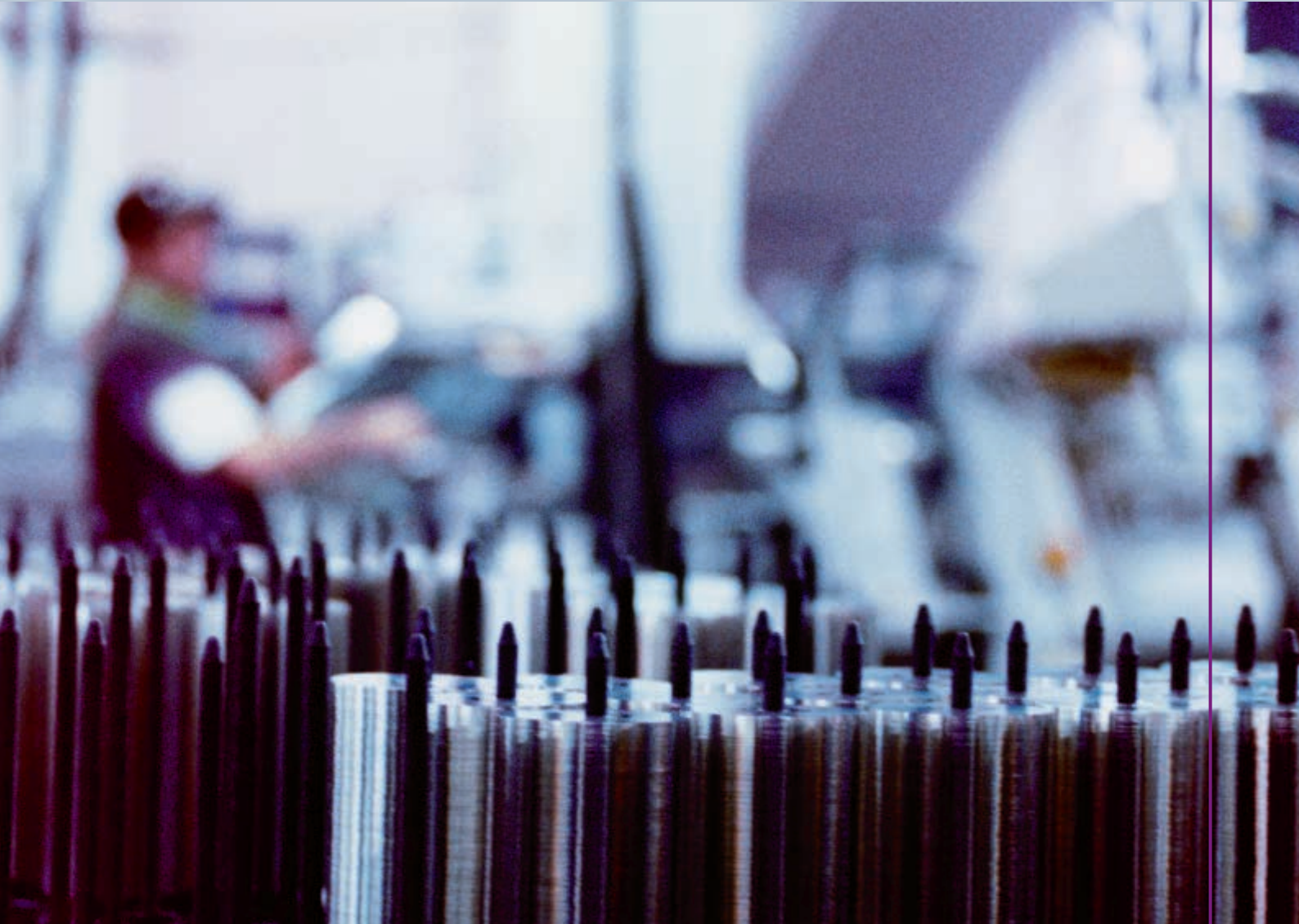


# QUALITY CONTROL SOLUTIONS FOR RECORDABLE DVD



DVD+R/RW STAMPER PRO

DVD+R/RW PRO

DVD-R/RW STAMPER PRO

DVD-R/RW PRO

DVD+1.2

# "YOU'RE NOT PRODUCING DISCS... ...YOU'RE PRODUCING A REPUTATION"

*Your reputation as a reliable provider of optical media rests on the surface of every disk you press. A sobering thought, especially in today's competitive business environment, where your customers are becoming increasingly less tolerant of mistakes. Given that, how much is it worth to you and your company to ensure smooth and reliable operations?*

Now more than ever, it's reassuring to have AudioDev as your partner. Our brand name CATS has achieved worldwide acceptance as the de-facto standard. It has achieved its position through high quality and measurement accuracy. Our new Go! testers are dedicated to process control and offer faster, more efficient and economical testing of large batches. Whether you need precision testing with CATS or fast, economical process control with Go! – you can rely on AudioDev for service, training and support in addition to state-of-the-art test equipment. It's what has made AudioDev the most trusted name in testing.



## CATS ANALYZERS

### DVD+R/RW STAMPER PRO

Stamper testing is an essential part of production control. It makes sure that problems can be avoided early on. The CATS DVD+R/RW Stamper Pro also measures stampers for premastered DVD media and is supplied with a removable compensation window and a high-quality stamper adapter which protects the stamper and ensures that it stays flat during measurements. It is based on the Pulstec SDP1000, a precision drive both optically and mechanically. Pre-defined, single-key test sequences are available for different testing strategies. Tests on recorded and unrecorded DVD+R and DVD+RW replicas are also possible to perform.

### DVD+R/RW PRO

The CATS DVD+R/RW Pro analyzer is designed to meet the most rigorous demands of a production environment, allowing measurements to be completed simply and efficiently. The CATS DVD+R/RW Pro measures recorded and unrecorded 4.7 GB DVD+R and DVD+RW discs and is based on the Pulstec SDP1000, a precision drive both optically and mechanically. It offers jitter measurements (data to data and data to clock), HF-signal parameters, Servo and Tracking parameters, Digital Errors (PI/PO) and +R/RW specific parameters. Pre-defined, single-key test sequences are available for different testing strategies.

### DVD-R/RW STAMPER PRO

Stamper testing is an essential part of production control. It makes sure that problems can be avoided early on. The CATS DVD-R/RW Stamper Pro also measures stampers for premastered DVD media and is supplied with a removable compensation window and a high-quality stamper adapter which protects the stamper and ensures that it stays flat during measurements. It is based on the Pulstec SDP1000, a precision drive both optically and mechanically. Pre-defined, single-key test sequences are available for different testing strategies. Tests on recorded and unrecorded DVD-R and DVD-RW replicas are also possible to perform.

### DVD-R/RW PRO

The CATS DVD-R/RW Pro analyzer is designed to meet the most rigorous demands of a production environment, allowing measurements to be completed simply and efficiently. The CATS DVD-R/RW Pro measures recorded and unrecorded 3.95 and 4.7 GB DVD-R and DVD-RW discs and is based on the Pulstec SDP1000, a precision drive both optically and mechanically. It offers jitter measurements (data to data and data to clock), HF-signal parameters, Servo and Tracking parameters, Digital Errors (PI/PO) and -R/RW specific parameters. Pre-defined, single-key test sequences are available for different testing strategies.

## GO! FOR PROCESS CONTROL

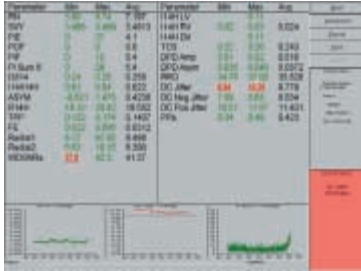
### DVD+1.2

Stability, repeatability, speed and easy-to-use, are keywords associated with the new Go! brand. Go! testers have a new compact design and can be stand-alone or network controlled. A one-player system does not need an extra PC, just a monitor, keyboard and mouse. For more information see our Go! DVD + 1.2 product leaflet.

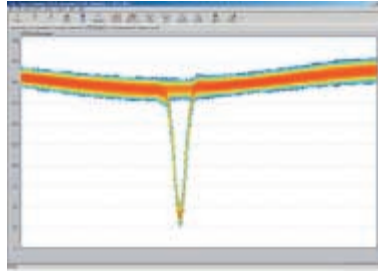


# PARAMETER OVERVIEW FOR CATS ANALYZERS

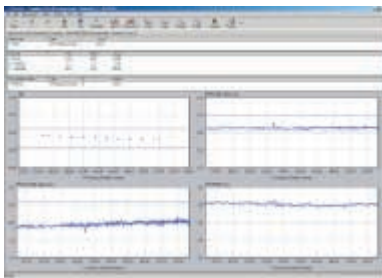
## TEST RESULTS



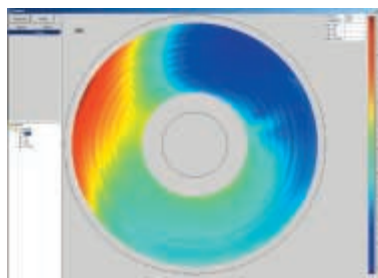
A recorded DVD-R viewed in Simple Mode



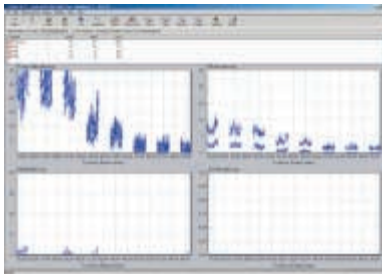
LPPb Histogram on a DVD-R disc



An unrecorded DVD+RW viewed in Advanced Mode



Data Surface Level on a DVD+RW disc



Direct Over Write on a DVD-RW disc

	DVD+R/RW Stamper Pro	DVD+R/RW Pro	DVD-R/RW Stamper Pro	DVD-R/RW Pro
Optical unit:	SDP1000	SDP1000	SDP1000	SDP1000
Specific calibration tools	KPR/KPW	KPR/KPW	KR/KW	KR/KW
General calibration tools	K5/K9	K5/K9	K5/K9	K5/K9
DVD+R Stampers	•			
DVD+R	•	•		
DVD+RW Stampers	•			
DVD+RW	•	•		
DVD-R Stampers			•	
DVD-R			•	•
DVD-RW Stampers			•	
DVD-RW			•	•
DVD Stampers	•		•	
Unbonded substrates	•		•	
DVD Single layer	•	•	•	•
DVD Dual layer	•	•	•	•

## PARAMETERS

As from software version 2.13

### BEFORE RECORDING

PPb	Radial Push Pull amplitude before recording
PPb DV	PPb Disc Variation
NWO	Normalized Wobble
WOSNRb	Wobble SNR before recording <sup>1)</sup>
WOBeat	Wobble Beat <sup>1)</sup>
Rb	Reflectivity before recording <sup>1)</sup>
ADERb	ADIP Errors before recording <sup>1)</sup>
TCSb	Track Crossing Signal before recording <sup>1)</sup>
LPPb	Land Pre-pit signal before recording <sup>2)</sup>
PWP	Phase Wobble Pre-pit <sup>2)</sup>
WOCNRb	Wobble CNR before recording <sup>2)</sup>
BLERb	Block Error Ratio before recording <sup>2)</sup>

### AFTER RECORDING

PPa	Radial Push Pull amplitude after recording
WOSNRa	Wobble SNR after recording <sup>1)</sup>
ADERa	ADIP Errors after recording <sup>1)</sup>
NSL	Normalized Slicing Level jump <sup>1)</sup>
AR	Aperture Ratio after recording <sup>2)</sup>
WOCNRa	Wobble CNR after recording <sup>2)</sup>
BLERa	Block Error Ratio after recording <sup>2)</sup>

### BEFORE AND AFTER RECORDING

PPr	Push Pull ratio
-----	-----------------

### AVAILABLE ON CONNECTORS

RPP	Radial Push Pull
SYN	Sync signal
DWB	Digital Wobble

In addition to these parameters

DVD+R/RW Pro, DVD+R/RW Stamper Pro, DVD-R/RW Pro, DVD-R/RW Stamper Pro can measure the following parameters:

### PHYSICAL FORMAT INFORMATION

Book type, Part version, Disc type, Disc size, Minimum read-out rate, Number of layers, Track path, Layer type, Linear density, Track density, Start sector, End sector, Region code.

### HF SIGNALS

R14H	Reflectivity
I3/I14	Resolution
I14/I14H	Modulation
I14H RV	I14H Revolution Variation
I14H LV	I14H Layer Variation
I14H DV	I14H Disc Variation
ASYM	Asymmetry
DOC	Drop-out counts
DOL	Drop-out lengths

### SERVO AND TRACKING

DPD Amp	DPD Amplitude
DPD Asym	DPD Asymmetry
FE	Focus Error
Rad 1	Radial 1
Rad 2	Radial 2
RN	Radial Noise
TPP	Tangential Push Pull
TCS	Track Crossing Signal
SVY	Scanning Velocity
SLT	Space Layer Thickness

### DIGITAL ERRORS

PIE	Parity Inner Errors
PIF	Parity Inner Fails
POF	Parity Outer Fail
PI Sum 8	Parity Inner Sum 8

### JITTER ANALYSIS

Data to clock jitter  
Data to clock histogram  
Data to data jitter  
Data to data histogram  
Tilt jitter  
Bottom jitter

### PHYSICAL MEASUREMENTS <sup>4)</sup>

IDIA	Inner Diameter of Information Area
STA	Start Diameter of TOC Area
IDDA	Inner Diameter of Data Area
ODDA	Outer Diameter of Data Area
ODIA	Outer Diameter of Information Area
RRO	Radial Run Out
RROA	Radial Run Out Average <sup>3)</sup>
LLO	Length of Lead Out area
LMA	Length of Middle area
DDA	Difference between Data areas
DIA	Differences between Information areas
TRP	Track Pitch

<sup>1)</sup> Measured by DVD+R/RW Pro and DVD+R/RW Stamper Pro only

<sup>2)</sup> Measured by DVD-R/RW Pro and DVD-R/RW Stamper Pro only

<sup>3)</sup> Measured by DVD+R/RW Pro and DVD-R/RW Pro only

<sup>4)</sup> For premastered DVD only

More parameters will be added in coming software versions. For example parameters for the embossed area and for physical measurements.

# THE CATS SYSTEM PLATFORM

*The CATS SA300 system is the solid base for all CATS SA300 analyzers. It also supports all existing SA3 analyzers. We are committed to matching the demands of the industry through continued system development and to provide outstanding technical support. That's the CATS philosophy.*

## ACCURACY, FLEXIBILITY AND EFFICIENCY

With a CATS analyzer you will get fast and reliable feedback on the quality of your products and processes. Our systems are built with the highest demands on measurement accuracy. They also have the ability to add supplementary analyzers and features to match new demands which gives you flexibility. Being able to do so without having to reinvest in base technology means cost efficiency.

## CUSTOMIZATION

AudioDev's systems can be configured to each manufacturer's specific needs. Tests such as complete test, partial test, quick test, split test and retest can be predefined or customized. All measurements are performed according to industry specifications. Parameter thresholds, both 'hard limits' and 'soft limits', can be defined for various optical formats or customer requirements. Test results are presented in real time and can be displayed in a variety of charts and graphs. Graph pages and printouts can be defined according to each manufacturer's preferences, letting you define your own presentation pages. The user interface can be set for in-depth analysis or for simple day-to-day operation. All test results can be saved in the library for future access and statistical purposes.

## SYSTEM CONFIGURATION

Each CATS system can be built with any combination of analyzers, up to eight for each CATS Host. CATS systems can be configured in a number of different ways, from floorstanding cabinets to compact desktop solutions. The operating system is Windows NT, which offers multiple levels of system configuration as well as stability.



## FEATURES

High measurement accuracy and repeatability allows you to optimize your process. You can benefit from a number of features such as:

- Real time testing and presentation of all parameters using numerical values, graphs and Surface Presentation.
- Single-key test sequences can be predefined to simplify everyday operations.
- Main window and simple summary for immediate overview.
- Customized test and presentation settings with auto scale and zoom function.
- Setting of the user interface for in-depth analysis or for simple day-to-day operation.
- Surface Presentation with unchallenged resolution of selected parameters, mapping signal variations over disc surface.

## FOCUS ON QUALITY

To achieve high measurement accuracy, the trademark of the CATS analyzers, the optical drive must perform according to our stringent specifications. Optical drives are selected exclusively for the CATS analyzers. They are also upgraded mechanically for stability and durability. With over 15 years of serving the industry with accurate and reliable test results, the CATS system has become the worldwide de facto standard for quality control of optical media.

## NETWORK CAPABILITIES

The CATS system platform can be integrated with different LAN-based information systems. The customer decides which protocol to use and what data to export. A CATS system connected to a network provides even more powerful features, such as sharing of test information between several CATS systems.

# OPTIONS

The CATS System Platform can be equipped or expanded with several additional options and features. There are configuration options for both floorstanding and desktop systems.

## PROCESSING UNIT

The Processing Unit (PU) is a central part of your SA300 system, providing power and communication to the drives and host computer. You have the option of choosing either a compact desktop PU or a floorstanding PU with minimum footprint, each supporting up to four analyzers.

## GENERAL OPTIONS

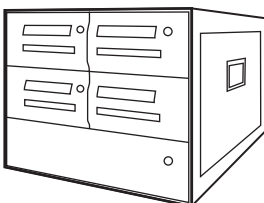
- RIS (Remote Information System). Be notified of the status of ongoing tests to a pager or PDA. Access the test system using a web browser.
- Hand-held barcode reader. For simple data input like batch number etc.
- Computer accessories

## QUALITY CONTROL SUPERVISION (QCS)

Sapphire QCS uses direct network interfaces with CATS systems to automatically store quality data on a central database-system. This ensures a continuous and accurate logging of quality data and permits plantwide availability of data and analysis information.

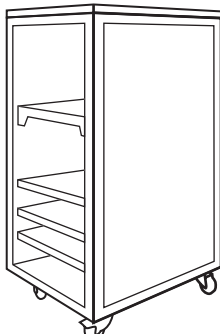
The system includes many statistical analysis features like process capability, standard deviation, histograms and variable control charts to identify variations and diagnose quality problems in the optical disc manufacturing process. The robust database environment and application software operate on a Windows NT/2000 platform.

**Desktop processing unit for up to 4 testers.**

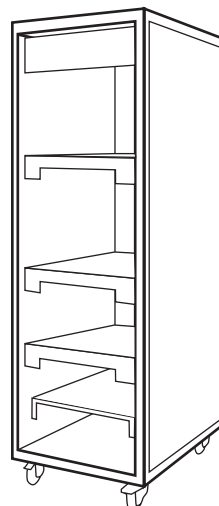


Height x Width x Depth  
approx. 17" x 20" x 26"  
(43 x 52 x 67 cm)

**Floorstanding cabinet for up to 4 testers.**



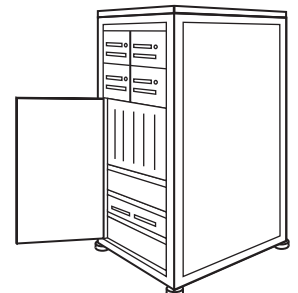
Height x Width x Depth  
approx. 53" x 24" x 31"  
(136 x 60 x 80 cm)



**Floorstanding cabinet for up to 8 testers.**

Height x Width x Depth  
approx. 76" x 24" x 31"  
(193 x 60 x 80 cm)

**Floorstanding processing unit for up to 4 testers**



Height x Width x Depth  
approx. 45" x 22" x 20"  
(114 x 55 x 50 cm)



# YOUR PARTNER IN QUALITY CONTROL

*AudioDev offers the knowledge, service and support that helps you prove your product. We are dedicated to measurement quality. We have contributed to the design of the calibration discs for DVD-Video/ROM, DVD-R/RW and DVD+R/RW (corresponding to CATS calibration discs K5, K9, KR, KW, KPR and KPW) and we work in close cooperation with partners such as Philips and companies within the DVD Forum.*

## SUPPORT AVAILABLE 24 HOURS

With our worldwide service network, there is always someone on call to help answer your questions. With our offices and global partners, we are available 24 hours a day. We offer next working day shipment of spare parts through logistics hubs of spare parts in Europe, USA and Asia.

## DVD GLOBAL SERVICE CONCEPT

We have obtained the knowledge and equipment to perform maintenance and repair on Pulstec drives. Drives can be repaired in Sweden or USA and soon also in Taiwan instead of being shipped to Japan, saving time, money and maximizing your production time.

## SYSTEM INSTALLATION

When we sell our analyzers, we ensure that they are installed at your premises to your satisfaction. AudioDev offers installation training to help you establish efficient quality control procedures. We leave you with training material for your continued benefit. We also offer Service On-Line, which means that our NT based CATS system platform is preconfigured to be remotely controlled. If we can't be there

for you in person, we can help you sufficiently on-line with trouble shooting and even software upgrades.

## TRAINING – KNOWLEDGE BY AUDIODEV

Share our knowledge and improve your business. Our Technology classes explain the complex manufacturing process in an easy way and offer a better understanding of the technical and quality aspects in optical media production. Classes can be tailored to new or experienced professionals throughout the industry. Our class evaluations tell us that customers rank our knowledge on the highest end of the scale.

## TEST CENTERS – A SIGN OF APPROVAL

Whenever you need an unbiased opinion of disc quality, you can contact us for in-depth research and analysis. We will describe problems, consequences and suggest solutions. AudioDev operates four Test Centers in the USA, Europe and Asia. With their help, we get important insights into new trends in optical media manufacturing that can influence our product development in a positive way.

# CONTACT US!

AND SEE WHAT WE CAN DO FOR  
YOUR PRODUCTS AND YOUR REPUTATION.

## AUDIODEV AB

Kabingatan 9  
212 39 Malmö  
Sweden  
Phone: +46 40 690 49 00  
Fax: +46 40 690 49 90  
Email: [sales@audiodev.com](mailto:sales@audiodev.com)

## AUDIODEV FAR EAST

Hong Kong Office  
Rm 607-608, 6/F, Hang Bong Comm. Ctr  
28-40 Shanghai Street, Kowloon  
Hong Kong  
Phone: +852 2314 8736  
Fax: +852 2314 4537

Taiwan Office  
1/F, 207 Cheng Te Road, Section 3  
Taipei, Taiwan 103  
R.O.C.  
Tel: +886 2 259 622 86  
Fax: +886 2 258 737 21

## AUDIODEV USA

6307 DeSoto Avenue, Suite J  
Woodland Hills, CA 91367  
USA  
Phone: +1 818 992 3200  
Fax: +1 818 992 4755