

Q-MACS Trace



technical specification

The Q-MACS Trace is a portable system for high sensitive trace gas measurements using different optical long path cells which depend on the sensitivity required. It is based on the Q-MACS Basic and uses infrared absorption spectroscopy to measure absolute molecular concentrations.

general

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|-----------------|--|
| description | single path infrared spectrometer with IR-light source and long path cell |
| sensitivity | down to ppb range [1] |
| time resolution | down to milliseconds |
| size | 700 mm x 1240 mm x 450 mm |
| weight | 125 kg |
| system versions | <ul style="list-style-type: none"> ▪ Q-MACS Trace 3.6 - 36 m Long Path Cell ▪ Q-MACS Trace 5.4 - 54 m Long Path Cell ▪ Q-MACS Trace 7.6 - 76 m Long Path Cell ▪ Q-MACS Trace 10.0 - 100 m Long Path Cell |

components

| | |
|-------|--|
| parts | <ul style="list-style-type: none"> ▪ optical board ▪ laptop with external PCI-card box ▪ Herriot cell ▪ vacuum pump system ▪ water cooling system |
|-------|--|

parameter

| | |
|---------------|---|
| power | <ul style="list-style-type: none"> ▪ 230 V, max. 2 A (switch-on current 6 A) ▪ 115 V, max. 4 A (switch-on current 12 A) |
| working range | +5 °C to +40 °C |

QCL

| | |
|-----------------------|---|
| tuning method | <ul style="list-style-type: none"> ▪ inter pulse mode (laser sweep mode) ▪ intra pulse mode (single pulse mode) |
| pulse width | 8 ns* ... 256 ns** * depends on the QCL and QCL-voltage used ** longer pulses on request |
| pulse frequency | up to 1 MHz |
| QCL temperature range | -35 °C to +40 °C |
| QCL | tested and installed |

[1] depends on species, temperature and pressure

