



## THE CR:465 GALACTUS NOISE MONITORS

The CR:465 Galactus instruments are a range of high performance noise monitors that have been designed to integrate with external data loggers and environmental measurement systems and to provide a comprehensive set of acoustic data.

Comprising a processor unit and a fully weather protected microphone system, the Galactus instruments meet the Class 1 requirements of IEC 61672 and IEC 61260 and can provide a comprehensive set of user configurable acoustic data parameters via an industry standard RS232 protocol.

The Galactus instruments can provide the acoustic information required to calculate the parameters defined in ISO 20906:2009 making the units ideal for the monitoring and measurement of unattended aircraft noise.

- Ideal for integration with external data loggers & environmental monitoring systems
- Class 1 performance to IEC 61672 & IEC 61260
- Designed to provide data in accordance with ISO 20906:2009
- Industry standard RS232 datastream with user configurable parameters
- Data provided every 1 or 0.5 seconds with acoustic data points up to every 1/16<sup>th</sup> second
- Simultaneous measurement of A, C & Z frequency weightings
- Simultaneous measurement of F, S & I time weightings
- 1:1 octave bands from 31,5Hz to 16kHz & 1:3 octave bands from 6,3Hz to 20kHz
- Electrostatic calibration with 200mm dual layer windshield provides calibration check & verification functions
- Automatic GPS synchronisation with time, date & location data

# CR:465 GALACTUS NOISE MONITORS

## PRELIMINARY SPECIFICATIONS

The CR:465 Galactus instruments are controlled by a set of commands that are sent to the unit via a standard RS232 communications protocol.

This allows for full external control of all aspects of the instrument, including calibration and verification using the electrostatic actuator system. This allows the units to be integrated quickly and easily alongside other sensors and data sources.

Measurement data is returned as packets of information via the RS232 port with the packets sent at either 1 second or 0,5 second intervals. These packets can contain any of the acoustic measurement values which can be configured to suit the application in which the instrument is being used.

To allow for the calculation of  $L_n$  values in accordance with ISO 20906:2009 "Acoustics - Unattended monitoring of aircraft sound in the vicinity of airports", the data packets can contain 1/8<sup>th</sup> second  $L_{AS}$  data points allowing exceedence levels (%  $L_N$  values) to be calculated.

Preliminary Specifications & Measurements	
Standards	IEC 61672-1:2002 Class 1 1:3 Octave Band Filters to IEC 61260
Microphone	External weatherproof microphone unit with electrostatic actuator system
Calibration	Calibration check & verification via electrostatic actuator Acoustic calibration using external acoustic calibrator
Windshield	Dual layer 200mm windshield with hydrophobic coating
Total Measurement Range	20dB to 140dB RMS Single Range
Noise Floor	< 18dB(A)
Frequency Weightings	RMS: A, C, & Z Measured Simultaneously Peak: A, C, & Z Measured Simultaneously 31,5Hz to 16kHz for 1:3 Octave Bands 6,3Hz to 20kHz for 1:3 Bands Octaves
Time Weightings	Fast, Slow & Impulse Measured Simultaneously
Display	High resolution colour OLED display with system information, measurement data & diagnostics
Time & Date	Automatic synchronisation to GPS at startup & every subsequent 60 minutes
Keypad	4 button keypad
Data Buffer	Up to 5 minutes at 1 second data transmission
Power	15v DC
Connections	Microphone COMMS A GPS – SME Connector External Power Input
Language Options	English, French, Spanish, German, Chinese
Data Output	Real-time acoustic measurement data provided via RS232 1 second or 0.5 second data packets with Fletcher-16 checksum
Data Protocol	Baud Rate: 115kbps Data Bits: 8 Parity: None Stop Bits: 1 Flow Control: None

Preliminary Specifications & Measurements	
Available Acoustic Measurement Values	<p><b>Live data sets</b></p> <p><math>L_{xy}</math> – Sound Pressure Level (SPL)  <math>L_{xyMAX}</math> – Maximum SPL (1s)  <math>L_{xEQ}</math> – Equivalent Continuous Sound Level (Leq)  <math>L_{xEQ16MAX}</math> – Maximum Leq<sub>0.2,5ms</sub> (1s)  <math>L_{xPEAK}</math> – Peak Sound Pressure</p> <p>Where x is A, C or Z and y is F, S, or I            Simultaneous measurement of A,C &amp; Z and F, S &amp; I</p> <p><math>L_{AyZ}</math> – List of 62.5 ms Sound Pressure Levels            Where y is F or S and z is 1 to 16</p> <p><math>OCTz</math> – 1:1-Octave band Leq  <math>3OCTz</math> – 1:3-Octave band Leq</p> <p><b>Overall data sets</b></p> <p><math>L_{xEQT}</math> – Overall Leq  <math>L_{xyMAXT}</math> – Overall Maximum Sound Pressure Level  <math>L_{xyMINT}</math> – Overall Minimum Sound Pressure Level  <math>L_{xPEAKT}</math> – Overall Peak Sound Pressure</p> <p><math>OCTzT</math> – Overall 1:1-Octave band Leq  <math>3OCTzT</math> – Overall 1:3-Octave band Leq            Where z is 0 to 35 (see table below)</p> <p><math>L_Nz</math> – Overall Statistical Level (LN)            Where z is 1, 5, 10, 50, 90, 95 or 99</p> <p><math>L_{ATMsyT}</math> – Overall Taktmaximal            Where s is 3 or 5 and y is F or I</p> <p>Where x is A, C or Z and y is F, S, or I            Simultaneous measurement of A,C &amp; Z and F, S &amp; I</p>
Alarms	Preamplifier disconnected Preamplifier tilt Windshield removed Low battery power Calibration failure Microphone fault
GPS	Global positioning for accurate time synchronization and location



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All specifications are subject to change without notice.  
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