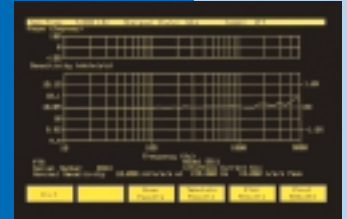


455 Integrated *TransCal*[™]

The cal lab in a box!

- ❑ Complete, integrated calibration system:
- just add reference transducer and shaker
- ❑ Integral signal conditioning amplifiers for vibration transducers
- ❑ Internal power amplifier
- ❑ Built-in graphical display
- ❑ Fully programmable calibration sequences
- ❑ Combines with 485 software to create full Windows workstation
- ❑ Calibration fully traceable to National Standards



The 455 Integrated TransCal[™] is a simple-to-operate system for calibrating virtually all types of vibration transducers. Whether you are developing new products for tough environments, monitoring valuable plant and machines, or testing for product quality assurance, 455 TransCal ensures that all your accelerometers, velocity and displacement transducers are accurately calibrated to National Standards.

The 455 Integrated TransCal incorporates precision signal conditioning amplifiers for connection of charge, voltage and ICP type devices, along with an internal power amplifier to drive the external vibration shaker. (Alternatively, you can connect to the shaker's existing power amplifier.) All user configuration and results display is via an in-built graphical interface, and data is output in spreadsheet compatible formats to the integral floppy disc drive, or to the parallel and serial ports.

A single sine measurement technique is used for maximum accuracy, speed, and noise and distortion rejection. Multiple calibration tests can be defined using frequency step, frequency sweep, or amplitude step, and a sequence of tests can be executed automatically. Reference transducer error curve correction is built in.



455/485 Workstation

With the addition of Beran's 485 software, the 455 Integrated TransCal becomes a Windows-based Calibration Workstation.

The workstation gives complete control of the 455, to allow automatic calibration tests to be performed, with the results stored in a comprehensive database and customisable calibration certificate generation.



BERAN INSTRUMENTS

455 Integrated TransCal™ Specification

Results

Calibration Results

Traceable to National Standards

1Hz to 20Hz:	1ms ⁻² to 20ms ⁻²
5Hz to 5kHz:	15ms ⁻² to 55 ms ⁻²
20Hz to 5kHz:	15ms ⁻² to 55 ms ⁻²

(See Note 1)

Measurement Uncertainty

System tolerance (See Note 2)

- with 2% reference transducer	
5Hz to 1kHz:	±2.10%
1kHz to 5kHz:	±2.15%
- with 0.7% reference transducer	
5Hz to 1kHz:	±0.95%
1kHz to 5kHz:	±1.05%

Signal Generator

Frequency range:	1mHz to 100kHz
Resolution:	up to 1 part in 30,000
Error:	<0.05%
Distortion:	<1%
Frequency /Amplitude Increment:	user defined

Useable limits of shaker

(Based on LDS V406. First structural resonance at approximately 9kHz must be avoided.)

Frequency range:	5Hz to 10kHz
Vibration amplitude:	armature displacement limits to 14mm pk-pk (0.55in pk-pk)

Frequency v. maximum load

	≤100gm	≤250gm	≤500gm	≤750gm
5 - 7.5Hz	0.7g	0.7g	0.7g	0.7g
7.5 - 10Hz	1g	1g	1g	1g
10 - 12.5Hz	2g	2g	2g	2g
12.5 - 15Hz	3g	3g	3g	3g
15 - 17.5Hz	5g	5g	5g	5g
17.5 - 20Hz	7.5g	7.5g	7.5g	7.5g
20 - 25Hz	12g	12g	10g	10g
25 - 30Hz	18g	18g	10g	10g
30 - 35Hz	25g	20g	10g	10g
35 - 10kHz	30g	20g	10g	10g

Measurement profiles

Type:	frequency step, frequency sweep amplitude step
Control parameter:	acceleration, velocity displacement
Amplitude units	metric, imperial (rms, pk, pk-pk)
Test points:	up to 80 per test
Sequential tests:	up to 4

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Reference transducer

Measured parameter:	acceleration, velocity, displacement
Interface type:	charge, voltage, ICP
Units:	metric, imperial (rms, pk, pk-pk)
Entered calibration data:	Error compensation table (for reference transducer) frequency calibration test amplitudes measured sensitivity measured phase
Number of calibration points:	up to 80

Test transducer

Measured parameter:	acceleration, velocity, displacement
Interface type:	charge, voltage, ICP, current output
Units:	metric, imperial (rms, pk, pk-pk)

Report generation

Visual display:	electro-luminescent 200 x 130mm, for configuration and result display
Text output via parallel and serial ports or PC disk:	PCL-5, comma delimited ASCII
Graphical output via parallel and serial ports or PC Disk:	PCL-5, HPGL

Interfaces

Serial port:	RS232, 9600 baud rate
Parallel port:	Centronics compatible
Floppy disk	3.5 inch, 1.44Mbyte
IEEE 488	controller, talker, listener, control of generator and analysers

General

Power supply	90 - 255Vac, 47-63 Hz
consumption:	<400VA
Dimensions:	450 x 270 x 470mm
Operating temperature:	0° to 50°C
Specification:	20° ± 10°C
Weight:	approx 18kg

Notes

- Traceable frequency range is determined by calibration of reference device.
- The standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

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