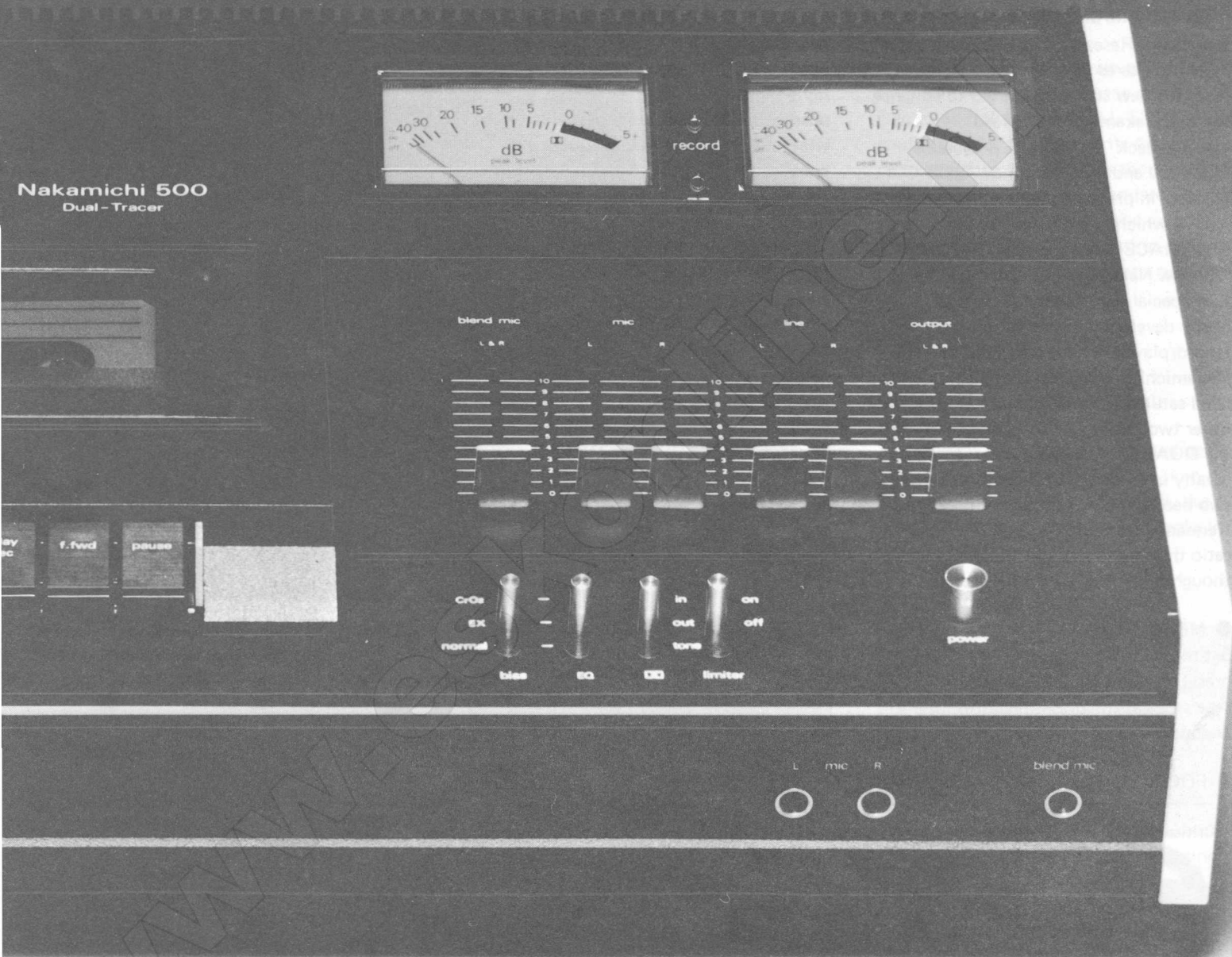


Nakamichi 500

Dual-Tracer 2 Head Cassette System



NAKAMICHI classic cassette decks —
they're born, not made!

This new DUAL-TRACER is in the finest Nakamichi tradition with entirely new and unique features that reflect the genius apparent in its famous predecessors, the Nakamichi TRI-TRACER decks. Focused-Gap Head... super-durable crystal permalloy core ... professional full-range 45dB peak level meter.

Nakamichi 500

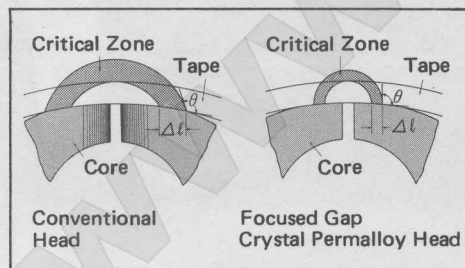
Dual-Tracer 2 Head Cassette System

THE NAKAMICHI 500 DUAL-TRACER Nakamichi Research Inc. -- whose meteoric rise to global renown stems from the new technology used to enhance the two Nakamichi three-head cassette deck TRI-TRACER systems (TT-1000 and TT-700) -- now takes pleasure in presenting a two-head cassette system which in every way echoes TRI-TRACER originality and reliability. The new Nakamichi 500 DUAL-TRACER is of special significance because of newly-developed Focused-Gap type record/playback heads designed by Nakamichi to give a far better head-saturation level than is found in other two-head systems. Consequently, the DUAL-TRACER'S dynamic range is greatly extended, and in fact in terms of two-head cassette technology it offers a frequency response and signal-to-noise ratio that put it well out in front, even though it arrived late on the scene!

● MEMORY REWIND

Set the memory button to "ON" and preset the counter to "000", then the tape stops at the preset position when rewind.

● FOCUSED-GAP HEAD

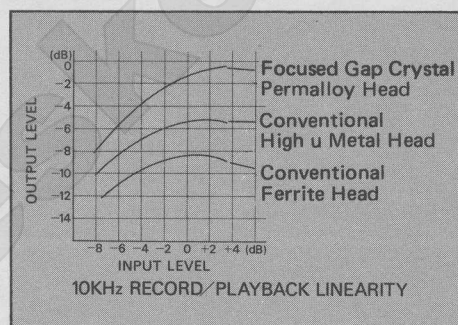


The above figure shows how the necessary magnetic field passed through the head to the tape during recording. It is a common fallacy, however, to believe that the head gap controls the recorded quality. In fact it is controlled in the process of attenuation (critical zone) of the bias flux as the tape passes the record head gap. The two adjacent figures show how the critical recording zone varies in the Nakamichi and conventional head systems, the Nakamichi curve

(see right-hand fig.) being much sharper: It is important from a quality-recording point of view that the angle θ be a right-angle and that Δl be as thin as possible adjacent to the tape. These two vital factors are not met adequately by conventional head systems, before flux reaches the total depth of the magnetic tape coating.

This results in unwanted generation of magnetic distortion, plus loss of vital high frequencies due to the greater width of Δl . The DUAL-TRACER'S Focused-Gap Head (see fig. at right) is designed to be ideal for the best possible two-head cassette recording; and that is precisely what you get from this new Nakamichi concept.

● PLAYBACK HEAD GAP



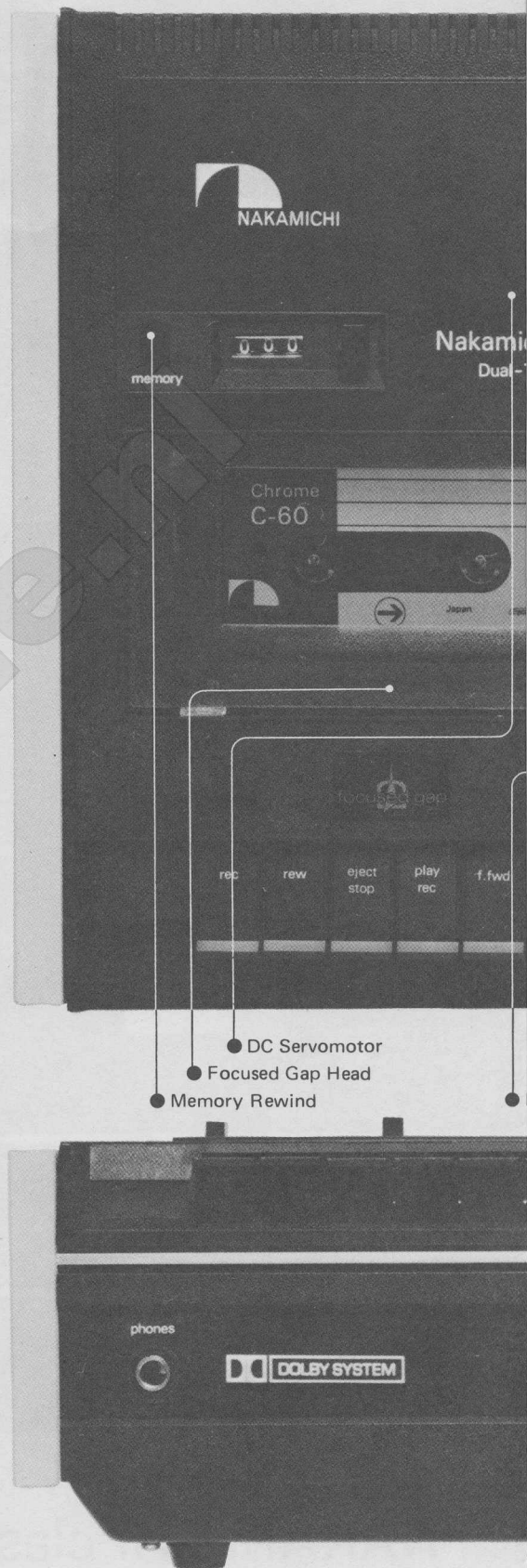
The head gap on playback ideally should remain at 1.5 microns to preserve important ultra-high frequencies.

In conventional systems, effective gap becomes extended magnetically due to stresses imposed at the manufacturing stage. A proportion of the high frequencies is therefore lost as a result of the effective gap becoming extended to 2 microns due to such stress.

The Nakamichi system and design ensure that the gap remains at the ideal 1.5 micron width always.

● DC SERVOMOTOR

A tachogenerator is incorporated in the DUAL-TRACER'S DC motor, ensuring that the tape runs at a speed that remains constant despite mechanical load or voltage variations. This reduces wow and flutter to the barest minimum.



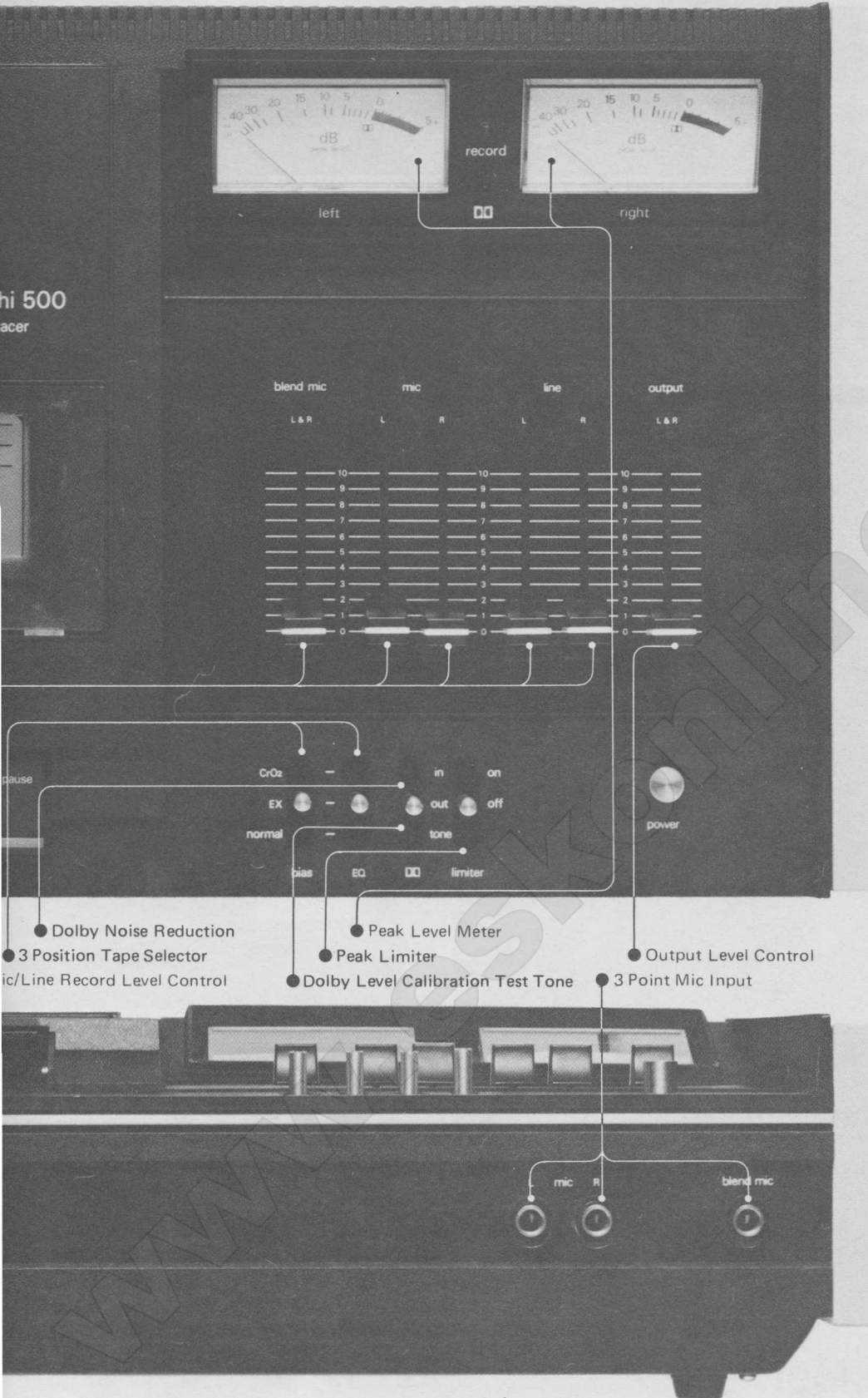
● TRI-MIC/STEREO LINE RECORD LEVEL CONTROL

As the DUAL-TRACER accepts three microphone sources and stereo line input, individual level controls permit optimal independent control of all inputs.

● 3-POSITION TAPE SELECTOR

Switching to CrO₂, EX, or NORMAL

hi 500
acer



- Dolby Noise Reduction
- 3 Position Tape Selector
- Mic/Line Record Level Control
- Peak Level Meter
- Peak Limiter
- Dolby Level Calibration Test Tone
- 3 Point Mic Input
- Output Level Control

allows suitable selection of bias and equalization for each of the three types of tape. The time constant of CrO2 is 70us, and of EX and Normal are 120us.

● **STANDARD DOLBY LEVEL**
Naturally the Nakamichi system incorporates the DOLBY noise reduction system which all quality cassette decks

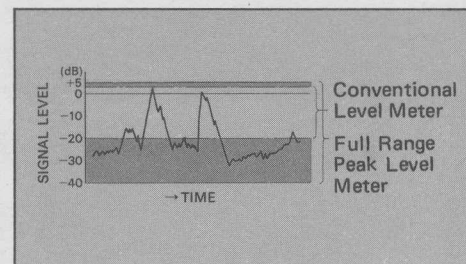
now feature to enhance their signal-to-noise ratio. However, because the dynamic range of cassette decks is usually more limited than that of open-reel decks, it has become common practise for such decks to set the DOLBY zero reading in the level meter at a point 2 - 3dB higher than actual 0dB. Consequently, the S/N ratio at 0dB

standard recording level is unavoidably deteriorated. The DUAL-TRACER, however, makes no such compromise. By means of Focused Gap Head Nakamichi DUAL-TRACER could remarkably improve its distortion characteristics, thus 0dB on the meter scale can conform to the standard DOLBY level, instead of providing false meters. This reflects well on the signal-to-noise ratio, incidentally, which is on a par with open-reel decks.

● **PEAK LIMITER**

Though the level meter on the DUAL-TRACER provides superb monitoring against distortion, nevertheless occasional unexpected peaks are bound to occur from time to time. By activating the PEAK LIMITER, the operator can damp such sudden peaks in excess of 0dB.

● **PEAK LEVEL METER**



For the best possible monitoring during recording, the DUAL-TRACER has a full-range peak level meter with gradations from -40dB to +5dB. The meter reacts instantly to changes in peaking, with a 150ms attack and 2-second release.

● **3-POINT MICROPHONE MIXING**

In addition to using a pair of stereo microphones, the operator can mix in a signal from a third microphone for greater realism and presence.

● **OUTPUT LEVEL CONTROL**

The line output level from the DUAL-TRACER can be controlled regardless of the meter reading, as it matches whatever amplifier is in use.

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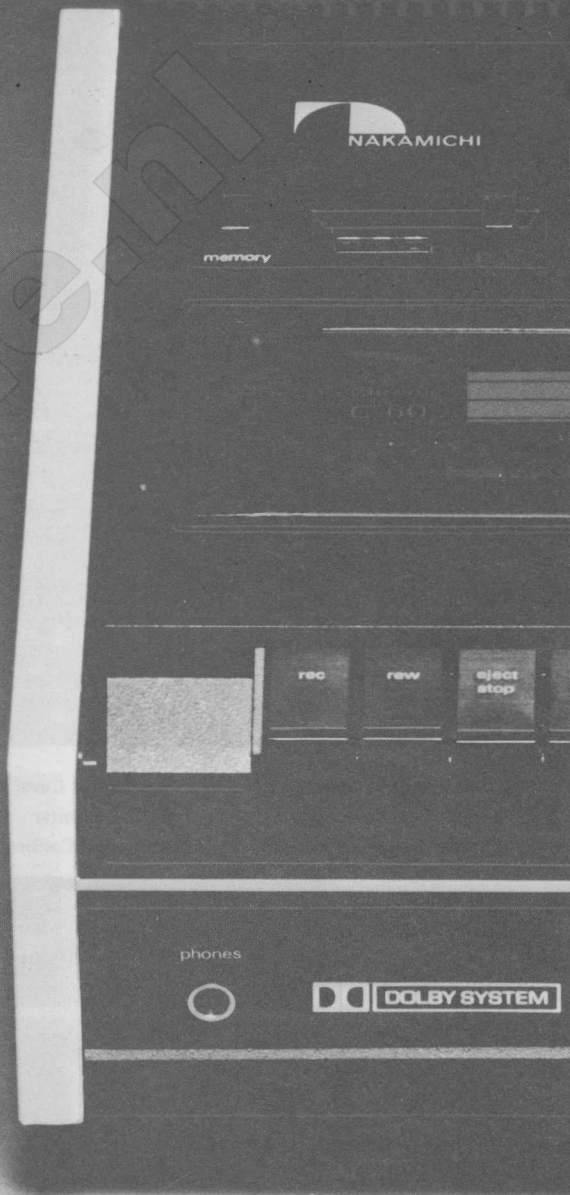
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SPECIFICATIONS

Power Supply	100, 117, 220, 240V 50/60Hz
Power-Consumption	40W Max.
Tape-Speed	1-7/8 ips.
Wow & Flutter	0.13% WTD Peak
Frequency Response	40Hz - 17KHz ± 3dB (EX tape) 40Hz - 16KHz ± 3dB (CrO2 tape) 40Hz - 15KHz ± 3dB (Low noise tape)
Signal to Noise Ratio	Better than 58dB CrO2 Better than 55dB EX, Low Noise (WRMS, CCIR, 400Hz, 3% DISTORTION, DOLBY-IN)
Total Harmonic Distortion	Less than 2% (at 1KHz 0dB EX tape)
Erasure	Better than 60dB (at 1KHz 0dB Saturation Level)
Channel Separation	Better than 35dB (at 1KHz 0dB)
Cross Talk	Better than 60dB (at 1KHz 0dB)
Bias Frequency	105KHz
Input:	
Mic	600 ohm 0.2mV
Blend Mic	600 ohm 0.2mV
Line	150 Kohm 70mV
DIN	25 Kohm 13mV
Output:	
Line	1.0V (Max.) Variable
Headphones	8 ohm 1mW (0dB)
Dimensions (Approx)	15"(W) x 4-1/2"(H) x 10"(D)
Weight (Approx)	15-1/2 lbs.

- Specifications and appearance design are subject to change for further improvement without notice.
- DOLBY NR under license from Dolby Laboratories Inc.



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