

TANDBERG

The Sound Investment

The Tandberg Story

Vebjørn Tandberg founded Tandbergs Radiotabrykk in 1933, determined to satisfy people's demand for better radio reception. Quite a challenge, as Norway's high mountains and deep fjords place extreme demands on the equipments' reception capabilities.

He was born in a small fishing village in northern Norway in 1904. After successfully confusing the Norwegian Coast Guard with the Morse transmitter he designed at the age of 13, Vebjørn Tandberg developed a great passion for radios, and decided to become an engineer.

His first product was a portable radio with an extraordinary sound quality. Sonic qualities were already then, and still are, of the utmost importance to the company.

Vebjørn Tandberg's designs were often highly unconventional, but proved to be superior. Instead of protecting his inventions by patents, he strongly believed there always was room for further improvements. Vebjørn Tandberg set his mind on continual new development.

The first "Huldra" radio was launched in 1934. This legendary radio was continually improved until the late 1970's.

The name comes from Norwegian folklore. The Huldra is said to be an irresistible woman, living inside the mountains.

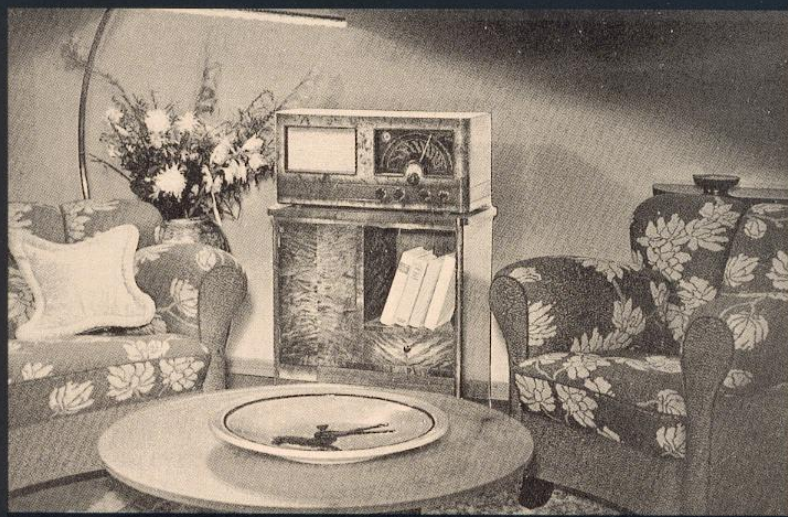
She would appear before lonely hikers; singing, dancing and dazzling men with her beauty.

If they did not cover their ears and close their eyes in time, they would be spellbound by her and trapped in the mountains forever. The Huldra reflects human striving for perfection and reaching for the unattainable.

After The Second World War, the "Huldra" and the equally successful "Sølvsuper", were to be found in a substantial number of Scandinavian households - many of them are still in daily use.

The first model reel-to-reel tape recorder was completed already in 1952 and exports started the year after. The high standard of the products formed the basis for exports. In the late 1950's Tandberg became recognised world wide for their reel-to-reel tape recorders and radio receivers, later also for their cassette decks and the high-end 3000 series.

The production of the 3000 series started in the late 1970's. A number of the products have achieved legendary status. The products in the line have of course been upgraded over the years, but they have maintained their market position. The 3001 FM tuner was first



The Sølvsuper: A typical Norwegian living room from the late 1930's, featuring the Tandberg Sølvsuper Model 1939.

The Company

launched in 1979 and is today regarded as one of the best tuners ever. Having been on the market a full 15 years, the 3000 Series has the longest life span of any product range in the business. A 3000 product from 1994 blends perfectly in with a product from 1979.

Most manufacturers tend to change their designs quite frequently. Usually this is perceived as a market necessity in order to generate new interest, rather than a genuine desire to provide a better product. The Tandberg tradition is engineering products for the future, but leaving the possibility to incorporate changes and upgrades without altering the design. The customer then has the advantage of being able to complete and upgrade the system over time, enhancing the joy of owning the products.

The 4000 Series is designed to incorporate possible future improvements such as interactive remote control and optical communication between the units.

Tandberg Radiofabrikks' continuous struggle for being the first and best with new inventions for better products gave results. Throughout the 1960's, production of language laboratories, computer terminals and televisions were new additions to the range and the company continued to expand. By the end of the 1970's, Tandberg was a fairly large enterprise with more than 3000 employees.

Today, Tandberg is split into 4 independent companies. Tandberg Data A/S is the largest of the four, and specialises in tape streamers, computer terminals and other computer related products. Tandberg Education A/S develops and produces language laboratories for educational purposes. Tandberg A/S produce satellite reception equipment and has also developed a picture telephone. Tandberg Audio Products A/S designs and manufactures high quality hi-fi products.

The Tandberg Numerology

The Tandberg hi-fi products have had a four digit model number for the last 20 years. The first digit tells you what Series the product belongs to.

The second digit has never been used. The intention was to differ between products with discreet components and products with hybrid circuitry. Tandberg chose to stick to discreet component circuitry.

The third digit relates to the price bracket. A "1" or a "2" shows that the product is a high-end product. A "3" to a "6" shows that it is an upper mid-fi to high-end product, mainly competing with high class American or European products in regards to sonic qualities. The last digit explains what kind of a product it is.

When the last digit is a "1" the product is a tuner. A "2" is always an integrated amplifier. A "3" will be a receiver. A cassette deck is recognized by a "4", and a CD-player by a "5". The power amplifiers have a "6" as their last digit, whilst the control amplifiers have an "8". The "9" is always a mono-block.

Do you wonder what happened to the "7"? Even Tandbergs' numerology is prepared for new technology.





Sverre Nord
R & D Coordinator



Tore Haug
Electronic Engineer



Eivind R. Larsen
Industrial Designer



Bob Andersen
Electronic Engineer

TANDBERG

The Tandberg 4000 series started out as a desire to make a unique hi-fi system. Unique in sound reproduction, design and operation. The design should clearly indicate its Norwegian heritage, using aluminium and solid wood. It should be stylish, clean and blend in anywhere. Special care was taken in regards to ergonomics, keeping it as simple as possible in use, but still sufficiently advanced to please even the most demanding user. It took a full five years of research and painstaking development to fulfil these goals.

Tandberg has always been at the forefront of new developments in the industry. Tandbergs' innovative ideas have resulted

in many breakthroughs. The latest being the remarkable new CD transport. Top load CD-players are often superior in their ability to retrieve information from the CD. They are usually fairly expensive and not very convenient in use. With this in mind Tandberg developed a CD transport with the top loaders advantage of dampening the vertical vibrations, combined with the convenience of the drawer mechanism.

Both the control and power amplifiers are true Zero Negative Feedback amplifiers. This gives a remarkably warm and realistic sound reproduction. Zero Negative Feedback allows a design without the need for stability compensation. This results in a higher slew-



4000 Series

rate compared to conventional designs and there is no internal circuit overload with normal use.

Eivin Rudberg Larsen gave the 4000 Series its timeless and-classical design. Thor Østhus engineered a cabinet to house all the various components. All products in the range use the same basic cabinet, resulting in few non-interchangeable parts.

All the Tandberg 4000 products are designed by our own research and development staff and are manufactured in Norway.

The Sound Investment

TANDBERG TIA 4062

Integrated Amplifier



After completing the basic electronic design of the 4062 integrated amplifier, it still took more than a year of continuous listening and alternations before the designer, Lars Ernestus, was completely satisfied with the sound. As a result, this fully remote controlled 2x50W amplifier, sets a new standard of performance, effortless power and refinement. Most integrated amplifiers combine a control and power amplification stage. The 4062 has a single gain stage for maximum transparency. Advanced circuit techniques and careful selection of parts, makes it possible to maintain and improve linearity and band-width. The 4062 integrated amplifier should satisfy every audiophile's need for versatility.

The Tandberg 4000 Series is available in black or champagne finish. Special care has been taken to ensure easy operation whilst giving the products their clean and stylish appearance.



Thor Østhus
Mechanic Engineer



Tom Helgesen
Electronic Engineer



Lars Ernestus
Electronic Engineer



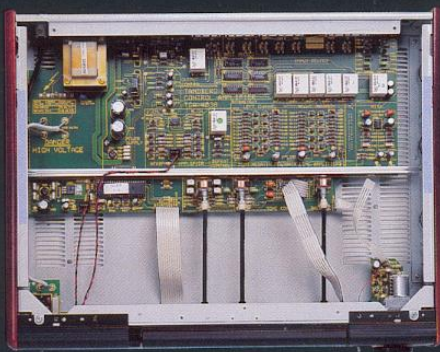
Are Leistad
Micro Code Programmer



Five years from i



TANDBERG TCA 4038 Control Amplifier



The Control Amplifier: The 4038 is extremely tidy, almost without any wiring. The phono stage is placed as far away as possible from the power supply.

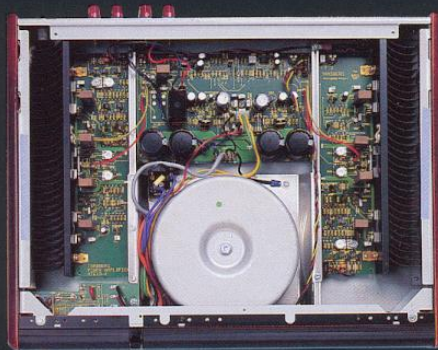
The Tandberg 4038 is designed by Bob Andersen. It is partly based on two Tandberg high-end control amplifiers, the acclaimed 3018A and the more recent 3028A.

The 4038 contains discreet Class-A circuitry for line level amplification. It also features separate listen and record selections and defeat for its bass and treble controls. The source selection is achieved by high quality relays, in conjunction with a micro-controller. This establishes a short signal path. Ease of use is provided with a remote control.

The 4038 delivers a remarkably open and richly detailed sound reproduction.



TANDBERG TPA 4036 Power Amplifier



The Power Amplifier: The 4036 is built as a dual mono amplifier sharing the same massive toroidal transformer. It also features two highly efficient heat sinks, one for each channel.

The Tandberg 4036 power amplifier is based on Jens Werner Werenkiolds' fabulous 3036A. The amplifier has been redesigned and enhanced by Tore Haug and Bob Andersen. The 4036 is equipped with a large toroidal transformer, ensuring power deliverance into relatively difficult speaker loads.

The amplifier has a Zero Negative Feedback design, with local error correction circuitry contained in the output stage. This results in very low distortion and a high wide-band damping factor.

Do not let the stylish design and modest size fool you, this is a full grown 100W per channel power amplifier!

Sea to perfection

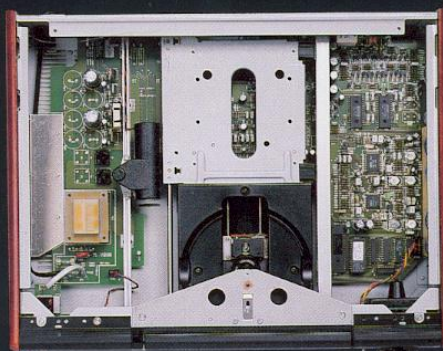


TANDBERG TCP 4035/4025 CD Players

The 4000 series features two CD-players, almost identical in mechanical design and functions. Both are "stackable top-loaders", combining the benefits from the top loaders often superior ability to subdue vibrations, with a drawer mechanisms functionality. The transport mechanism is a Tandberg design.

Both models share this transport that enables them to read CD's with fewer errors than a conventional CD-player. This gives a more detailed reproduction of music and results in exceptional sonic qualities. Tom Helgesens design features high quality Burr-Brown digital filters and digital to analogue converters.

The analogue circuitry is a discrete Class-A design, with selected low noise semiconductors. Are Leistads micro-controller software assures logical and easy operation from the unit or from the remote control.



The CD Players: Most high-end producers tend to use transports and microcodes from other manufacturers. Tandberg chose to design, from scratch, an uncompromising and complete CD-player for the 4000 Series. This picture shows the TCP 4035.

The 4025 has a more advanced power supply and analogue circuitry than the 4035. This gives even better data and sound reproduction.

The factory also adjusts the Most Significant Bit (MSB) on each and every 4025, thereby enabling the CD-player to reproduce the exact level of every sample set.



TANDBERG TPT 4031 Tuner

The 4031 tuner is based on the acknowledged 3031A tuner by Larry Schotz and Tore Haug. Bob Andersen has redesigned it for the 4000 Series.

The 4031 is a remote controlled digital tuner, offering a high degree of stability in combination with an easy to read and accurate LCD display. The tuner features 16 pre-set FM stations, stored in a non-volatile memory.

The 4031 front end employs digitally controlled tuned circuits. The first RF amplification stage uses dual gate MOSFET's. In conjunction with four tuned circuits, this design feature achieves stable accurate tuning, combined with good sensitivity and superior headroom. The audio circuits are high quality Class-A designs, not usually found in tuners. This enhances the FM listening experience.

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Creative Dissatisfaction

*I*t has been said that "creative dissatisfaction" created the Tandberg 3000 Series. In the late 1970's, there was limited knowledge linking electrical engineering

theory to sound quality. Tandberg initiated a major engineering effort in order to quantify and define these relations. This resulted in the 3000 Series.

When the series was introduced some 15 years ago, it represented a significant advance in the technology of sound reproduction. Audio magazines



3000 Series

throughout the world gave the products outstanding evaluations. The performance specifications were way above competing equipment.

The first product from this research was the legendary 3001 tuner. One and a half decades later, today's upgraded version is regarded by many as the best tuner on the market. The 3014 cassette deck from 1985, is considered one of the best cassette decks ever made. The TD 20A SE reel-to-reel tape deck is ranked at the top amongst professionals and music lovers who appreciate true analogue reproduction of sound.

Tandbergs' control and power amplifiers have a Zero Negative Feedback design. The result is a remarkably warm and natural sound reproduction. Purity, transient detail, openness, resolution and the imaging are extraordinary. The Tandberg ampli-

fiers share a common heritage of musical accuracy resulting not only from innovative circuit design and meticulous attention to engineering details, but also from continuous listening and a true love for music. The 3000 Series is one of the longest lasting hi-fi

series in the business. There have been additions and some products are discontinued, but the design and philosophy behind the series is still very much alive.

The Tandberg 3000 Series is designed and produced in Norway.

The Final Edition

TANDBERG TD 20A SE

Much of Tandbergs' reputation for quality was based on the unmatched performance of its tape decks. The TD 20A SE is a direct descendant of the products that made Tandberg a leader in the audio market and is the best and most advanced tape deck ever designed at Tandberg!

The TD 20A SE features a four motor transport system, micro-processor control operating system, Dyneq and Actilinear. Dyneq and Actilinear increase recording headroom whilst reducing noise and high frequency overload to a minimum. It has four input mic./line

mixing and Track Sync. Tandbergs unique Special Equalisation takes advantage of high output/low noise tapes by reducing the playback boost, thus diminishing tape hiss significantly and allowing up to 80 dB signal-to-noise ratio without noise reduction circuits.



The Tandberg TD20A SE: This two track high speed tape deck is a state of the art within tape decks.

The 3000 Series: The timeless industrial design of the 3000 Series makes the products still modern after more than 15 years on the market.

A Series of Living Legends

TANDBERG TCA 3028A Control Amplifier



The 3028A is based on the much acclaimed 3018A. The phono-stage is excluded, but an optional high quality MM or MM/MC phono-stage can easily be installed. The 3028A is fully remote controlled and has separate listen and record functions. The line

level inputs have a high overload capability. The special Zero Negative Feedback circuit topology results in data unheard of in regular production. The 3028A control amplifier gives a remarkable performance with enhanced focus and resolution combined with excellent dynamic contrast and clarity.

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TANDBERG TPA 3036A Mk II Control Amplifier



Years of experience with bi-polar technology is incorporated in the design of the 3036A MkII. The Zero Negative Feedback design, with local

error correction circuitry, greatly improves the amplifiers band-width and damping factor. The result is an exquisite openness and purity combined with accuracy and control. With the new toroidal transformer and high speed output stages, the MkII offers well above 100W per channel. The 3036A Mk II is a fast and accurate amplifier, rich in tonal texture and with a vast sense of depth.

TANDBERG TPA 3026A Power Amplifier



This 2x150W audiophile power amplifier offers a Zero Negative Feedback design, with high speed solid state power MOSFET's.

The 3026A voltage amplification stage is a high speed, high accuracy Transconductance amplifier in conjunction with a Transimpedance stage. The high current design guarantees superior performance even under the

most dynamic signal conditions.

The unique output stage error correction circuitry results in an extremely high

wide-band damping factor and a low distortion.

The 3026A protection circuitry continuously monitors temperature, current and voltage conditions. It disconnects the load if an irregular operating state should be detected.

The amplifier has an extremely well controlled bass, a highly detailed and accurate midrange and treble, hardly matched by other amplifier designs.

TANDBERG TPA 3016A Power Amplifier

The 3016A was designed to be a power source for arduous loudspeaker loads. This immensely powerful amplifier will drive speakers with extremely low efficiency or conventional speakers at extremely high volumes. To get maximum pleasure from your system, it is still important that you match amplifier and loudspeakers with care. This rock solid Dual-Mono

amplifier produces a massive 220W per channel with an 8 ohm load, doubling into 440W per channel at 4 ohms. It can actually give a pulse power of 2,5 kW per channel at 0,5 ohm! It has the same basic amplifier design as the 3026A, but with larger power supplies. Each channel has its' own power supply and 8 high voltage, high current MOSFET



power devices. This enables the amplifier to deliver in excess of 100 amperes to the load. Effortless power and innovative circuit design ensures true high-end reproduction of music.

TANDBERG TCP 3035A CD Player

This CD-player offers Tandbergs' "stackable top-loader" in the 3000 design, with the same transport as used in the 4035/4025.

It combines the benefits from the top loaders superior ability to subdue vibrations, with the

drawer mechanisms functionality.

The exceptional ability to reduce erroneous reading of CD's, has placed the 3035A in an elite of excellent transports, but at an affordable price. Although most often used in



conjunction with a D/A converter, the 3035A features a discrete Class-A analogue output stage, enabling high quality sound without the external D/A converter.

TANDBERG TPT 3031A Tuner

This fully remote controlled digital tuner offers a high degree of stability in combination with an easy to read and accurate LED display. The tuner utilises 4 tuned circuits to prevent mirror imaging and other out-of-band distortions. The tuner features a

high quality discrete audio stage with carefully selected components, not compromising the sound quality.

The 3031A has 16 pre-sets. The front end employs gauged, tuned circuits where DC voltage controlled capacitance



diodes are used as tuning elements. Dual gate MOSFETs are used in the RF stage. This achieves stable, accurate tuning and good sensitivity combined with superior headroom.

TANDBERG TPT 3001A Tuner

The 3001A offers extremely low distortion, an unprecedented signal to noise ratio of 92dB in stereo and overall performance specifications far above any competing tuner.

The 3001A uses a discrete MPX decoder to eliminate beat notes

and to increase audio quality. IF band-width is user adjustable in three ranges.

The 3001A features carefully chosen discrete components in all signal carrying stages. The result is superb selectivity, sensitivity and capture ratio



insuring the finest FM performance available. Although the 3001A is an analogue tuner, it has 8 pre-sets. FM becomes a viable high fidelity source.

TANDBERG TCD 3014A Cassette Deck

The remote controlled 3014A uses Dolby B and C NR processors.

Individual components are selected for ultimate parameters of noise, sound quality, low distortion, gain and stability. The 3014A uses Dyneq and Acti-linear II.

It features four servo controlled

motors in the tape transport system and a real time counter. Incorporated in the transport, is the Tandberg designed three-head system, Azimuth alignment for all tapes.

The headbridge uses the fourth motor to position it accurately with the tape.

To attain maximum musical



accuracy, it features phase compensation circuitry and ultra wide-band design to pass a signal with no audible degradation in sound or image.

Specifications

Control Amplifiers/Intergrated Amplifier

		TCA 4038	TCA 3038A	TCA 3028A	TIA 4062
Continous Power Output	RMS 8 ohm				2 x 50W
	RMS 4 ohm				2 x 80W
Peak Current					>10 A
Frequency Response (20 Hz - 20 kHz)		+ 0 dB/- 0.5 dB	+ 0 dB/- 0.5 dB	+ 0 dB/- 0.3 dB	+ 0 dB/- 0.1 dB
Frequency Range (0 dB/- 3 dB)		1.6 Hz - 1.25 MHz	1.6 Hz - 250 kHz	1.6 Hz - 1.5 MHz	2 Hz - 200 kHz
Wideband Damping Factor					>100
THD + Noise (1W/8 ohm 1 kHz)					0.01 %
THD + Noise (0.5V, 1 kHz, High Level Inputs)		0.006 %	0.04 %	0.005 %	0.01 % (Tape Out)
THD + Noise (0.5V, 1 kHz, Phono MM)		0.06 %	0.08 %		
Signal-to-Noise Ratio (1W/8 ohm, A-Weighted)					85 dB
Signal-to-Noise Ratio (0.5V, A-Weighted, High Level Inputs)		90 dB	85 dB	90 dB	90 dB (Tape Out)
Signal-to-Noise Ratio (0.5V, A-Weighted RIAA MM)		75 dB	75 dB		
Sensitivity (1W/8 ohm)					0.03V
Sensitivity RIAA (0.5V, 1 kHz)		1.2 mV	1.5 mV		
Sensitivity Line (0.5V)		90 mV	60 mV	80 mV	500 mV (Tape Out)
Power Requirements		115/230 +/- 10 %	115/230 +/- 10 %	115/230 +/- 10 %	115/230 +/- 10 %
Power Consumption		18W	35W	25W	50 - 250W
Dimensions (W x D x H mm)		464 x 380 x 76	435 x 350 x 83	435 x 350 x 89	464 x 380 x 76
Weight (kg)		6.0	4.9	5.7	8.0

Power Amplifiers

		TPA 4036	TPA 3036A Mk II	TPA 3026A	TPA 3016A
Continous Power Output	RMS 8 ohm	2 x 100W	2 x 100W	2 x 150W	2 x 220W
	RMS 4 ohm	2 x 160W	2 x 160W	2 x 220W	2 x 400W
Peak Current		30 A	30 A	45 A	>100 A
Frequency Response (20 Hz - 20 kHz)		+ 0 dB/- 0.1 dB	+ 0 dB/- 0.1 dB	+ 0 dB/- 0.1 dB	+ 0 dB/- 0.1 dB
Frequency Range (0 dB/- 3 dB)					
Wideband Damping Factor		>800	>800	>800	>400
THD + Noise (1W/8 ohm 1 kHz)		0.006 %	0.006 %	0.008 %	0.008 %
THD + Noise (0.5V, 1 kHz, High Level Inputs)					
THD + Noise (0.5V, 1 kHz, Phono MM)					
Signal-to-Noise Ratio (1W/8 ohm, A-Weighted)		90 dB	90 dB	96 dB	92 dB
Signal-to-Noise Ratio (0.5V, A-Weighted, High Level Inputs)					
Signal-to-Noise Ratio (0.5V, A-Weighted RIAA MM)					
Sensitivity (1W/8 ohm)		0.1V	0.1V	0.085V	0.085V
Sensitivity RIAA (0.5V, 1 kHz)					
Sensitivity Line (0.5V)					
Power Requirements		115/230 +/- 10%	115/230 +/- 10 %	115/230 +/- 10 %	115/230 +/- 10 %
Power Consumption		50-500W	50-500W	110-830W	220-2500W
Dimensions (W x D x H mm)		464 x 380 x 76	435 x 350 x 130	435 x 350 x 130	435 x 350 x 221
Weight (kg)		10.0	10.6	14.3	28.0

Cassette Deck

		TCD 3014A
Track		4 tracks/2 channels
Tape Speed		4.76 cm/sec.
Wow and Flutter (WRMS Play)		0.06 %
Distortion -250nW/m Dolby B NR		<1 % Metal
		<2 % Type II
		<1.5 % Type I
Frequency Response	Metal (20 dB)	18-23000 Hz +/- 1.5 dB
	Type II	18-20000 Hz +/- 1.5 dB
	Type I	18-20000 Hz +/- 1.5 dB
Signal-to-Noise Ratio (Metal Dolby C NR)		>74 dB
Input Impedance		150 Kohm
Input Sensitivity	Low	100 mV
	High	10 mV
Output Impedance		100 ohm
Output Level	Fixed	700 mV
	Variable	0-4V
Power Requirements		115/230V +/- 10 %
Power Consumption		50W
Dimensions (W x H x D mm)		435 x 166 x 350
Weight (kg)		9.8

Tape Deck

		TD 20A SE
Track		2 Tracks/2 Channels
Tape Speed		38-19 cm/sec.
Wow and Flutter	38 cm/sec. WRMS	0.03 %
	19 cm/sec.	0.05 %
Distortion	320 nWb/m	0.5 %
Frequency Response	38 cm/sec.	20-30000 Hz +/- 2 dB
	19 cm/sec.	20-25000 Hz +/- 2 dB
Signal-to-Noise Ratio	IEC A-Curve	80 dB
	IEC Lin. RMS	70 dB
Input Impedance	Mic.	800 ohm
	Line 1	150 Kohms
	Line 2	250 Kohms
Input Sensitivity	Mic.	0.2 mV - 20 mV
	Line 1	50 mV - 5V
	Line 2	50 mV - 5V
Output Impedance	Line	100 ohm
Output Level	Line	1.5V
Power Requirements		115/230V +/- 10 %
Power Consumption		110W
Dimensions (W x D x H mm)		435 x 450 x 195
Weight (kg)		17.0

CD-Players

	TCP 4035	TCP 4025	TCP 3035
Frequency Response (20 Hz - 20 kHz)	+/- 0.5 dB	+/- 0.1 dB	+/- 0.5 dB
Signal-to-Noise Ratio	100 dB	105 dB	105 dB
Dynamic Range	87 dB	90 dB	94 dB
Channel Separation at 1000 Hz	90 dB	93 dB	88 dB
THD + Noise (1 kHz)	0.01 %	0.004 %	0.007 %
Wow and Flutter	Quartz Crystal Precision	Quartz Crystal Precision	Quartz Crystal Precision
Error Correction System	CIRC	CIRC	CIRC
D/A Conversion	18 bit, 8 x oversampling	18 bit, 8 x oversampling	16 bit linear/channel
Line Output Level	Max. 1.5V at 0 dB	Max. 2V at 0 dB	Max. 1.8V RMS at 0 dB
Power Requirements	115/230V +/- 10%	115/230V +/- 10%	115/230V +/- 10%
Power Consumption	Max. 30W	Max. 30W	Max. 15W
Dimensions (W x D x H mm)	464 x 374 x 76	464 x 374 x 76	435 x 350 x 89
Weight (kg)	6.7	6.8	6.0

Tuners

		TPT 4031	TPT 3031A	TPT 3001A
Usable Sensitivity	Mono	1.1 μ V/75 ohm	1.1 μ V/75 ohm	0.8 μ V (6.8 dBf)
50 dB Quieting Sensitivity	Mono	2 μ V/75 ohm	2 μ V/75 ohm	0.9 μ V (10.3 dBf)
	Stereo	20 μ V/75 ohm	20 μ V/75 ohm	11.0 μ V (32.1 dBf)
Signal-to-Noise Ratio	Mono	82 dB	82 dB	95 dB
	Stereo	78 dB	78 dB	82 dB
Harmonic Distortion at 65 dBf (1 kHz)	Mono	0.15 %	0.15 %	0.06 %
	Stereo	0.15 %	0.15 %	0.05 %
Frequency Response 30-15000 Hz	Mono	+ 0.5 dB - 1 dB	+ 0.5 dB - 1 dB	+ 0.2 dB - 0.5 dB
	Stereo	+ 0.5 dB - 1 dB	+ 0.5 dB - 1 dB	+ 0.2 dB - 0.5 dB
Capture Ratio		1.0 dB	1.0 dB	1 dB
Alternate Channel Selectivity +/- 400 kHz		>100 dB	>100 dB	90 dB
Spurious Response Ratio		>90 dB	>90 dB	>135 dB
Stereo Separation	60-10000 Hz	>45 dB	>45 dB	
	100 Hz			60 dB
	1 kHz			60 dB
	6 kHz			50 dB
Subcarrier Product Ratio		70 dB	70 dB	95 dB
Power Requirements		115/230V +/- 10%	115/230V +/- 10 %	115/230V +/- 10 %
Power Consumption		20W	20W	34W
Dimensions (W x D x H mm)		435 x 350 x 83	435 x 350 x 83	435 x 350 x 83
Weight (kg)		4.9	4.9	7.0

Specifications and design subject to possible modification without notice. See Technical Papers for extensive product specifications.

TANDBERG TPA 3016A Power Amplifier

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insuring the finest FM performance available. Although the 3001A is an analogue tuner, it has 8 pre-sets. FM becomes a viable high fidelity source.

TANDBERG TCD 3014A Cassette Deck

The remote controlled 3014A uses Dolby B and C NR processors.

Individual components are selected for ultimate parameters of noise, sound quality, low distortion, gain and stability. The 3014A uses Dyneq and Actilinear II.

It features four servo controlled

motors in the tape transport system and a real time counter. Incorporated in the transport, is the Tandberg designed three-head system, Azimuth alignment for all tapes.

The headbridge uses the fourth motor to position it accurately with the tape.

To attain maximum musical



accuracy, it features phase compensation circuitry and ultra wide-band design to pass a signal with no audible degradation in sound or image.

Design & Production WAY OUT LAYOUT / Irl Carita Kolle

TANDBERG



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