

Technics

SL-P1200

Compact Disc Player



New Authority in CD Reproduction — A Reference Compact Disc Player is Born

As technology advances, so does our ability to derive extra performance from the compact disc format. In the case of the SL-P1200, technical innovations bring you impeccable fidelity balanced with a new comfort in the man-machine interface. For those who can ascertain the sonic difference, the SL-P1200 incorporates such Technics developments as the FF1 laser pickup, High Resolution Digital Filter, and Class AA circuitry. Providing a uniquely styled "front-end," the analog-like user interface promotes positive intuitive control that professionals will appreciate.

Structural features isolate and damp vibrations while promoting reliable operation in high sound pressure environments like discos and public areas.

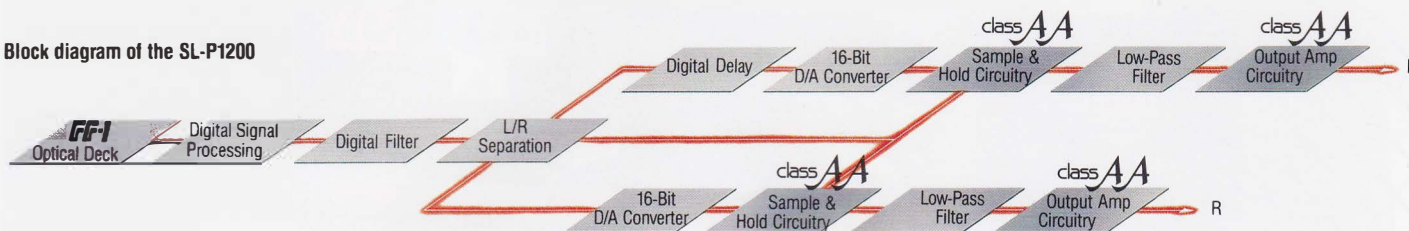
Now the world's foremost turntable manufacturer makes the world's most authoritative CD player, the SL-P1200 reference model from Technics.





Technology in the Service of Sound Quality

Block diagram of the SL-P1200



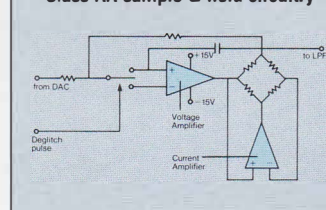
Newly Developed Twin Class AA Circuitry

Technics invented the class AA circuit to isolate the voltage control function from the current supply function of an amplifier circuit. Class AA is featured in Technics high-end amplifiers where it provides pure class A conditions of amplification while avoiding the influence of the speaker load impedance upon the performance of the voltage amp circuitry. In the SL-P1200 Technics invests CD reproduction with these same low-distortion benefits. Class AA goes to work in the CD player's sample and hold circuit and in the buffer amp, contributing astounding transparency to the reproduced sound. The sample and hold circuit is located downstream of the D/A converter where it removes switching noise from the signal. Here class AA is used to isolate the voltage control amp, which transfers the waveform, from the current drive amp which charges and discharges the capacitive load. Freed from this load, the voltage amp is able to transfer the high density data of the CD format to later circuit stages with much greater accuracy. Likewise in the buffer amp prior to the CD player's audio output, class AA isolates the voltage control amp from the preamp and the capacitive load it sees in the connection cables. Stability and waveform fidelity are achieved.

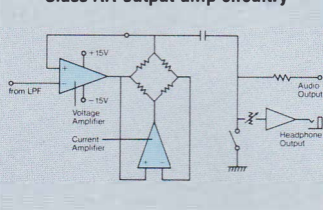
Dual High-Speed D/A Converter

With a completely separate DAC (D/A Converter) for each channel, the SL-P1200 performs truly simultaneous digital-to-analog conversion. This avoids the need for compensation circuitry and enables the highest phase accuracy — apparent in the steadiness and accuracy of the stereo sound stage. Thanks to class AA circuitry,

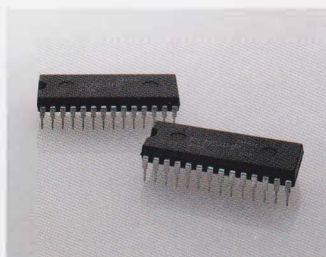
Class AA sample & hold circuitry



Class AA output amp circuitry



converter output is in the current mode with the sample and hold circuitry performing current-to-voltage conversion and eliminating the need for a whole stage of amplification. The sonic implications are enormous. Since DAC settling time for voltage output is about 3 microseconds and for current output is about 300 nanoseconds, there is a 10-to-one speed advantage to the latter, translating into stupendous resolution of musical detail.



High Resolution Digital Filter

For digital filtering, the SL-P1200 employs a newly developed 96th order FIR double oversampling circuit on an LSI (MN6618A) chip. Coupled with a 7th order high precision analog filter, this comprises the Technics High Resolution Digital Filter configuration. Its exceptional phase and frequency response, and low distortion within the audio band will be appreciated by the experienced audio professional and audiophile. Together with the class AA sample and hold circuit, this makes for virtually ideal class A operation in all stages of the audio circuitry.



Digital/Analog Separate Power Supply System

To avoid the danger of digital and servo circuit signal interference, the SL-P1200 has all of its audio circuitry, including the power supply, in a separate circuit block. Completely independent transformers are used for the digital and analog audio sectors. Moreover, the audio circuitry uses separate transformer windings for the left and right stereo channels and for the headphone amp, each having its own rectifier and stabilized power supply circuits to boot. This effectively shuts out interference which tends to creep in via the power supply circuitry. The rectifier circuitry features four 3300 μ F audio purpose capacitors while the sample and hold circuit employs a double regulator configuration for improved signal-to-noise specs.

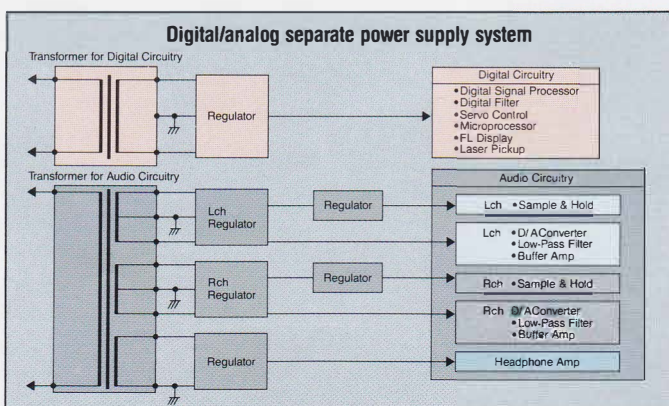
Serial Transfer of Digital Data

Dropping the usual 32-bit (for stereo) parallel data interface, the SL-P1200 opts for high speed serial

transfer, a powerful defence against pulsive digital interference in the analog music signal region. Instead of 32 lines there is only one signal carrier needed for serial transmission. A new dedicated LSI on the audio circuit board receives this serial data, blocking out spurious digital components. Unlike parallel data, the serial format bears almost no relation to an audio music signal, a benefit you can hear in the liquid clarity and absence of noise in the reproduced sound.

Strictly Selected Audio Circuit Parts

Technics not only stresses the measurable specifications of circuit elements, they also insist on listening to how the parts sound under real conditions of use. Notable are the copper foil styrol capacitors and fine ceramic particle audio purpose electrolytic capacitors used extravagantly for their contribution to high range resolution. The low pass filters feature modular construction with all parts including the printed circuitry on the ceramic boards having to pass auditory inspection. On top of all this, the left and right channel parts are laid out independently to retard crosstalk.

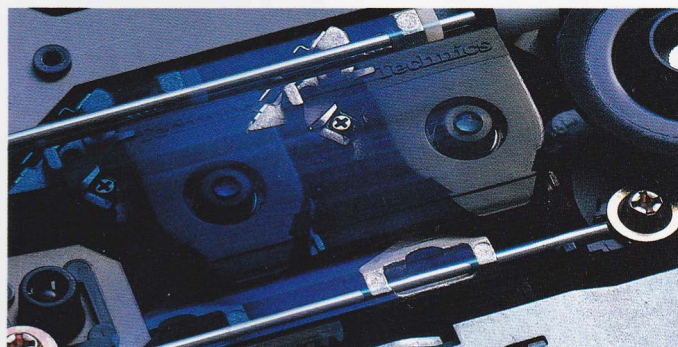




FF1 Fine Focus Single Beam System

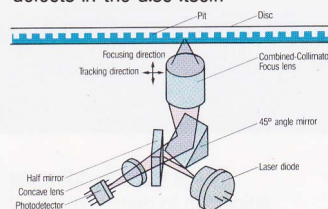
Of the many reasons for this CD player's sonic excellence, we should pay particular attention to its newly developed laser pickup. This FF1

Fine Focus Single Beam System with its Digital Accu-Servo System uses the laser beam more efficiently than 3-beam systems, thereby raising the S/N ratio. In this original Technics system the astigmatic characteristics of the plate type half mirror are used for focusing while tracking error is detected as the Together with the advanced error



correction algorithm and accurate brushless DD spindle motor, the FF1 phase component of pit modulation of amplitude. The pickup's CCF (Combined Collimator Focus) lens reduces size while enhancing optical performance. This lens is supported by a Friction-Free 4-Wire Suspension (using four special metallic wires). helps raise playability for

consistently excellent CD reproduction that overcomes impediments like scratches, fingerprints, and defects in the disc itself.



Thorough Vibration Isolation and Resonance Damping

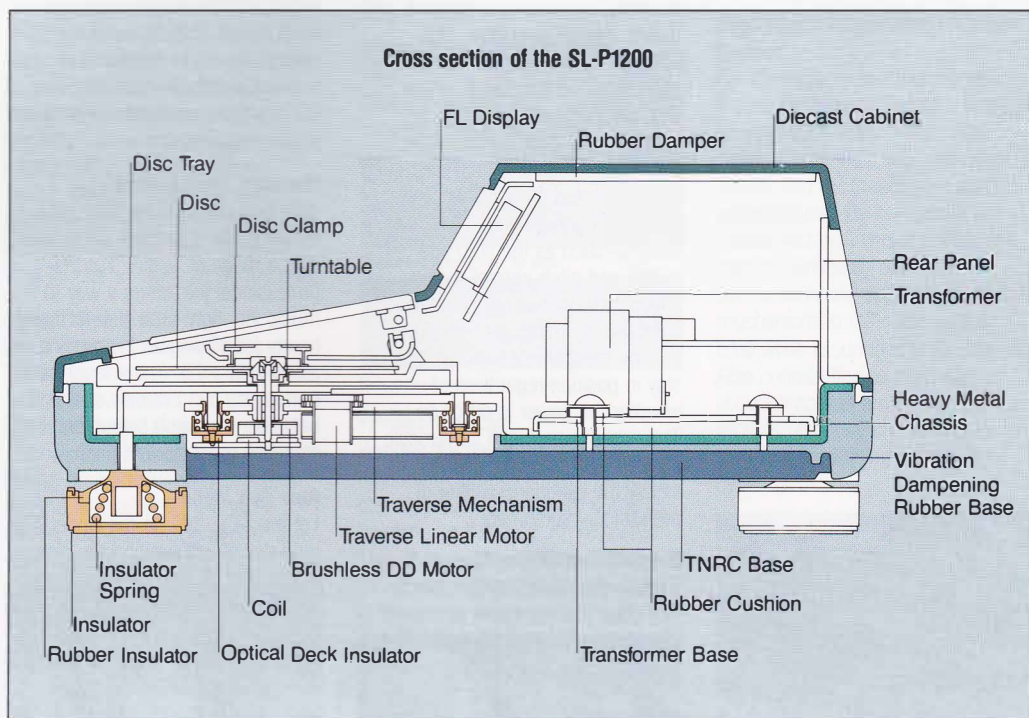
A CD player is exposed to vibrations originating outside and inside its cabinet. We can further classify external vibrations according to those transmitted structurally, through the support on which the player rests, and those that come through the air, mostly from the speakers. As the world's foremost turntable manufacturer, Technics knows how to manage these threats to fidelity.

Tri-Layer Base Construction

To arrest airborne vibrations, the base uses a metal chassis with special damping rubber, and TNRC (Technics Non-Resonant Compound). This combination of unlike materials converts vibrations into thermal energy while providing solidity and strength, without causing secondary excitations. The cabinet features rugged zinc diecast one-piece construction with vibration damping material between it and the tri-layer base. In these laser interferometry photographs you can see the difference.

Double Insulation Blocks Structural Vibrations

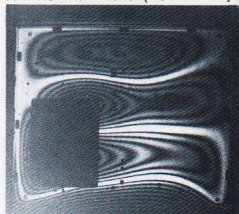
Four large insulators made of special rubber and coil springs are used to block out vibrations which may be carried through the platform on which the SL-P1200 rests. Inside, double insulator construction "floats" the delicate optical deck, isolating it and attenuating vibrations. To avoid vibrations originating in the power transformers they are floated in a special rubber damping material.



Laser Interferometry Reveals Resonance Modes

Resonance modes in player without anti-vibration measures.

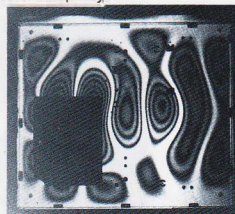
A conventional cabinet (metal chassis) resonates in different patterns according to the excitation frequency



385Hz, 85dB SPL



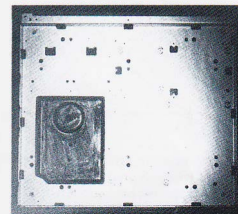
850Hz, 90dB SPL



1009Hz, 90dB SPL

Resonance modes in SL-P1200 with anti-vibration construction.

No excitation even at SPL of 90dB.



100 - 3000Hz, 90dB SPL

Versatile Controls Engineered to Satisfy the Professional



To deliver positive response to the experienced user, the SL-P1200 is equipped with an analog-like front end. The emphasis here is on flexibility, accuracy and comfort during manual operation. This attention to professional demands is represented in the design of the disc compartment, dial search controls, and pitch control slider. Controls are made of heavy duty parts mounted on a slanted panel for access convenience. Controls such as the auto cue switch and pitch control switch, which may or may not be used habitually by particular operators, employ mechanical switches that stay in position regardless of whether the power is off or on. The control panel with its versatile controls and displays is certain to satisfy the experienced user of professional equipment.

2-Speed Search Dial Cueing

Exclusive to Technics, the search dial gives you the same feeling of direct control that you enjoy when using a "black-disc" turntable. You "spin" the disc to the desired point (frame or song) by turning the dial. You can cue forward or backward in precise 0.1 second increments at two speeds: slow for one second of program time per rotation; fast for about 30 seconds per turn. A switch lets you disable the search dial to avoid accidental operation.



Rocker Control for the Disco DJ

With this rocker control it's easy to line up the beat for rhythmically synchronized song transitions. This rocks over the length of one pit-track (about 0.13s at the inner CD tracks). Handy in combination with fade-ins and fade-outs with other CD players or conventional program source equipment.

Precision Pitch Control

This long-stroke slider gives you continuously adjustable pitch control over a range of $\pm 8\%$. For the professional this offers a way to fit music into tight time slots. It's also handy for playing an instrument along with a CD. At the touch of a button you can instantly switch between your pitch setting and standard quartz-locked pitch.

Auto Cue Mode

Let the SL-P1200 do the work. With auto cue, it will position the pickup at the start of the first note of each track (confirmed by a "standby" indicator), ready to begin play instantly at your command. A real work saver for radio stations.

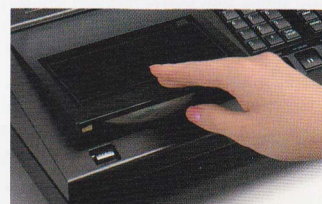
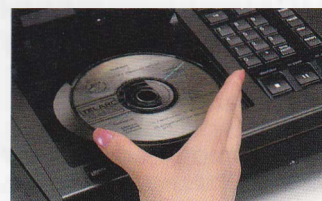
10-Key Cueing

Cue to the track, index number, and time of your choice by punching in values on the 10-key pad. You can specify the time in 0.1s steps for really fine control.

Disc Compartment Built for Full-Time Use

You can tell a pro by the manual dexterity and economy of motion displayed when changing discs. The SL-P1200 doesn't get in the way. You press a key to open the compartment but you push it in manually to close it. Of course the compartment is built to take

24-hour a day operation. The disc is visible in the compartment so you can confirm operation at a glance.



20-Selection Random Access Programming

The 10-key pad enables 20-selection random access programming by track number.

With this feature you can let the SL-P1200 automatically play your desired selections in your desired order.

Multi-Mode Repeat

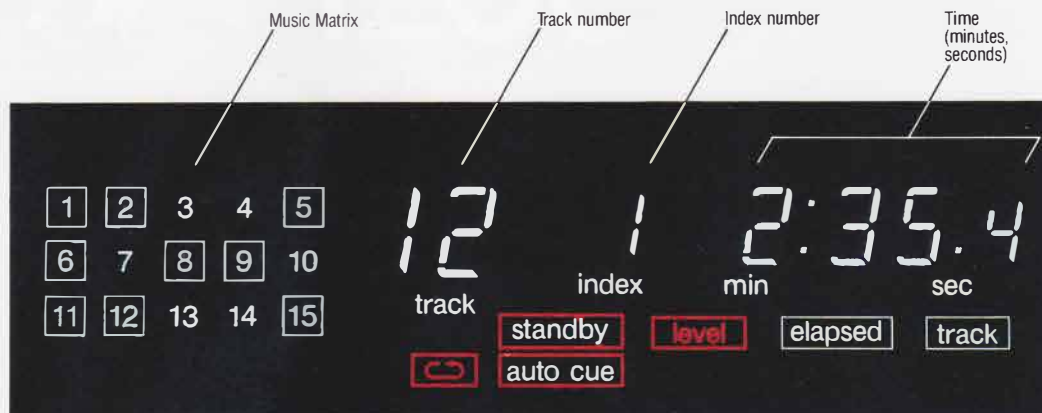
You can repeat a single track, the entire disc, or the program contents.

Auto Space for Tape Editing Convenience

By adding three seconds of silence between tracks, the auto space function helps assure even results when taping. Works with random access programming too.

Handy Skip Function

Press the skip keys to jump forward or backward by track according to the number of times pressed. This starts scanning at high speed if you keep one of the keys depressed.



Centralized Multi-Function FL Display

Nine digits of information reveal the track number, index number, minutes, seconds, and tenths of seconds. Attenuation is shown in decibels when the digital attenuator is used. You also have the Music Matrix which indicates program contents and which track is being played. Other indicators cover repeat, standby, auto cue, and music scan mode, while confirming elapsed/remaining and track/total time modes as selected by the user.

•Music Matrix

Since you can't see the tracks on a CD like you can on black disc, Technics developed this "Music Matrix" display. During normal play it shows all the tracks on a disc. During programmed play it shows just the programmed songs. A track's box flashes during play, then goes out after it finishes.

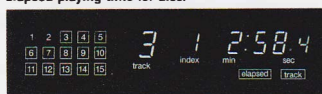


•Elapsed Time Indication

By selecting the elapsed time mode and track mode you get an indication of the track number (and index number if applicable) with that



Elapsed playing time for disc.



Elapsed playing time for track.

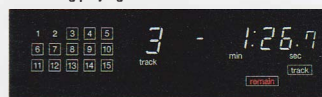
track's elapsed playing time in 1/10th second increments. With the total mode you see the elapsed playing time for the whole disc.

•Remaining Time Indication

Here you see the remaining playing time for track or disc. A minus sign precedes the time readout.



Remaining playing time for disc.



Remaining playing time for track.

•Program Recall

Besides the above two kinds of readout for programmed play you can also confirm program contents by pressing the program recall key. This gives a sequential display of the queue number and track number.



Program recall

•Other Indications

When cueing by time, you can press the time recall key during play to confirm the time setting that you specified. The SL-P1200 will then replay from the same point if you



Output level indication.

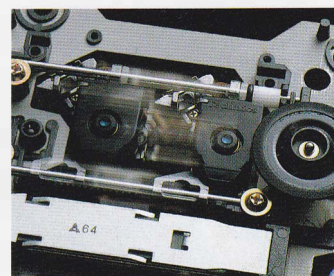


Photo showing all display indicators.

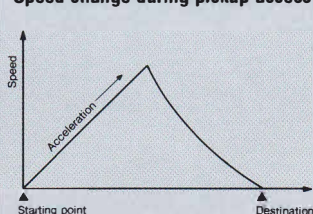
press the play key again. During operation of the digital attenuator you get an indication of level and attenuation in decibels.

High Speed Linear Motor Access System

For the traverse mechanism which moves the pickup, Technics employs an innovative linear motor with servo control via a new microprocessor and CP (conductive plastic) potentiometer. By computing the access distance versus speed, this system constantly optimizes acceleration and deceleration of the mechanism to minimize access time while assuring a shock-free stop. Also contributing to rapid and accurate access are the spindle motor's response characteristics and data processing circuitry's dependability.



Speed change during pickup access



A microprocessor accelerates and decelerates pickup access speed according to the distance of the destination from the starting point. This attains high speed as well as access accuracy.



Wireless Remote Control

Supplied with the SL-P1200 is a multi-function wireless remote control unit with 10-key pad for direct access and random access programming. A **digital attenuator** lets you reduce volume in 2dB steps from 0dB to -12dB. **Programmable music scan** gives you a preview of songs on the disc by playing the first few seconds of each.

Wired Remote Control Capability

A remote control terminal is built into the player to enable control of play, stop, and pause functions via a wired remote control unit. This terminal is used when two or more units are operated at the same time using the remote control unit.

Other Valuable Functions

- Headphone jack with level control.
- Subcode output terminal for future applications.
- LED indicators for pause, play, auto space, auto cue, search, search slow/fast, pitch control, and emphasis.

Technical Specifications

Audio

Number of channels: 2 (stereo)
Frequency response: 4 ~ 20,000Hz, ± 0.1 dB
S/N ratio: 106dB
Dynamic range: 96dB
Harmonic distortion: 0.0012% (1kHz, 0dB)*
Total harmonic distortion: 0.0025% (1kHz)
Channel separation: 106dB (1kHz)
Wow & flutter: Unmeasurable
Lowpass filter:

High Resolution Digital Filter

Pitch control: $\pm 8\%$

Signal format

Sampling frequency: 44.1kHz

Error correction:

Technics Super Decoding Algorithm

Decoding: 16-bit linear

Pickup

Type: FF1 (Fine Focus 1-beam)

Beam source: Semiconductor laser

Wavelength: 780nm

Spindle motor: Brushless DD motor

Traverse

System: High Speed Linear Motor

Access System

General

Power supply:

AC 220V, 50Hz for Continental Europe

AC 240V, 50Hz for U.K.

**AC 110/127/220/240V, 50/60Hz

for other countries

Power consumption:

32W

Output voltage: 2.0V (0dB)

Output impedance: 200 Ω

Load impedance: 20k Ω

Headphone output level: Max. 100mW (32 Ω)

Dimensions (W x H x D): 430 x 168 x 380mm

(16¹⁵/₁₆" x 6⁵/₈" x 14³¹/₃₂")

Weight: 14.5kg (32.0 lb)

Functions

Automatic play: Entire disc

Repeat: Entire disc, single track, programmed tracks

Program capability: Max. 20-selection

random access programmability

(track)

Cueing: Direct access (track, time, index).

2-speed manual search with cueing

sound (search dial and search keys).

track, skip, programmable music scan,

auto cue

Display: Total number of tracks, total

playing time, programmed tracks

track in play, elapsed track time,

total elapsed time (entire disc or

programmed contents), remaining

track time, total remaining playing

time (entire disc, programmed

contents), index number,

preset start point (time),

output level attenuation

Control keys: Play, pause, stop, open,

clear memory, recall, repeat,

10 number, + key, index,

rocking/search, skip, auto-space,

autocue (on/off), dial search (on/off),

search speed (slow/fast),

pitch control (on/off),

time mode (elapsed/remain, track/total),

time recall, (remote control only: search,

music scan, digital attenuator)

Infrared remote control unit

Functions: 27 functions

Dimensions (W x H x D): 65 x 18 x 155mm

(2⁹/₁₆" x 1¹/₃₂" x 6¹/₃₂")

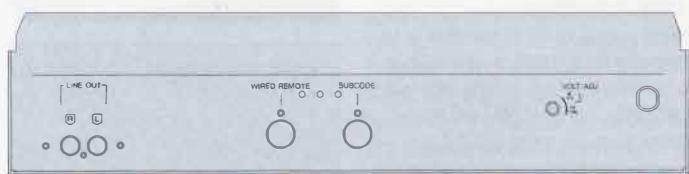
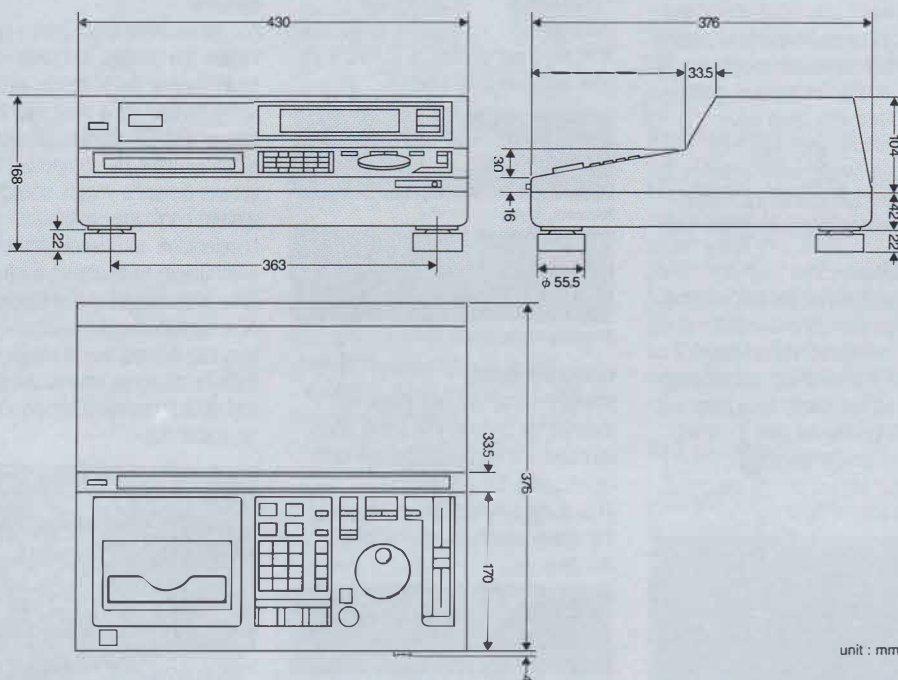
Weight (including batteries): 140g (4.9 oz)

* Up to 10th harmonic.

** Instead of a voltage selector, the voltage is

preset for some countries.

Dimensions



Rear Terminals

COMPACT
disc
DIGITAL AUDIO

Technics
Matsushita Electric