeightShaker

Qsources Qlws LightWeightShaker is a self-suspending, self-aligning dynamic decoupled electromagnetic shaker specifically developed to carry out consistent repeatable structural excitation in a limited space. The unique decoupling suspension solution is patent protected and allows high force density with minimal mass and stiffness loading on the test device.

There are two parts to the Qlws which can easily be separated and recombined: the forcecups and the shaker body. The forcecup is glued to the test device allowing excitation under any angle by simply clicking the shaker body onto the forcecup.

The force sensor has been integrated in the shaker allowing consistent and accurate FRF, transfer function and impulse response data acquisition. Multiple forcecups can be attached to the test device which provides the possibility for fast data acquisition and a highly efficient manner of working.

The small dimensions of Qsources Qlws' LightWeightShaker allows that the shaker can be installed inside test assemblies which are disassembled and then reassembled for measurement purposes.





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# Qlws LightWeightShaker

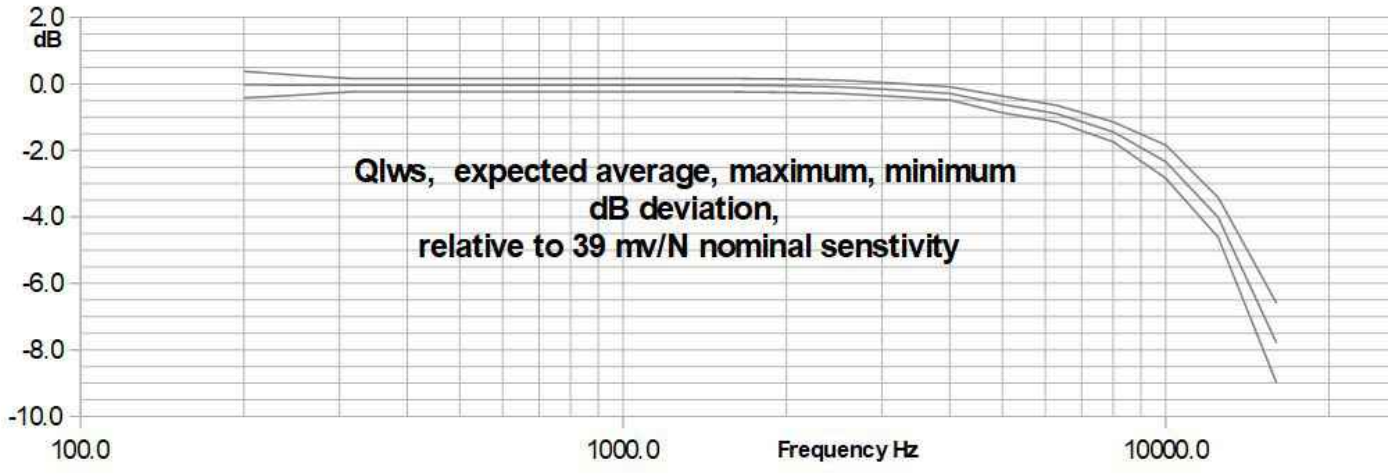
| RANGE INDICATION FOR THE TEST OBJECT | |
|---|---|
| Minimal test object weight | 400 gram** |
| Maximum test object weight | 100 kg** |
| Minimal test object modal damping | 1%** |
| **SPECIFICATIONS*** | |
| Advised frequency range | 250-13000 Hz** |
| Total shaker mass | 28 gram |
| Mass coupled to the test-object in the advised frequency range | 1.8 gram |
| Radial stiffness loading of the test-object in the advised frequency range | 25 N/mm +- 30% |
| Advised ambient temperature range for application | 10 to 45 degrees celsius** |
| Absolute maximum surface temperature of the shaker | 70 degrees Celsius**** |
| Height from test object surface | 22 mm |
| Diameter | 20 mm |
| Footprint on test-object, diameter | 7 mm |
| Force signal frequency range , + 1/-8 dB | 200-13000 Hz*** |
| Force signal frequency range +0.5/-0.5 dB | 200-4000 Hz |
| Force signal stability, temperature range of 10 to 60 degrees Celsius | +- 0.5 dB |
| Nominal force signal sensitivity | 39 mV/N |
| Force signal conditioning | IEPE |
| Typical maximum force level, using broadband random signal | 0.8 N RMS |
| Nominal electrical impedance | 4 Ohm |

** These specifications may be adapted if necessary to improve the quality of the product.*

*** The application range can be wider, or narrower depending on the test-object nature.*

**** It is advised to use the provided actual sensitivity for applications covering the 5000 to 13000 Hz range.*

***** Use protective gloves to hold the shaker when hot.*





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