

Technical Specifications: CR:16XX



OPTIMUS+ RED

Technical specifications

Applicable standards¹

IEC 61672-1:2013 Class 1 or Class 2
IEC 61672-1:2002 Class 1 or Class 2 Group X
IEC 60651:2001 Type 1 I or Type 2 I
IEC 60804:2000 Type 1 or Type 2
IEC 61252:1993 personal sound exposure meters
ANSI S1.4 -1983 (R2006), ANSI S1.43 - 1997 (R2007), ANSI S1.25:1991
IEC 61260:1996 & ANSI S1.11-2004
DIN 45657:2005-03

Microphone

Class 1 MK:224/MK:229 pre-polarised, Class 2 MK:216 pre-polarized

Microphone preamplifier

MV:200 removable preamplifier (All Versions)

Total measurement range:

20dB to 140dB RMS single range
Noise floor: <19dB(A) Class 1, <22dB(A) Class 2

Frequency weightings

RMS & Peak A, C, & Z measured simultaneously

Frequency bands 10 octave bands (31.5Hz to 16kHz, C & D variants)

Time weightings

Fast, Slow & Impulse measured simultaneously

Display

High resolution display
Ambient light sensor and illuminated keypad

Memory

4GB (B, C & D Versions), 32GB factory fit option

AuditStore

Measurement verification data stored in secure memory

Time history data rates (global settings)

10ms, 62.5ms, 100ms, 125ms, 250ms, 1/2 sec, 1 sec, 2 sec (user selectable)

VoiceTag audio recording (B, C & D versions)

Up to 30 seconds of audio notes with each measurement

Integrators

Three simultaneous "virtual" noise meters. Integrator 1 is preset to Q3 for Leq functions. Integrators 2 & 3 can be configured with the following:

Exchange rate 3, 4 or 5 dB
Threshold 70dB to 120dB (1 dB steps)

Time weighting None or Slow
Criterion level 70dB to 120dB (1 dB steps)

Criterion time 1 to 12 hours in 1 hour steps

Integrator quick settings

EU, OSHA HC & OSHA NC, OSHA HC & ACGIH, MSHA HC & MSHA EC, Custom 1 & Custom 2

Measurement control

Pause & back erase with user-selectable duration

Dimensions

Size 283mm x 65mm x 30mm
Weight 300gms/10oz

Batteries

4 x AA alkaline

Battery life

Typically 12 hours with alkaline AA
Typically 20 hours with lithium AA non-rechargeable. Battery life is dependent upon the battery type, quality and screen brightness

Connections

USB Type B to PC
AC & DC output via ZL:174 (2 x Phono, 1m)
Multi-pin IO for external power via ZL:171 cable (2.1mm socket)
External power: 5v-15v via MultiIO socket via ZL:171 cable (2.1mm socket), dependent on settings

Tripod mount

1/4" Whitworth socket

Case

High impact ABS-PC and soft touch back and keypad

Environmental

Operating temperature -10°C to +50°C

Storage temperature -20°C to +60°C

Humidity Up to 95% RH non-condensing

Electromagnetic performance

IEC 61672-1
Except where modified by EN 61000-6-1:2007 & EN 61000-6-1:2007

Language options

English, French, German, Spanish & Italian as standard.

Software support

NoiseTools analysis software supplied as standard. Compatible with Microsoft Windows 7, 8 & 10

Bluetooth (use with dBActive)

BLE compatible with Android and iOS devices
dBActive available from Google Play and the App Store.

All specifications, features and values are typical and are subject to change without notice.



Measurement functions²

CR:162A & CR:161A

Displayed functions

LXY, LXYMax, LXYMin, LXeq, LCPeak, LZPeak, LCeq-LAeq, LXE
 Graph of short LAeq, LCPeak
 Integrators 2 & 3: TWA, dose%, est dose%
 Measurement run time

CR:162B & CR:161B

Displayed functions

LXY, LXYMax, LXYMin, LXeq, LCPeak, LZPeak, LCeq-LAeq, LXE, LAleq
 Graph of short LAeq, LCPeak
 Measurement run time
 Integrators 2 & 3: TWA, dose%, est dose%

Stored functions

LXYMax & time history of LXYMax
 LAeq, LCeq, LZeq, LCPeak, LZPeak, LAPeak
 Time history of LAeq, LCeq, LZeq, LCPeak, LZPeak, LAPeak, LAleq
 Integrators 2 & 3: LAVG, TWA, %dose
 Time history of LAVG

CR:162C & CR:161C

Displayed functions

LXY, LXYMax, LXYMin, LXeq, LCPeak, LZPeak, LCeq-LAeq, LXE, LAleq
 Graph of short LAeq, LCPeak
 Measurement run time
 Integrators 2 & 3: TWA, dose%, est dose%
 Real-time octave band filters

Stored functions

LXYMax & time history of LXYMax
 LAeq, LCeq, LZeq, LCPeak, LZPeak, LAPeak
 Time history of LAeq, LCeq, LZeq, LCPeak, LZPeak, LAPeak, LAleq
 Integrators 2 & 3: LAVG, TWA, %dose
 Time history of LAVG
 Octave bands: overall Leq & Leq time history for each band
 Measurement run time
 Time & date of measurement start

CR:162D & CR:161D

Displayed functions

LXY, LXYMax, LXYMin, LXeq, LCPeak, LZPeak, LCeq-LAeq, LXE, LAleq
 Graph of short LAeq, LCPeak
 Measurement run time
 Integrators 2 & 3: TWA, dose%, est dose%
 Real-time octave band filters
 NR & NC values & curves

Stored functions

LXYMax & time history of LXYMax
 LAeq, LCeq, LZeq, LCPeak, LZPeak, LAPeak
 Time history of LAeq, LCeq, LZeq, LCPeak, LZPeak, LAPeak, LAleq
 Integrators 2 & 3: LAVG, TWA, %dose
 Time history of LAVG
 Octave Bands: Overall Leq & Leq Time History for each band
 NR & NC values & curves
 Measurement run time
 Time & date of measurement start
 where x=A, C, Z; y= F, S, I

Other functions may be calculated by the NoiseTools software and displayed on download.

Notes

¹ Please contact Cirrus Research plc for details of the standards and approvals that are available on specific instrument types.

² For details of the displayed and stored parameters, please refer to the optimus user manual for full specifications.

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	Class 1	Class 2	Sound level functions	Leq/Peak functions	TWA/Dose functions	Data logging	Pause & back erase	AuditStore	VoiceTag note recording	1:1 octave band filters	NR & NC curves on-screen	Software support	Bluetooth®	Measurement kit
CR:162A		✓	✓	✓	✓		✓					dBActive only	✓	CK:162A
CR:161A	✓		✓	✓	✓		✓					dBActive only	✓	CK:161A
CR:162B		✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	CK:162B
CR:161B	✓		✓	✓	✓	✓	✓	✓	✓			✓	✓	CK:161B
CR:162C		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	CK:162C
CR:161C	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	CK:161C
CR:162D		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	CK:162D
CR:161D	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	CK:161D

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*software capabilities are dependent on the functionality of your sound level meter

For our full range visit
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