

SANSUI AU/TU5900

Sansui Integrated Stereo Amplifier and FM/AM Tuner—
Perfectly Matched Components for Audio Connoisseurs.

Sansui



AU/TU-5900 A Tradition of Creative Engineering.

Sansui's AU/TU Series of stereo integrated amplifiers and stereo FM/AM tuners has received the highest praise, and has gathered the most devoted following of audiophiles, of any series of high fidelity components we have ever manufactured. Since its inception more than a decade ago, the AU/TU Series has always represented not only the latest and most advanced technical developments and applications in the industry, but also the finest in user-oriented conveniences and design innovations.

This tradition of creative engineering in audio is one that we at Sansui are proud of, and try to maintain at all costs. In the matter of costs, however, it is in your interests as well as in ours that much of the original audio research done at Sansui these days is divided between improving audio and electronic technology on the one hand while reducing costs and expenses – and ultimately the price of our finished products – on the other. Thus in components like the AU/TU-5900 introduced below we are able to offer what we feel is the best value in fine high fidelity equipment available today. From Sansui, where it's *all* hi-fi.

AU5900

PREAMPLIFIER SECTION

Phono Equalizer Precision: $\pm 0.3\text{dB}$ RIAA

The NF-type phono equalizer features a differential amplifier in its initial stage to ensure better DC balance. A high phono overload capacity of 250mV RMS (1kHz) is attained by the application of a high plus/minus voltage to the equalizer circuit. Deviation from the standard RIAA equalization curve is a low $\pm 0.3\text{dB}$ over the 30Hz to 15kHz range.

Two-Deck Tape Play/Dubbing Convenience

There are provisions for the connection of

two stereo tape decks and a monitoring switch to let you play tapes on either. You may also record through the AU-5900 into either or both, and dub or copy tapes from either to the other at the touch of a switch.

Sansui's Versatile Triple Tone Control

Sansui was first to offer a convenient Midrange control in addition to conventional Bass and Treble. In the AU-5900 the Triple Tone Control circuit employs a NF-type design with precision CR elements to make smooth and more natural response possible under all conditions.

The Midrange control permits you to exercise subtle control over the all-important midrange frequencies where the fundamentals of all musical instruments (including the human voice) are found. Adjustments in steps at 1,500Hz are possible.

All three controls are provided with detent (click-stop) type knobs for accuracy and convenience.

Low/High Filters

The low filter of the AU-5900 has a 70Hz cut-off frequency with a 6dB/oct. slope to eliminate motor rumble and noise caused by warped records, etc. The high filter has a 7kHz cut-off frequency with a 6dB/oct. slope to eliminate tape hiss and other high-frequency noise.

Tone Defeat Switch

The simple-to-use switch is used to defeat (cancel) all adjustments made on the Triple Tone Controls instantly. Use it to obtain a completely flat and uncolored response.

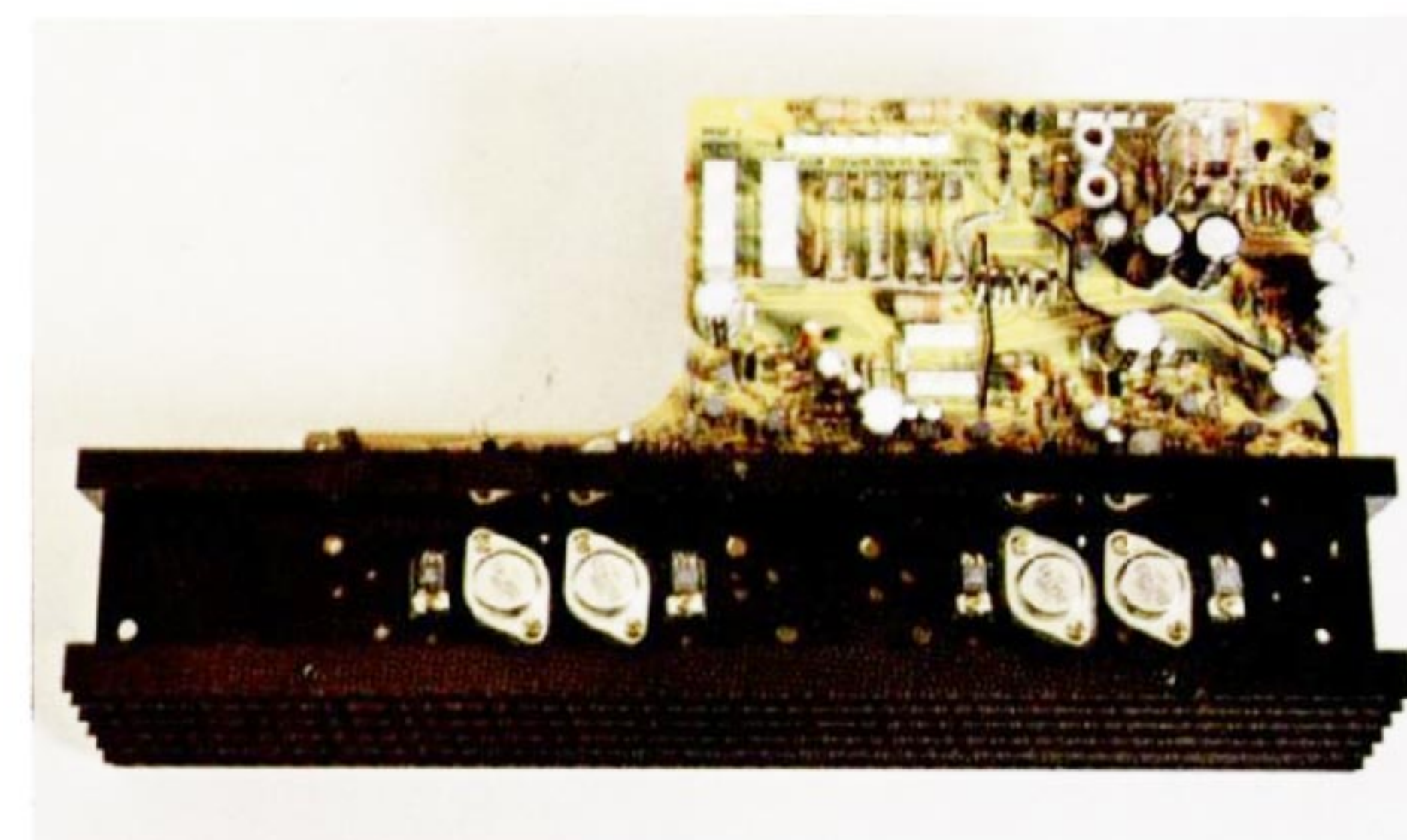
POWER AMPLIFIER & PROTECTION SECTIONS

Direct-Coupled True Complementary OCL Output

The powerful output section in the AU-5900 features the highly reputed direct-coupled true complementary push-pull OCL circuit with its initial stage built around a dual-transistor differential amp. The driver stage is an active-loaded circuit in a 3-stage Darlington-connected pattern. Since the pre-driver stage has a separate power supply, independent of

the one used in the power output stage, linearity is improved, resulting in reduced non-linear distortion against transient signals. Jumbo heat sinks and careful designing aid the dissipation of heat and increase efficiency.

The rock steady, continuous power output of the AU-5900 is 45 watts per channel, min. RMS, both channels driven into 8 ohms, from 20Hz to 20kHz, with no more than 0.1% total harmonic distortion.



Dual Power Supply

The AU-5900 has a power supply consisting of a large power transformer of excellent regulation performance, plus two big 10,000 μF capacitors. This makes it possible to provide a closely-regulated power supply to all major blocks in the superior plus/minus form to boost stability in the face of any load however heavy.

Also, the preamplifier and power driver sections each have an independent power supply, fed by the constant-voltage circuit. Thus no interference by the power output is seen in the preamplifier section.

Triple Power Protection

Connected speakers and the power transistors of the power output stage are fully protected in three ways: (1) a DC voltage detection circuit, (2) a transistorized ASO detection circuit, and (3) a self-restoring temperature detection circuit.

ADDITIONAL TOP-CLASS FEATURES

- SEPARABLE CONTROL/POWER SWITCH
- PHONO-1 CIRCUIT – has selectable



impedance of 30, 50 or 100k ohms to best match the impedance of the cartridge you use.

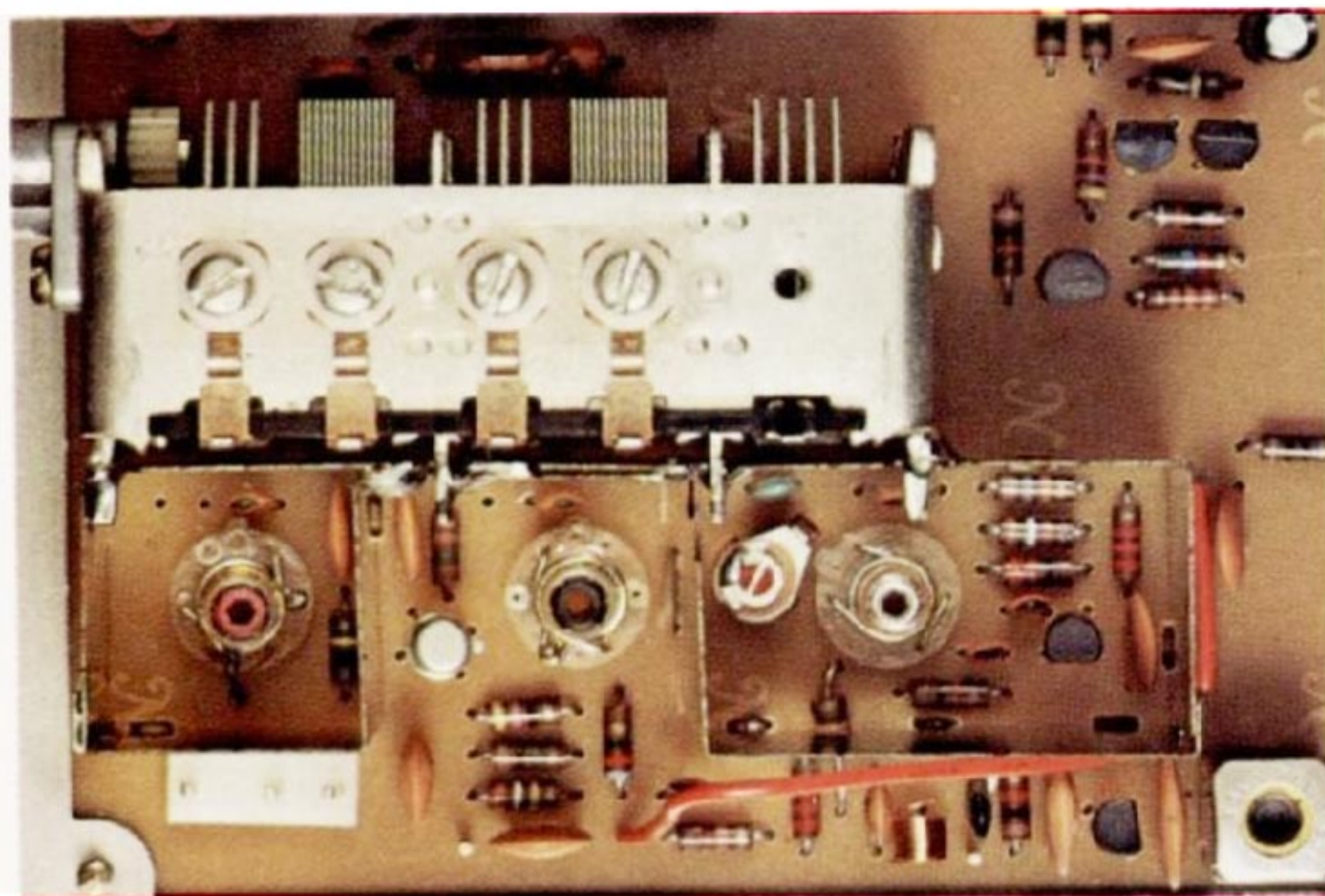
- **LOUDNESS SWITCH**—use during low-level listening.
- **MUTING SWITCH**—overall volume is reduced by 20dB instantly.
- **LED POWER-ON INDICATOR**—Light-Emitting Diode never fails.
- **ATTRACTIVE PANEL**—black alumite with hairline finish and permanently etched lettering.

TU5900

FM TUNER SECTION

Maximum Sensitivity in FM Frontend

Several features in the FM frontend make it one of the most sensitive of all tuners. For instance, the low-noise dual-gated MOS FET amplifier. And a precision 3-gang frequency-linear tuning capacitor. They combine to assure a maximum FM sensitivity of $1.8\mu\text{V}$ (IHF T-100) and effective rejection of interference.



FM Linear-Phase IF

Selectivity is another major factor. In the TU-5900 it's a high 60dB thanks to the use of three linear-phase bi-resonators in the FM IF section. An IC limiter achieves stable

reception and a high signal-to-noise ratio. The discriminator circuit uses a wide-band quadrature detector to drastically reduce distortion.

PLL IC in Stereo Demodulator

Sansui has developed a remarkable MPX stereo demodulator circuit, using a PLL (Phase-Locked Loop) IC. It delivers wide and clean stereo separation performance that will be maintained over years of use since the PLL shows an excellent resistance to aging.

FM Muting Circuit in IC

Unlike conventional tuners, the TU-5900 has an IC-built FM muting circuit operating from the center voltage of the discriminator, not from the signal-strength meter circuit. All signals distorted above a certain level are cut, regardless of meter reading.

AM TUNER SECTION

The high-integration IC used in the AM tuner section is the equivalent of 22 transistors and 11 diodes. Coupled with one RF amplifier it offers increased sensitivity. The use of a bi-resonator Jaumann ceramic filter and the stability of the IC itself assures low-distortion AM sound always.

VERSATILE CONTROL SECTION

Frequency-Linear FM/AM Dial

FM tuning is easy thanks to the wide, frequency-linear dial scale, evenly graduated in FM 250kHz calibrations, to make station selection less of a chore even in FM-crowded areas. An oversized, high-inertia flywheel, a large tuning knob, and a back-tension spring mechanism for quick and smooth station selection. The dial panel itself is slanted to provide easy reading. As a bonus, even the AM dial is frequency linear.

Twin Tuning Meters

The signal strength meter responds linearly

to the strength of incoming signals and is never saturated ("fooled") by weak signals. The second meter on the front panel is a center-of-tune meter for positioning FM tuning with minimum distortion and maximum stereo separation.

Antenna Input Attenuator

The antenna input attenuator, switched on the front panel, reduces the amplifier gain by 20dB to an optimum input level, so that clear FM reception is provided even in areas where signal strengths are excessive and could cause distortion.

Output Level Control

Also located up front, this control makes it easy to adjust the output level of the tuner.

MPX Noise Canceller

When activated, the built-in MPX (multiplex) noise canceller circuit eliminates the noise often heard in fringe areas or when listening to weak-signal stations.

Dolby FM Terminal

The TU-5900 has a de-emphasis of $25\mu\text{s}$ to allow you to get the best results from Dolbyized FM broadcasts by connecting an outboard Dolby noise reduction unit.

Discriminator Output for Discrete 4-Channel

When FM 4-channel discrete becomes available, the special discriminator output jack is ready to connect the adaptor required.

ADDITIONAL TUNER FEATURES

- **CONSTANT-VOLTAGE POWER SUPPLY**—feeds all stages for precise and stable operation.
- **UNIVERSAL FM DE-EMPHASIS**—ideal FM reception anywhere in the world with $50\mu\text{s}/75\mu\text{s}$ FM de-emphasis.
- **ATTRACTIVE FRONT PANEL**—etched lettering, user-oriented knobs and controls and easy-to-clean black alumite panel with hairline finish and quality trim.



SPECIFICATIONS

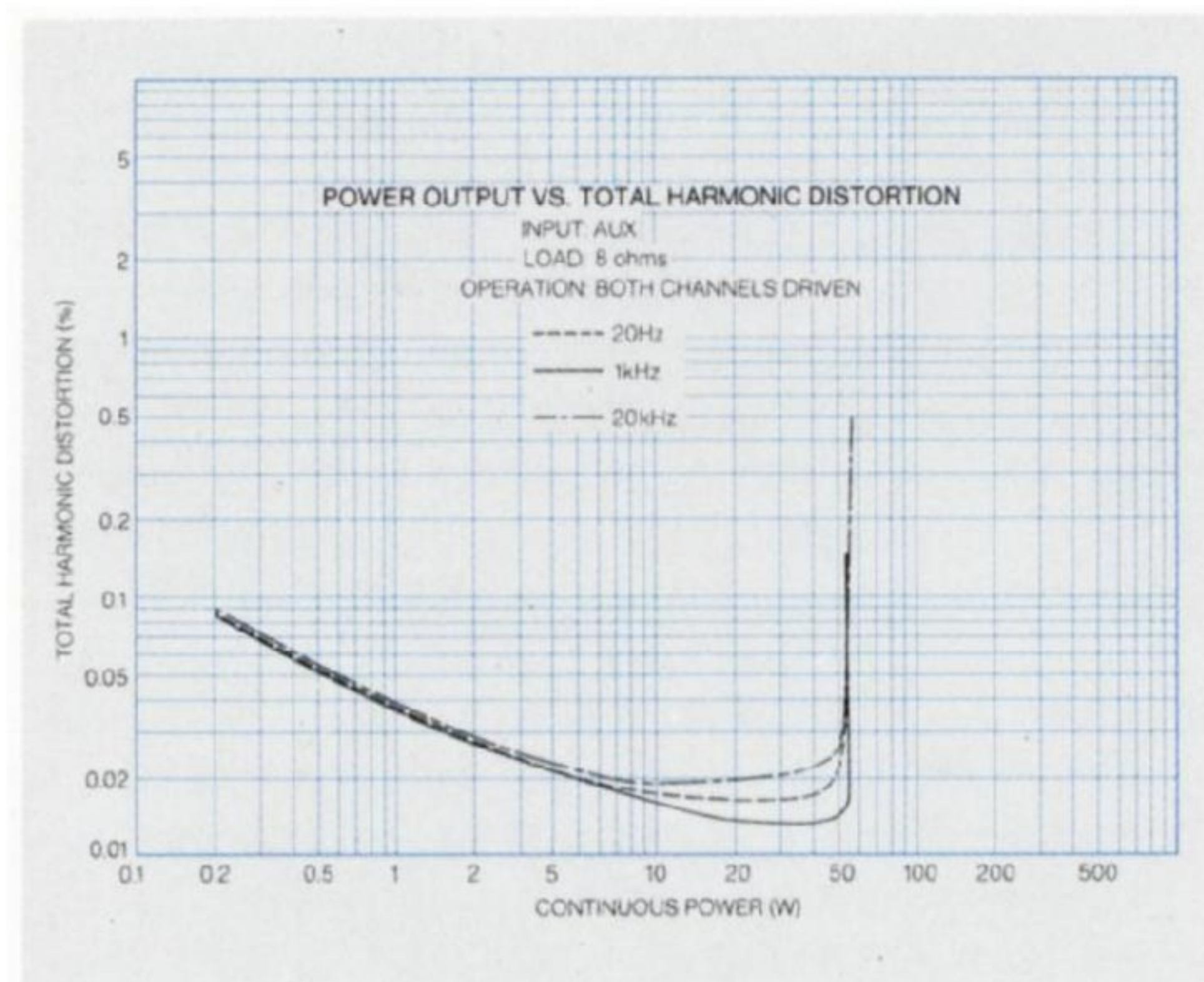
AU-5900 AUDIO SECTION POWER OUTPUT

Min. RMS, both channels driven, from 20 to 20,000Hz, with no more than 0.1% total harmonic distortion

45 watts per channel into 4 and 8 ohms

POWER BANDWIDTH

20 to 20,000Hz at or below rated min RMS power output and total harmonic distortion



TOTAL HARMONIC DISTORTION

OVERALL (from AUX) less than 0.1% at or below rated min. RMS power output

INTERMODULATION DISTORTION

(70Hz:7,000Hz = 4:1 SMPTE METHOD)
OVERALL (from AUX) less than 0.1% at rated RMS power output

LOAD IMPEDANCE

Speaker switch at A,B position 4.8 ohms
Speaker switch at A+B position 8 ohms

FREQUENCY RESPONSE (at 1 watt)

OVERALL (AUX to power output)
10 to 50,000Hz,
+0dB, -1.5dB

POWER AMPLIFIER ONLY

10 to 60,000Hz, +0dB, -1dB

RIIA CURVE DEVIATION (PHONO)

30 to 15,000Hz,
+0.3dB, -0.3dB

DAMPING FACTOR

approximately 80 at 8 ohm load

CHANNEL SEPARATION (at rated output 1,000Hz)

PHONO-1, 2 better than 50dB
AUX-1, 2 better than 55dB
TUNER better than 55dB
TAPE-1, 2 better than 55dB
POWER AMPLIFIER ONLY better than 60dB

HUM AND NOISE (IHF)

PHONO-1, 2 better than 75dB
AUX-1, 2 better than 90dB
TUNER better than 90dB
TAPE-1, 2 better than 90dB
POWER AMPLIFIER ONLY better than 100dB

INPUT SENSITIVITY AND IMPEDANCE

(1,000Hz for rated output)
PHONO-1 2.5mV, 30k ohms, 50k ohms and 100k ohms
PHONO-2 2.5mV 50k ohms
AUX-1, 2 130mV, 50k ohms
TUNER 130mV, 50k ohms
TAPE-1, 2 (PIN) 130mV, 50k ohms
TAPE-1 (DIN) 130mV
MAIN-IN 700mV, 50k ohms

MAX. INPUT CAPABILITY

(at 1,000Hz 0.1% total harmonic distortion)
PHONO-1, 2 250mV RMS

PREAMPLIFIER OUTPUT

RECORDING OUTPUT

TAPE-1, 2 (PIN) 130mV
TAPE-1 (DIN) 30mV



CONTROLS

BASS +13dB, -13dB at 50Hz
MIDRANGE +5dB, -5dB at 1,500Hz
TREBLE +13dB, -13dB at 15,000Hz
LOUDNESS FILTERS +10dB at 50Hz, +8dB at 10kHz
LOW -3dB at 70Hz (6dB/oct.)
HIGH -3dB at 7kHz (6dB/oct.)
MUTING 0dB, -20dB

GENERAL

AC OUTLETS

switched max. 100 watts
unswitched total 250 watts

SEMICONDUCTORS

45 Transistors; 2 ICs;
19 Diodes; 3 Zener Diodes;
1 LED

POWER REQUIREMENTS

POWER VOLTAGE 100, 120, 220, 240 50/60Hz
POWER CONSUMPTION

300 watts (362VA) (max.)
106 watts (rated)

DIMENSIONS

430mm (16 1/8") W
132mm (5 1/4") H
312mm (12 5/16") D

WEIGHT

11.5kg (25.4 lbs) net
13.2kg (29.1 lbs) packed

TU-5900

FM SECTION

TUNING RANGE

88 to 108MHz

SENSITIVITY (IHF)

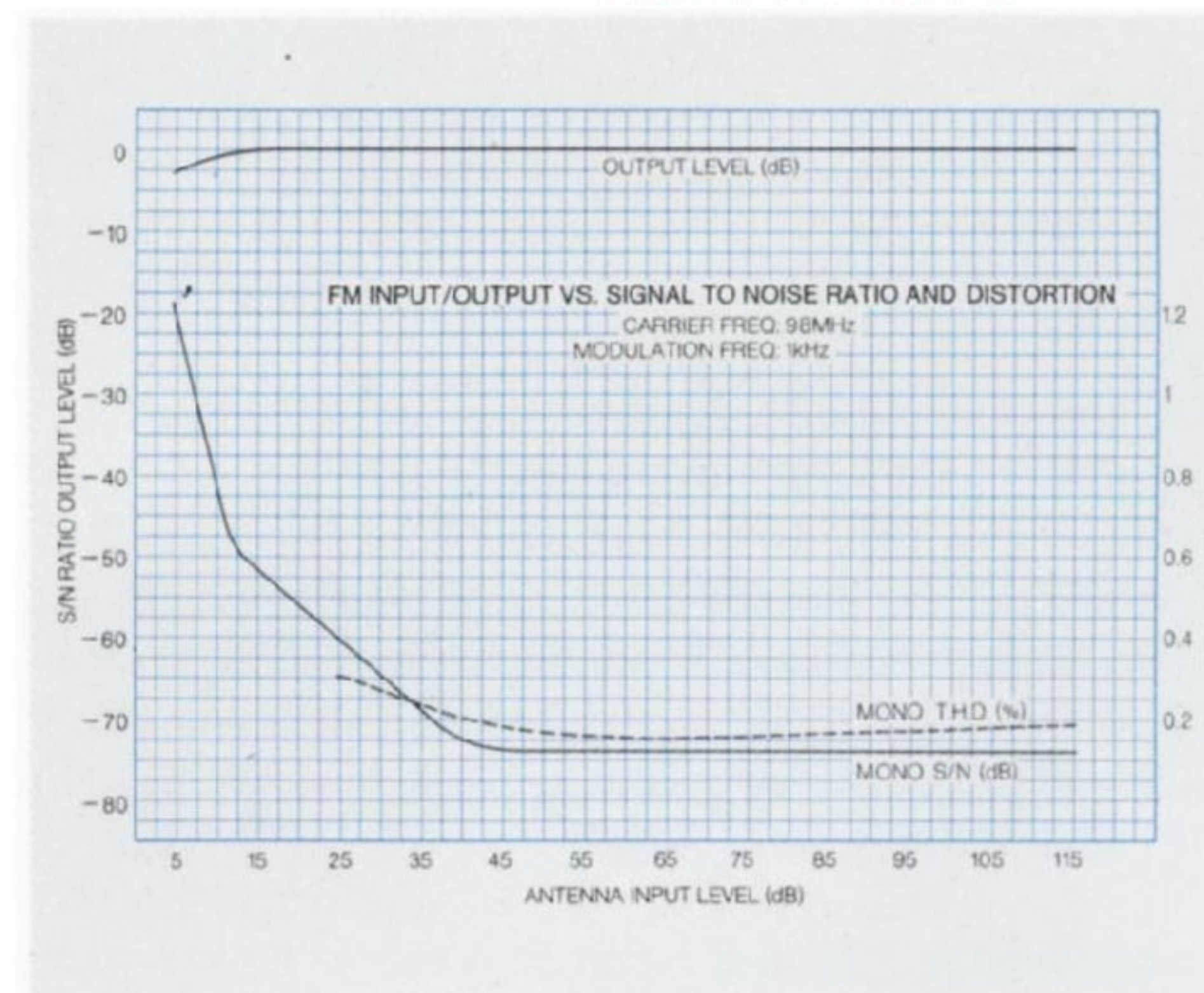
10.3dBf (1.8μV IHF T-100)

(DIN)

1.0μV
(1kHz, MD 30%, S/N 26dB)

MAX. INPUT CAPABILITY

more than 125dBf



50dB QUIETING SENSITIVITY

MONO (IHF) 16dBf (3.5μV IHF T-100)
STEREO (IHF) 38dBf (45μV IHF T-100)

TOTAL HARMONIC DISTORTION

MONO less than 0.25% at 1,000Hz
STEREO less than 0.35% at 1,000Hz

SIGNAL TO NOISE RATIO

MONO better than 70dB
STEREO better than 60dB

ALTERNATE CHANNEL SELECTIVITY

better than 60dB at ±400kHz
less than 2.0dB

CAPTURE RATIO

AM SUPPRESSION

IMAGE RESPONSE RATIO (IHF)

better than 50dB at 98MHz

IF RESPONSE RATIO (IHF)

better than 75dB at 98MHz

SUPRIOR RESPONSE RATIO (IHF)

better than 65dB at 98MHz

SPURIOUS RADIATION

STEREO SEPARATION (IHF)

better than 30dB at 100Hz
better than 40dB at 1,000Hz
better than 30dB at 10kHz

FREQUENCY RESPONSE (IHF)

30 to 15,000Hz,
+1.0dB, -2.0dB

ANTENNA IMPEDANCE

300 ohms balanced
75 ohms unbalanced

FM ANTENNA ATTENUATOR

AM SECTION

TUNING RANGE

535 to 1,605kHz

SENSITIVITY (BAR ANTENNA)

50dB/m at 1,000kHz

SELECTIVITY (±10kHz)

better than 30dB at 1,000kHz

IMAGE RESPONSE RATIO

better than 30dB at 1,000kHz
better than 30dB at 1,000kHz

IF RESPONSE RATIO

OUTPUT 0 - 777mV at FM MOD 100%
DOLBY FM OUTPUT 200mV at FM MOD 100%

GENERAL

AC OUTLET

unswitched total 150 watts
15 Transistors; 1 FET;
3 ICs; 1 Zener Diode;
1 LED

POWER REQUIREMENTS

POWER VOLTAGE 100, 120, 220, 240V 50/60Hz
POWER CONSUMPTION 18 watts

DIMENSIONS

430mm (16 1/8") W
132mm (5 1/4") H
243mm (9 5/8") D

WEIGHT

6.4kg (14.1 lbs) net
7.5kg (16.5 lbs) packed

●No AC outlet is provided on the model sold in Europe

●The legend "IHF" appearing in the specifications indicates the new Institute of High Fidelity standard, IHF-T-200, established on June 13, 1975, unless otherwise specified.

●Design and specifications subject to change without notice for improvements.