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Technical Specifications

AD629



D-0106991-G – 2023/09



Interacoustics



License overview

International configuration AD629		
	Basic license	Extended license
Licenses Audiometry		
Basic Audiometry	x	x
Békésy		x
SISI	x	x
Langenbeck (tone-in-noise)		x
Stenger	x	x
Modified Hughson-Westlake	x	x
Weber	x	x
ABLB	x	x
Speech testing with CD/Mic	x	x
Build-in wave files	x	x
Binaural Speech		x
Hearing Loss Simulator (HLS)		x
MHA		x
QuickSIN	optional	optional
TEN test	optional	optional
High Frequency (HF)	optional	optional
Freefield Lineout	x	x
Hyrbid mode - PC controlled mode	optional	optional
Sync mode - Audiogram transfer	optional	optional
Fuctions available only in Diagnostics suite		
MaskingHelper	x	x



Languages supported in IMP and AUD

	Chinese	Czech	English	Finnish	French	German	Greek	Italian	Japanese	Korean	Norwegian	Polish	Portuguese	Russian	Spanish	Turkish
IMP																
MT10			X		X	X										
Existing AT235			X			X										
New AT235	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Existing AA222			X			X										
New AA222	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Titan	X	X	X		X	X		X	X	X			X	X	X	
AUD																
AS608			X		X	X									X	
AD226	X		X		X	X		X				X	X	X	X	X
AD629 / AD229	X*	X*	X	X*	X	X	X*	X	X*	X*	X*	X	X*	X*	X	X
AC40	X*	X*	X	X*	X	X	X*	X	X*	X*	X*	X	X*	X*	X	X
Suites																
Titan suite	X	X	X		X	X		X	X			X	X	X	X	X
DS	X	X	X		X	X	X	X	X	X		X	X	X	X	X



Included and optional parts

Included parts	DD45 Audiometric headset B71 Bone conductor APS3 Patient response button Goose neck microphone Power cable Operation manual Multilingual CE instructions for use
Optional parts	Diagnostic Suite software OtoAccess® database Carrying case (Standard or Trolley Style) IP30 Audiometric insert phones TDH39 Audiometric headset DD450 Audiometric headset DD65v2 Audiometric headset Talk back microphone Sound field speakers SP90 (with external power amp) AP12 Power Amplifier 2x12 Watt AP70 Power Amplifier 2x70 Watt



General technical specifications

Medical CE-mark:	The CE-mark indicates that Interacoustics A/S meets the requirements of Annex II of the Medical Device Directive 93/42/EEC. Approval of the quality system is made by TÜV – identification no0123	
Standards:	Safety:	IEC 60601-1 2005/EN 60601-1 2006 and A1 2012 ANSI/AAMI ES60601-1:2005/(R)2012 CAN/CSA-C22.2 No. 60601-1:14 Class II, Type B applied parts
	EMC:	IEC 60601-1-2 (2014)
	Audiometer:	Tone Audiometer: IEC 60645 -1 (2017), ANSI S3.6 (2010), Type 2 Speech Audiometer: IEC 60645-1 (2017)/ANSI S3.6 (2010) type B or B-E. Auto threshold tests: ISO 8253-1 (2010)
Calibration	Calibration information and instructions are located in the AD629 Service manual	
Air Conduction	DD45:	PTB/DTU report 2009
	TDH39:	ISO 389-1 1998, ANSI S3.6-2010
	DD65 v2	PTB 1.61-4091606 2018 & AAU 2018
	IP 30:	ISO 389-2 1994, ANSI S3.6-2010 DES-2361
Bone Conduction	B71:	ISO 389-3 1994, ANSI S3.6-2010
	Placement:	Mastoid
Free Field	ISO 389-7 2005, ANSI S3.6-2010	
High Frequency	ISO 389-5 2004, ANSI S3.6-2010	
Effective masking	ISO 389-4 1994, ANSI S3.6-2010	
Transducers	DD45	Headband Static Force 4.5N ±0.5N
	TDH39	Headband Static Force 4.5N ±0.5N
	DD450	Headband Static Force 10N ±0.5N
	DD65 v2	Headband Static Force 10N ±0.5N
	B71 Bone	Headband Static Force 5.4N ±0.5N
	IP30	
Patient Response switch	One hand held push button.	
Patient communication	Talk Forward (TF) and Talk Back (TB).	
Monitor	Output through built-in speaker or through external earphone or speaker.	
Special tests/test battery	SISI. ABLB. Stenger. Stenger Speech. Langenbeck (tone in noise). Békésy Test. Weber.	
	2 channel speech, 2 channels Master Hearing Aid, Auto threshold.	
	Auto threshold tests:	
	Available time for patient to respond:	Same as tone presentation
	Increment of hearing level:	5dB.
	Auto threshold test (Békésy):	
Mode of operation:	Békésy	
Rate of level change:	2.5 dB/s ±20%	
Smallest increment of level:	0.5 dB	
Stimuli		



Tone	125-20000Hz separated in two ranges 125-8000Hz and 8000-20000Hz. Resolution 1/2-1/24 octave.																																																																
Warble Tone	1-10 Hz sine +/- 5% modulation																																																																
Wave file	44100Hz sampling, 16 bits, 2 channels																																																																
Masking	Automatic selection of narrow band noise (or white noise) for tone presentation and speech noise for speech presentation. Narrow band noise: IEC 60645-1:2001, 5/12 Octave filter with the same centre frequency resolution as pure Tone. White noise: 80-20000Hz measured with constant bandwidth Speech Noise. IEC 60645-2:1993 125-6000Hz falling 12dB/octave above 1KHz +/-5dB																																																																
Presentation	Manual or Reverse. Single or multiple pulses.																																																																
Intensity	Check the accompanying Appendix Available Intensity Steps is 1, 2 or 5dB Extended range function: If not activated, the Air Conduction output will be limited to 20 dB below maximum output.																																																																
Frequency range	125Hz to 8kHz (Optional High Frequency: 8 kHz to 20 kHz) 125Hz, 250Hz, 750Hz, 1500Hz and 8kHz may freely be deselected																																																																
Speech	<p><u>Frequency Response:</u></p> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th rowspan="2">Frequency (Hz)</th> <th colspan="2">Linear (dB)</th> <th colspan="2">FFeq_{uv} (dB)</th> </tr> <tr> <th>Ext sign¹ Sign²</th> <th>Int.</th> <th>Ext sign¹ Sign²</th> <th>Int.</th> </tr> </thead> <tbody> <tr> <td rowspan="4"><i>TDH39</i> (IEC 60318-3 Coupler)</td> <td>125-250</td> <td>+0/-2</td> <td>+0/-2</td> <td>+0/-8</td> <td>+0/-8</td> </tr> <tr> <td>250-4000</td> <td>+2/-2</td> <td>+2/-1</td> <td>+2/-2</td> <td>+2/-2</td> </tr> <tr> <td>4000-6300</td> <td>+1/-0</td> <td>+1/-0</td> <td>+1/-0</td> <td>+1/-0</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="4"><i>DD65v2</i> (IEC 60645-1 Coupler)</td> <td>125-250</td> <td>+0/-2</td> <td>+1/-0</td> <td>+0/-</td> <td>+0/-7</td> </tr> <tr> <td>250-4000</td> <td>+1/-1</td> <td>+1/-1</td> <td>+2/-2</td> <td>+2/-3</td> </tr> <tr> <td>4000-6300</td> <td>+0/-2</td> <td>+0/-2</td> <td>+1/-1</td> <td>+1/-1</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><i>IP 30</i> (IEC 60318-5 Coupler)</td> <td>250-4000</td> <td>+2/-3</td> <td>+4/-1</td> <td colspan="2">(Non linear)</td> </tr> <tr> <td><i>B71 Bone Conductor</i> (IEC 60318-6 Coupler)</td> <td>250-4000</td> <td>+12/-12</td> <td>+12/-12</td> <td colspan="2">(Non linear)</td> </tr> </tbody> </table> <p>2% THD at 1000 Hz max output +9 dB (increasing at lower frequency) Level range: -10 to 50 dB HL</p> <p>1. Ext. sign: CD input 2. Int. sign: Wave files</p>		Frequency (Hz)	Linear (dB)		FFeq _{uv} (dB)		Ext sign ¹ Sign ²	Int.	Ext sign ¹ Sign ²	Int.	<i>TDH39</i> (IEC 60318-3 Coupler)	125-250	+0/-2	+0/-2	+0/-8	+0/-8	250-4000	+2/-2	+2/-1	+2/-2	+2/-2	4000-6300	+1/-0	+1/-0	+1/-0	+1/-0						<i>DD65v2</i> (IEC 60645-1 Coupler)	125-250	+0/-2	+1/-0	+0/-	+0/-7	250-4000	+1/-1	+1/-1	+2/-2	+2/-3	4000-6300	+0/-2	+0/-2	+1/-1	+1/-1						<i>IP 30</i> (IEC 60318-5 Coupler)	250-4000	+2/-3	+4/-1	(Non linear)		<i>B71 Bone Conductor</i> (IEC 60318-6 Coupler)	250-4000	+12/-12	+12/-12	(Non linear)	
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External signal	<p>Speech replaying equipment connected to the CD input must have a signal-to-noise ratio of 45 dB or higher.</p> <p>The speech material used must include a calibration signal suitable for adjusting the input to 0 dBVU.</p>									
Free Field	<p><u>Power amplifier and loudspeakers</u></p> <p>With an input of 7 Vrms - Amplifier and loudspeakers must be able to create a Sound Pressure Level of 100 dB in a distance of 1 meter - and meet the following requirements:</p> <table border="0"> <tr> <td>Frequency Response</td> <td>Total Harmonic Distortion</td> </tr> <tr> <td>125-250 Hz +0/-10 dB</td> <td>80 dB SPL < 3%</td> </tr> <tr> <td>250-4000 Hz ±3 dB</td> <td>100 dB SPL < 10%</td> </tr> <tr> <td>4000-6300 Hz ±5 dB</td> <td></td> </tr> </table>		Frequency Response	Total Harmonic Distortion	125-250 Hz +0/-10 dB	80 dB SPL < 3%	250-4000 Hz ±3 dB	100 dB SPL < 10%	4000-6300 Hz ±5 dB	
Frequency Response	Total Harmonic Distortion									
125-250 Hz +0/-10 dB	80 dB SPL < 3%									
250-4000 Hz ±3 dB	100 dB SPL < 10%									
4000-6300 Hz ±5 dB										
Internal storage	1000 clients / 50.000 sessions									
Signal Indicator (VU)	<p>Time weighting: 300mS</p> <p>Dynamic range: 23dB</p> <p>Rectifier characteristics: RMS</p> <p>Selectable inputs are provided with an attenuator by which the level can be adjusted to the indicator reference position(0dB)</p>									
Data Connections (sockets)	<p>4 x USB A (compatible with USB 1.1 and later)</p> <p>1 x USB B (compatible with USB 1.1 and later)</p> <p>1 x LAN Ethernet</p>									
External devices (USB)	<p>Standard PC mouse and keyboard (for data entry)</p> <p>Supported printers: Standard PCL3 printers (HP, Epson, Canon)</p>									
Input Specifications	TB	100uVrms at max. gain for 0dB reading Input impedance: 3.2KOhm								
	Mic.2	100uVrms at max. gain for 0dB reading Input impedance: 3.2KOhm								
	CD	7mVrms at max. gain for 0dB reading Input impedance: 47KOhm								
	TF (side panel)	100uVrms at max. gain for 0dB reading Input impedance: 3.2KOhm								
	TF (front panel)	100uVrms at max. gain for 0dB reading Input impedance: 3.2KOhm								
	Wave files	Plays wave file from hard disk drive								
Output Specifications	FF1 & 2	7Vrms at min. 2KOhm load 60-20000Hz -3dB								
	Left & Right	7Vrms at 10 Ohms load 60-20000Hz -3dB								
	Ins. Left & Right	7Vrms at 10 Ohms load 60-20000Hz -3dB								
	Bone	7Vrms at 10 Ohms load 60-10000Hz -3dB								
	Ins. Mask	7Vrms at 10 Ohms load 60-20000Hz -3dB								
	Monitor (side panel)	2x 3Vrms at 32 Ohms / 1.5Vrms at 8 Ohms load 60-20000Hz -3dB								
Display	5,7 inch high resolution color display 640x480 pixels									
Compatible software	Diagnostic Suite - Noah, OtoAccess and XML compatible									
Dimensions (LxWxH)	36.5 x 29.5 x 6.5 cm / 14.4 x 11.6 x 2.6 inches									
Weight	3.3kg/6.3lb									
Power supply	100-240 V~, 50-60Hz max 0.5A									
Operation environment	Temperature:	15-35°C								
	Re. Humidity:	30-90% Non condensing								



Transport and storage	Transport temperature:	-20-50°C
	Storage temperature:	0-50°C
	Re. Humidity:	10-95% Non condensing