



Direct Drive Turntable System

Grand Class SL-1200G

Rediscover Music

Technics

Spinning the World Again

Our aim is the pursuit of true analogue record sound,
rather than nostalgia.

We wish to once again amaze the world as we did with the SP-10,
achieving revolutionary high performance.

This is the new challenging endeavour of Technics.

We have added cutting-edge technology to our direct-drive system,
and polished it for an even more amazing result.

The SL-1200G — Technics' new reference in direct-drive turntable systems.

Once again enjoy a time experiencing music with the
rich sound of analogue records.

Completely Redeveloping the Direct-Drive Turntable Created by Technics

The direct-drive analogue turntable was first achieved worldwide by Technics. It alleviated issues such as signal-to-noise ratio and wow and flutter, which had until then posed problems for turntables. This turntable attracted interest for its high performance and reliability, and left a considerable track record, including use by broadcast stations. The performance and track record of the direct-drive turntable continues unabated to the present day, with support by numerous audiophiles. With a direct-drive system, the sound of the turntable can be even further enhanced. This is the uncompromising attitude and confidence of Technics, the creator of direct drive. Development of the SL-1200G thus began. The latest technologies have been added to solve issues involved with direct-drive systems, such as cogging. The SL-1200G includes a newly developed coreless direct-drive motor with greatly increased precision by incorporating Blu-ray Disc technology for rotation control. This cutting-edge direct-drive system will surpass previous direct-drive systems. It is not a reproduction but innovation. We are redefining the reference in direct-drive turntables for the modern age.



A History of Relentless Advances in Direct-Drive Turntables. And Progress toward a New Era.

A History of Relentless Advances in Direct-Drive Turntables. And Progress toward a New Era. "In 1970, the world's first direct-drive turntable, the SP-10, emerged. The SP-10's performance amazed the world, and it received high acclaim, including the use as a player for broadcast stations. To further spread direct-drive systems, Technics continued to pursue development, such as with the SL-1200 (1972), which would become a long seller. In addition, through the development of new products, even further advances in direct-drive systems were achieved. Crystal oscillators are used for rotation control circuitry, which is important in direct-drive systems. Construction with a robust cabinet is improved to increase reliability and, of course, enhance sound quality. The design of the high sensitivity tonearm increases performance of reading micro analogue signals. Through the continuation of such relentless advances, numerous legendary models emerged, such as the best-selling SL-1200MK2 (1979), as well as the SP-10MK3 (1982) equipped with a powerful direct-drive motor for cutting-machine use. In 2016, the SL-1200G has been added to the history of Technics direct-drive turntables. A new era in Technics direct-drive systems has begun."

Technological Advances and Progression in Direct-Drive Turntables





EP record adaptor

ON/OFF (power) / Strobe light

START-STOP button

Speed select buttons

Stylus light

AC input terminals (detectable input)
Brass-milled PHONO output terminals

To prevent the effects of external noise, metal-shielding construction is used inside the case of the output terminal section below the tonearm. Brass-milled, gold-plated terminals are used for the PHONO output terminals and the PHONO earth terminal. Also, the AC input terminals are detachable, and the power cord can be upgraded.

Balance Weight

Arm lock

Anti-skating control

Arm-height control ring

Arm rest

Arm clamp

Pitch range select button

PITCH ADJ control

RESET button

With the SL-1200G, you can select not only LP (33 1/3 rpm), and EP (45 rpm) analogue records, but also SP (78 rpm) records, which provides a variety of ways to enjoy playing records by adjusting the pitch controller. To change the speed to 78 rpm, press both the 33 speed select button and 45 speed select button at the same time.

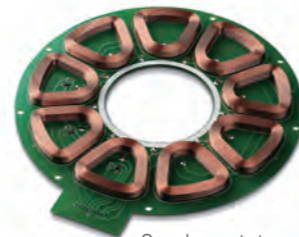
Direct Drive Motor

Mastering the motor — The core of the turntable

New Development of the Coreless Direct-Drive Motor for Stable Rotation

The mainstream drive system of analogue turntables for the present-day hi-fi market is belt drive. However, with its low-speed motor rotation and direct platter drive, direct drive is virtually free of the problem of deterioration in the S/N ratio due to noise caused by motor vibration or braking mechanisms, unlike previous belt-drive systems, which have a structure transmitting high-speed motor rotation to the platter through a braking mechanism. With an S/N ratio of 78 dB and wow and flutter of 0.025%, direct drive boasts astonishing excellence compared to regular belt-drive systems even in performance among analogue turntables. The numerous advantages also include high reliability without requiring periodic replacement of parts such as the belt. Direct drive, however, does have one issue, and that is the effect of motor rotation fluctuation, called "cogging." Motors rotate by taking advantage of the magnetism working between the permanent magnets of the rotors and the electromagnets of the stators. Cogging (i.e., rotation fluctuation) occurs when non-uniformity in the magnetism arises due to rotation resulting in changes in the positional relation with the permanent magnets when there is a core in the electromagnets of the stators. In developing the SL-1200G, Technics determined that new development of direct-drive motors would be indispensable. The issue of cogging would be solved, and the effect of vibration even further reduced. What thus emerged is the newly developed

coreless direct-drive motor. This motor uses coreless stators with cores eliminated from the coils, which comprise the motor. Because no attractive force occurs between the cores and magnets, the motor is free of non-uniformity in magnetism, and so the occurrence of cogging is theoretically eliminated. Coreless motors, however, as simple as they are, have an inability to easily obtain strong torque because of the difficulty in increasing magnetic density. For rotors with permanent magnets, we therefore selected twin rotors with a surface-opposing structure sandwiching the coreless stators from above and below. Compared with the SL-1200MK6, this achieves results such as a torque about twice as high, and a reduced load on the bearings. In addition, micro-vibrations during rotation have been thoroughly reduced by narrowing the clearance of the rotation shaft and the bearing section to the same level as the SP-10MK2 or lower. Also, the use of oil-impregnated bearings maintains high performance over long periods. Excellent performance has been combined with reliability enabling long-term, largely maintenance-free use.



Coreless stators



High-Precision Motor Control for Ideal Rotation Conditions

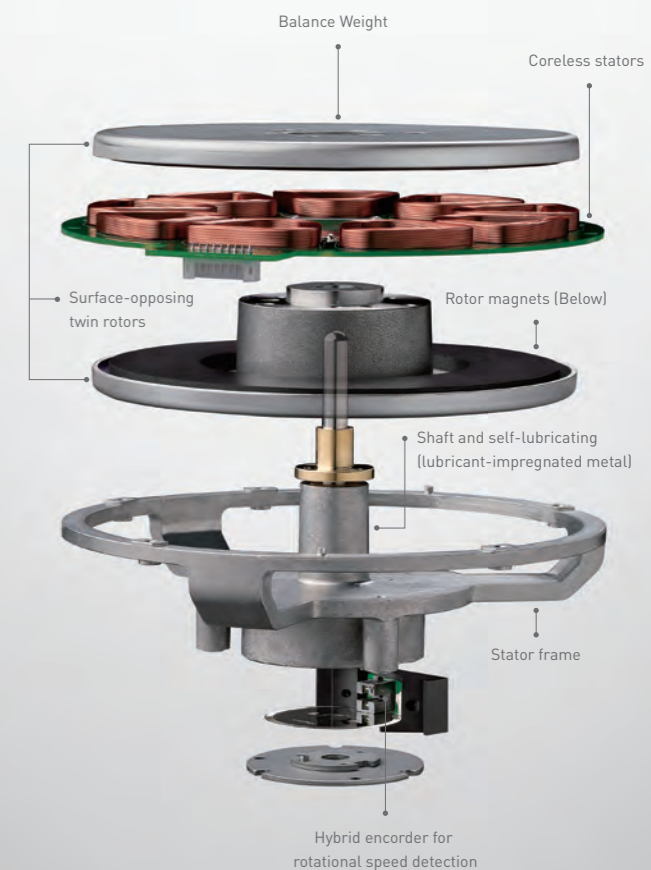
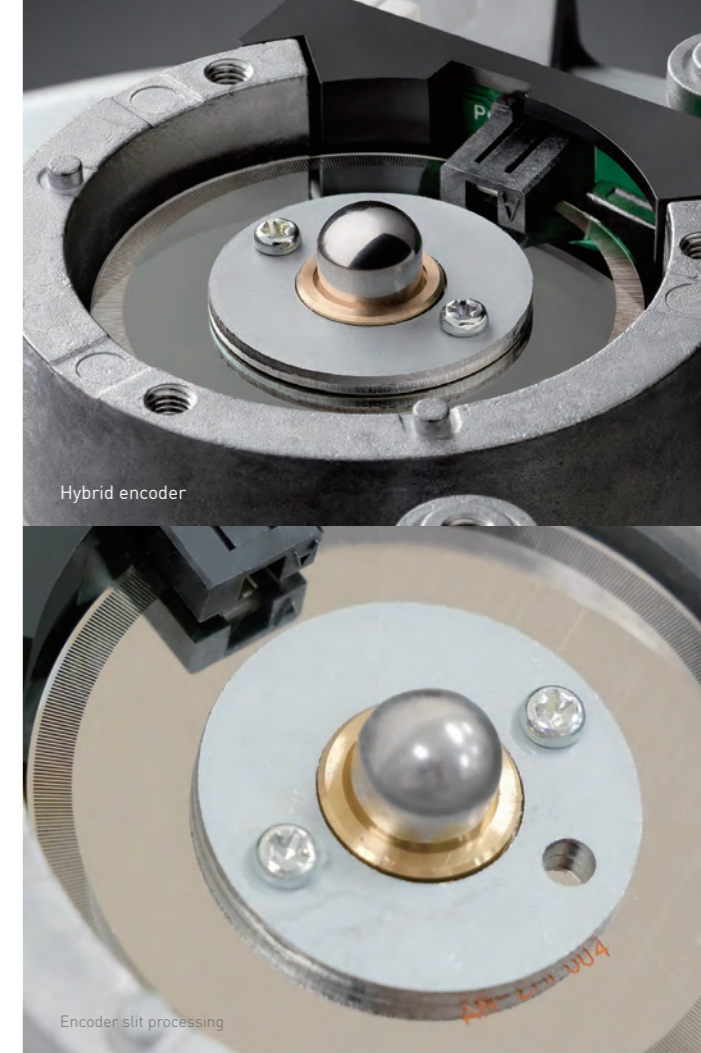
"The motor rotation control, which verifies and corrects the precision of rotation, applies the latest motor control technology cultivated in the development of Blu-ray Disc devices. The control maintains a constant speed by switching into different drive modes at intervals requiring strong torque, such as at motor startup, and at intervals using inertial revolution in braking. Strong torque and high stability are achieved by performing precise switching according to the operation status. Compared with the motor control of the SL-1200MK6, the control of the SL-1200G has a reference clock with about three times higher precision, enabling more accurate rotation control according to detection of the accurate rotation position."



Electrical circuitry section of the SL-1200G

Hybrid Encoder Detecting Rotation Speed with High Precision

Detecting the rotation speed with high precision is indispensable for motor rotation control. The coreless direct-drive motor performs high-precision detection of the rotation speed by using an optical encoder incorporating a high-precision slit produced by etching with nickel and copper cladding. In addition, high precision is achieved in the generation of coil drive signals by changing to a system using microcomputer ROM tables instead of the previously used electromagnetic coupling system. Also, functionality that detects fluctuations in the process precision of the encoder slit achieves further accuracy in rotation.

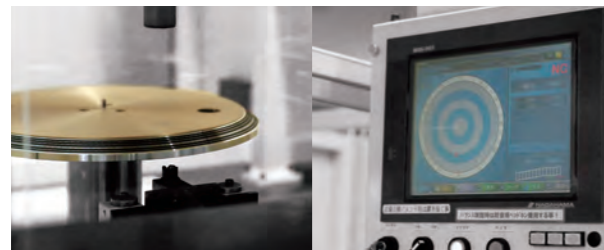


Turntable Platter

Pursuing rigidity and vibration damping characteristics for stable and smooth rotation

Precise Balance Adjustment Eliminating the Causes of Slight Vibrations and Noise

If there is non-uniform deviation in the mass of the platter, excessive vibration and noise are produced during rotation, which causes deterioration in sound quality. Therefore, an adjuster used in manufacturing processes of, for example, bullet train carriages is customised for use specifically for these platters. The rotation balance of each and every item is precisely adjusted. Once the platter has completed adjustment, a sticker stating "BALANCED" is attached to indicate that balance adjustment has been done. Thorough manufacturing is performed to achieve smooth and stable rotation.



Balance adjuster

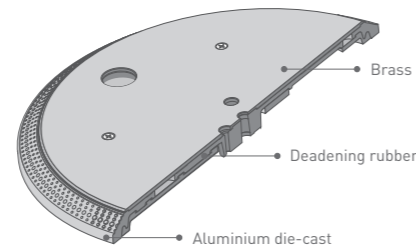


"BALANCED" sticker indicating balance adjustment completed

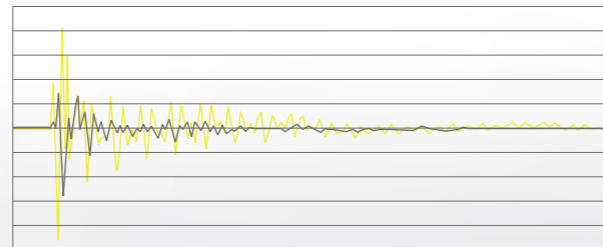
Exhaustive measurement performed to examine whether the surface deflection of the platter is within limits

Heavyweight-Class Turntable Platter Using Three-Layer Construction

The SL-1200G turntable uses a three-layer construction that solidly integrates aluminium diecast with brass weight and has deadening rubber attached to the entire rear surface to eliminate unwanted resonance, thereby achieving high rigidity and excellent vibration damping characteristics. At 3.6 kg, the total weight of the SL-1200G platter is more than twice that of the SL-1200MK6 and achieves an inertial mass surpassing that of the SP-10MK2, which was used by broadcast stations.



Damping characteristics graph



■ Gray line: SL-1200G ■ Yellow line: SL-1200MK5



Tonearm

Improved trace performance through increased precision with scrutiny of materials

Magnesium Tonearm Tracing the Vinyl Surface with High Precision

The tonearm tracks the rotation of the record and reads the signal with high precision. The tonearm inherited by Technics is the traditionally used static-balance universal S-shaped tonearm. For tonearm materials, the SL-1200G uses magnesium, which is lighter in weight and has superior damping characteristics. By performing cold drawing, characteristics of the materials are further improved and high-dimension precision is achieved.

Gimbal Suspension Stably Supporting Tonearm Movement without Obstruction

For support, the tonearm uses a traditional Technics gimbal suspension construction in which the axial cores of the horizontal rotation axis and the vertical rotation axis intersect at a single point. The tonearm also uses high-precision bearings with a cut-processed housing. The high initial sensitivity of 5 mg or less is achieved through manual assembly and adjustment by skilled Japanese artisans. The grooves etched into records are accurately traced.



High-precision bearings

Supplied Auxiliary Weights Support a Wide Variety of Cartridges

One of the unique joys of analogue playback is being able to change the cartridge to match the music genre and feeling in order to enjoy different types of sound. The SL-1200G includes two different auxiliary weights. A balance weight supports cartridge masses of 5.6 to 12 g*, allowing cartridges of 10 to 16.4 g to be supported with the small auxiliary weight, and cartridges of 14.3 to 19.8 g with the large auxiliary weight. More cartridges are thus supported. * When the supplied shell is used.

High-Precision Tonearm Height Adjustment Mechanism for the Vinyl Surface

With the SL-1200G, the height of the tonearm can be adjusted up to 6 mm according to cartridge or turntable mat changes. The base portion of the tonearm uses extra-hard brass and has six sets of embedded screw grooves for adjustment. The six grooves support the tonearm and thereby eliminate rattle. Height adjustment is performed with high precision.

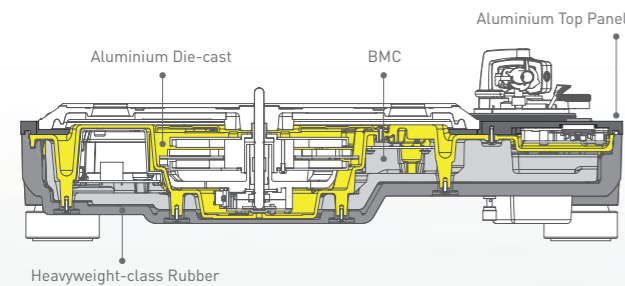


Body & Insulator

Robust cabinet supporting beautiful sound and isolation from various vibrations

Four-layer Cabinet Construction Achieving Vibration Resistance and High Rigidity

With analogue turntables, even minute vibration transmitted from outside produces noise and causes the playback sound to become unclear. Therefore, in the design of analogue turntables, most important is to achieve high levels of vibration resistance and rigidity. The SL-1200G attained high rigidity by using a four-layer construction with an added 10-mm-thick aluminium top panel in addition to a three-layer construction of a heavyweight-class rubber base, BMC (bulk moulding compound) chassis, and aluminium diecast chassis used with the previous SL-1200MK6.



10-mm-thick Top Panel Combining High Rigidity with a High-Quality Appearance

The aluminium top panel helps improve vibration resistance and increase rigidity. In addition, each immaculate aluminium panel is individually cut and given hairline polishing. This not only improves the performance of the body, but also provides a finish with a highly elegant sensation for enjoyment that grows as the turntable is used.

Insulators Using High-Damping Silicon to Block Out External Vibration

The SL-1200G uses a special silicon rubber that ensures both high vibration damping and long-term reliability. Vibration in the horizontal direction is absorbed by reinforcement with cylindrical tubes using microcell polymers. These parts are newly developed special insulators with a structure to fit in the zinc-diecast housing, which has a high specific weight. Also, the installation section of the insulators is equipped with a horizontal adjustment mechanism using screws. This eliminates the rattle that occurs when the turntable is installed in a rack or the like, and prevents unwanted vibration. In addition, the horizontal adjustment mechanism enables strict adjustment of the horizontal degree of the platter and the record surface, thereby eliminating rotation fluctuation due to a slant and allowing more stable record playback.



The Uncompromising Quality from Japan

The creators who produced the new turntable systems by merging the latest technology and traditional skills



The Technics insistence on uncompromising technology and performance is clear in the resulting sound and form.

Pursuing the ideal in sound and form,
and drawing out the excellent sound of vinyl playback.

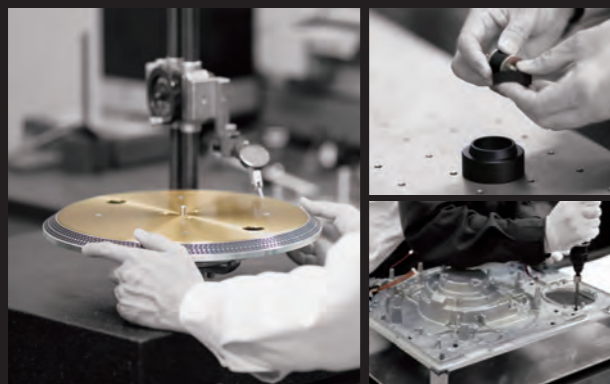
The SL-1200G incorporates the polished technologies of artisans.

The SL-1200G — Pursuit of high-precision craftsmanship from parts development, design, and production, to assembly

The reason for the worldwide support of the direct-drive SL-1200 since the golden days of analogue records, and for the long period of continual production, was its excellent basic design. Newly designing a turntable that is based on that design and suited to the present-day audio environment, in which digital is the mainstream, was extremely difficult. In particular, the direct-drive motor, which has achieved even further advances by using present-day technology, emerged by mobilising the collective efforts and assistance of the masterful technicians familiar with that era.



The strict standards of Technics for improving performance are not limited to merely development of a newly designed motor and rotation control applying the latest technology. High precision is pursued in all aspects. The playback mechanisms for analogue records are extremely simple, and so high mechanical precision in every part is directly linked to sound quality. Even slight vibrations and fluctuations in rotation control will change the pitch of the sound source, and the sound reproduction will suffer. We were therefore strict about precision in detecting speed, so strict that we inspect each individual turntable for variations in the slit width of the encoder, correcting any variations found.



Thorough precision is also pursued in assembly. Many mass-produced products are assembled on machines, but with the SL-1200G, masterful craftsmen manually assemble the parts and make adjustments. Manual work by craftsmen enables high-precision assembly, and at the same time, unlike with machines, results in variations in the quality of each individual turntable. To eliminate this variation, Technics assembly includes checks of each and every product using high-precision measurements, leading to uniform quality with high accuracy. The platter, which is made from diecast, is also machine-cut with high precision and given a high-precision finish by using 3D measurements, and even the strobe pattern for visually confirming speed is strictly checked so that no fluctuation arises during rotation.

In addition, adjustment of the dynamic balance uses an adjuster equivalent to those for equipment that strictly requires high-precision rotation, such as bullet train carriages and the drive parts of tooling machines. High precision in all of the various aspects thus enhances the performance of the SL-1200G.



The level of this pursuit of precision is so high that it surpasses conventional thinking, with strictness far more rigorous than that of high-end audio equipment produced without regard for cost or labour. Although the quality may be considered excessive, this strictness is in no way meaningless. The higher the mechanical precision, the more minimal is the correction using electronic circuitry. This is apparent in the superior S/N ratio of the SL-1200G. In our thorough strictness, we pursue high precision believing that the results of our strict standards will always be apparent in the sound. Our previous experience and expertise, the latest technology, and manual working by masterful craftsmen, as well as repeated precise adjustments, resulted in the completion of the strict-standard, high precision SL-1200G.

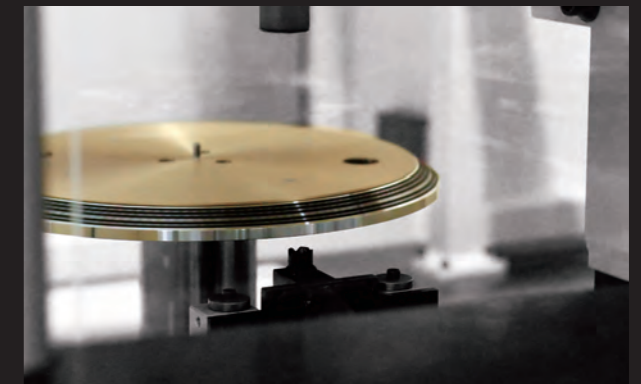
Beauty created by the intricate craftsmanship of Japan's technicians and artisans

The parts of the SL-1200G, such as the tonearm and platter, are produced in a variety of locations in Japan by factories that possess outstanding techniques. The final assembly and precise adjustments are performed at our Technics factory in Utsunomiya, from where, once completed, the high-precision, high-performance product is shipped throughout the world.

The SL-1200G not only combines the latest technologies, but also reunites the technicians and craftsmen who previously supported Technics. For example, the tonearm of the SL-1200G uses magnesium. This material is excellent in its light weight and high strength, but it is extremely difficult to process. This challenging problem was solved by introducing cutting-edge processing technology. The issues of difficult adjustments and problematic assembly were also overcome through unique method suggestions applying the previous experience of masterful technicians. Meticulous and careful craftsmanship creates irreplaceable value, in addition to excellent performance and beauty. Reliability for long-term use with important care. The SP-10 Series and SL-1200 Series have passionate fans worldwide even now. More than a few models are still in use. Of course the SL-1200G has also inherited high reliability just like those models.



Japanese craftsmanship comprehends natural beauty. Japanese swords and tea bowls have surpassed their original functions as tools, and are recognised at present for their value as works of art. This comprehension can also be seen in the strict standards of Technics. Technics products possess a beauty that surpasses high-level technology.



"The SL-1200G emerged from the linking of people and technology.
Our hope is that you will continue to use the SL-1200G as a tool for enjoying music."

Many still enjoy troublesome analogue records in today's age of trouble-free digital music playback. To meet the strict needs of such users, the SL-1200G was created to communicate the superior sound that is unique to analogue.

The SL-1200G has advanced to a level that was impossible when the SL-1200 Series was originally released worldwide. The SL-1200G combines the invaluable experience and expertise, conveyed from masterful technicians, with cutting-edge technology. The product was completed entirely by the connections of the people who made this combination possible. We are greatly pleased that the linking of technology and people could be made. Whether in the past or at present, many of us at Technics have had confidence in our own technology, and these people create products. Our hope is that you actually experience the product of these people's technology and strict standards. Be sure to look at it with your own eyes, touch it with your own hands, listen to it, and hopefully, use it for many years to come.

The SL-1200G is Technics' respectful response to the loyal fans of Technics turntables, new audiophiles wanting to enjoy analogue record playback today, and all people who love music.



Direct Drive Turntable System SL-1200G



Turntable section

Type

Direct Drive Manual Turntable

Turntable Speeds

33-1/3, 45 and 78 rpm

Adjust Range

±8 %, ±16 %

Starting Torque

3.3 kg-cm (2.8 lb-in)

Build-up Characteristics

0.7 s. from Standstill to 33-1/3 rpm

Wow And Flutter

0.025 % W.R.M.S. (JIS C5521)

Rumble

78 dB (IEC 98A weighted)

Turntable Platter

Brass and aluminum die-cast combined

Diameter: 332 mm (13-5/64")

Weight: Approx. 3.6 kg (7 15/16 lb)
(including a rubber sheet)

Tonearm Section

Type

Universal Static Balance

Effective Length

230 mm (9-1/16")

Overhang

15 mm (19/32")

Tracking Error Angle

Within 2° 32' (at the outer groove of 30 cm (12") record)

Within 0° 32' (at the inner groove of 30 cm (12") record)

Offset Angle

22°

Arm-height Adjustment Range

0 - 6 mm

Stylus Pressure Adjustment Range

0 - 4 g (direct reading)

Head Shell Weight

Approx. 7.6 g

Applicable Cartridge Weight Range

(Without the auxiliary weight)

5.6 to 12.0 g

14.3 to 20.7 g (including the head shell)

(With small auxiliary weight)

10.0 to 16.4 g

18.7 to 25.1 g (including the head shell)

(With large auxiliary weight)

14.3 to 19.8 g

23.0 to 28.5 g (including headshell)

Cartridge Mounting Dimension

JIS 12.7 mm Interval

Head Shell Terminal Lug

1.2 mm ϕ 4-pin Terminal Lug

Terminals

Audio Output

PHONO (Pin Jack), EARTH TERMINAL

General

Power Supply

AC 120 V, 60 Hz

Power Consumption

14 W

Approx. 0.2 W (standby)

Dimensions (W x H x D)

453 x 173 x 372 mm

(17-27/32 x 6-13/16 x 14-21/32 inch)

Weight

Approx. 18 kg (39.7 lbs)

Accessories

Turntable, Turntable Mat, Dust Cover,
EP Record Adaptor, Balance Weight,
Auxiliary Weight Small, Auxiliary Weight Big,
Head Shell, Overhang Gauge,
Screw Set for Cartridge, PHONO Cable,
PHONO Earth Lead, AC Mains Lead,
Screw Set for Turntable, Owner's Manual

Technics is a brand name of the Panasonic Corporation

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