MITSUBISHI ELECTRIC

Changes for the Better

16ch DIGITAL RECORDER

ISO 9001
JQA-0521

051

Security Solutions

DX-TL5000E

To meet the increasing demand for professional-grade digital video surveillance systems,
Mitsubishi Electric has developed the DX-TL5000E Digital Recorder.
Designed to offer the best in digital video security recording,
the DX-TL5000E is a high-performance, high-spec solution providing outstanding expandability
and a wide range of features, plus user-friendly setup and simple operation.

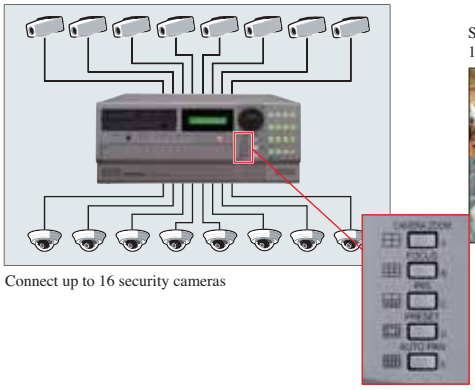
Versatile Monitoring

The DX-TL5000E offers superb versatility with support for numerous display options on one or more monitors.

16ch multiplexer

Thanks to its 16-channel multiplexer, the DX-TL5000E can be hooked up to 16 cameras. You can choose between 5 different split-screen displays — handling 16, 13, 10, 9 or 4 video feeds simultaneously — and a full-screen display. Even when using the 16-way split-screen display, the DX-TL5000E can handle 50 pictures a second from each camera. This ensures a natural-looking live video display with smooth motion.

Live monitoring capability	
PAL Format	50pps x 16 cameras = 800pps

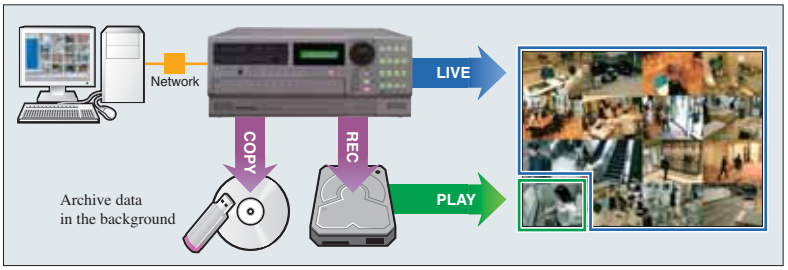


Connect up to 16 security cameras

Split-screen display to monitor up to 16 video feeds

Front-panel buttons to select display format

Triplex function



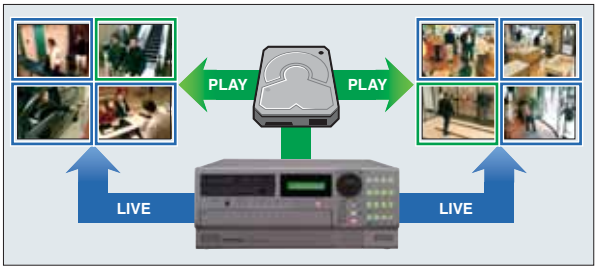
There's no need to interrupt operations just to check recorded footage. Triplex capability means that you can display live video feeds as well as previously recorded footage at the same time as the DX-TL5000E is recording. You can even archive material simultaneously. Pick any segment of the split-screen display for playback and use the jog-shuttle control to navigate.

Dual multiplexer output

The DX-TL5000E's dual multiplexer allows you to use two monitors, thus creating a powerful camera-monitoring setup with double split-screen capability. Live video and playback footage can be output separately to the two monitors. Alternatively, the output from a single camera can be displayed on both monitors but with a time shift — useful if you need to check many hours of video!

Twin monitor connectors

Using two monitors greatly enhances surveillance efficiency



Versatile Recording

Choose from a wide range of recording options to handle various emergency events with enhanced reliability.

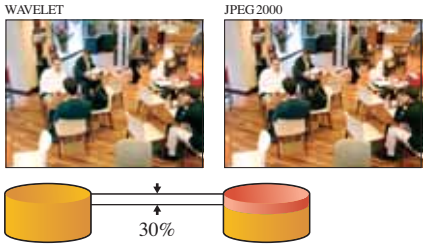
High-definition recording

You can pick from 6 levels of recording quality. What appears as smooth video footage on playback is in fact recorded as a series of still pictures using JPEG2000 technology. The high efficiency of wavelet-based image compression ensures both high picture quality and a vast recording capacity: 1 terabyte of data can be stored using the 750-gigabyte* internal HD capacity of the DX-TL5000E, which can also record up to 4 audio channels in PCM format using the optional DX-SC5 sound card.

*comes as standard with 500Gb memory (2 x 250 Gb drives).
Additional 250 Gb drive can be added if required

Video recording capability	
PAL Format	12.5pps x 16 cameras = 200pps [50pps x 4 cameras]

DX-SC5 sound card (option)

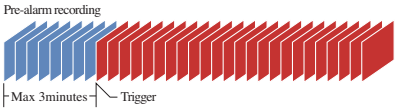


JPEG2000 technology improves compression efficiency by 30%

Alarm recording

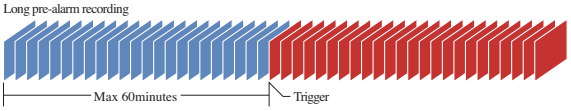
An external sensor can trigger alarm recording

Triggered by motion detection — with parameters set individually for each of the 16 cameras that can be connected to the recorder — and/or by the activation of an external alarm sensor, the DX-TL5000E retroactively initiates alarm recording between 1 second and sixty minutes (user selectable). Alarm recording starts at a point up to three minutes prior to the alarm.



Emergency recording

Emergency recording is activated by a device, such as a panic button, attached to a terminal on the rear panel. Whatever timed or programmed settings are in effect, emergency recording takes priority, cycling through all designated camera views automatically and recording at the highest quality setting so as to capture every detail.

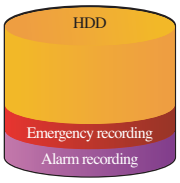


The DX-TL5000E is prepared for all emergencies

Long pre-alarm recording (LPA)

If long pre-alarm recording has been selected, emergency recording can start as early as 60 minutes prior to the emergency signal. This exclusive feature can provide ample information for later examination and analysis.

Alarm partition



Reserved partition preserves data

The vital data produced by alarm or emergency recording is stored in a separate, reserved partition on the hard disk. This protects the video footage from the danger of being overwritten. To increase reliability even further, another hard disk can be used to mirror data: should one of the disks fail, the data will still be safe.

Simple Setup

Setting up the DX-TL5000E is easy thanks to the setup wizard and on-screen menus, plus USB mouse support

GUI menus

For both initial setup (using the automated wizard) and daily operations, the on-screen menus and USB mouse make everything so easy that you can forget the User Manual. A mouse-click on the screen will bring up the menus and, if you want, simple operating instructions. What's more, the transparency of the on-screen menus can be adjusted so as not to obscure real-time monitoring. You can also use the keys on the front panel for menu selection.

On-screen menus and mouse support

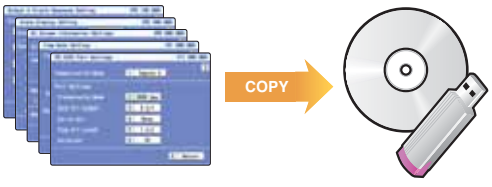
Recording setup

Set recording parameters separately for each camera

Wherever possible, the setup process has been automated: if you specify the recording interval and period, recording quality will be set automatically. But you are always free to fine-tune the settings — using the timer function, for example, to make more detailed recordings for specific periods of the day, or on certain days of the week. This can be combined with motion detection. As well as more effective surveillance, this flexibility ensures more efficient use of hard disk space.

Setup profile management

The more you fine-tune the settings on the DX-TL5000E, the better it can serve your needs. But it also becomes more important for you to store those settings. Fortunately, it's very easy to save the complete setup profile using external media, such as a USB memory stick or CD-R disc. You can thus restore setup information at any time, but also copy profiles to other units as a quick means of cloning and customising.



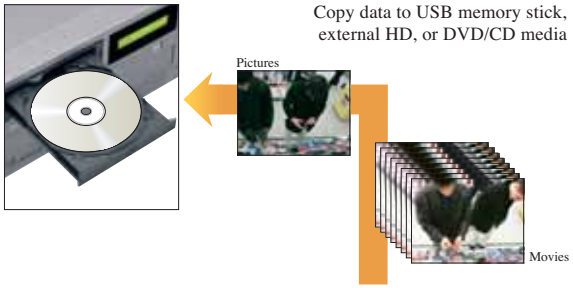
Transfer setup profiles between recorders

Simple Operation

The DX-TL5000E's on-screen menus and USB mouse make day-to-day operations quick and easy.

Data archiving

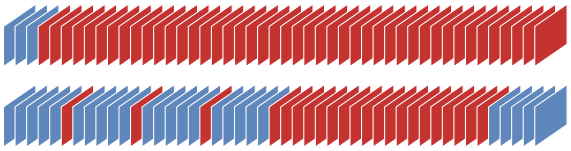
Both video footage and still images can be easily archived using optical media, an internal hard disk, or an external hard disk connected to one of the 6 USB ports (front 2, rear 4). You can define precisely what you want to copy — an entire recording or just one portion, a specific camera or time period, etc. You can even "mirror" an entire hard disk to create a backup copy. And since viewer software is automatically copied with the data, both video footage and still images can be examined on any Windows computer.



Copy data to USB memory stick, external HD, or DVD/CD media

DX-ZD5UE HDD extension units (option)

Up to 7 units



On-screen menus facilitate archiving operations

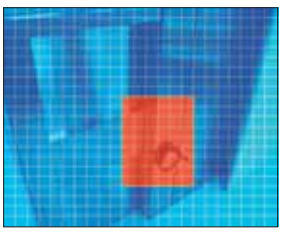
Searching recorded footage

Simplicity extends to searching through all data recorded by the DX-TL5000E. Date-time search, start/end-point search, alarm list search — all of these are instantly available from the menus. Up to 8 bookmarks can be registered for instant retrieval. The motion detection search enables you to pinpoint when something suspicious happens, such as a file being removed from a restricted-access area.

Specify any day and time for immediate playback

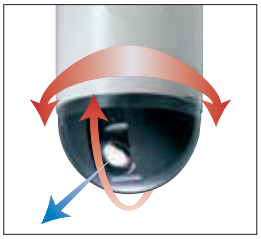
Motion detection settings

Instead of investing in motion detectors, you can rely on the DX-TL5000E to perform the same function using the output of the security cameras. Image-processing firmware inside the recorder is able to pick out visible changes within a specified area covered by any camera. You can even adjust time-base sensitivity to match either fast or slow movement.



Set the detection area with two mouse clicks

PTZ camera control



PTZ control (also available remotely over a network) lets you pan, tilt and zoom leading brand cameras. Using the number keys and jog-shuttle control on the DX-TL5000E, simply pick a camera and then move it as desired to get a better view of any area of interest. Operation is facitated by use of the optional DX-KB5UE keyboard. You can also control focus, exposure, presets and auto-pan in this way.

PTZ cameras allow remote pan, tilt and zoom control

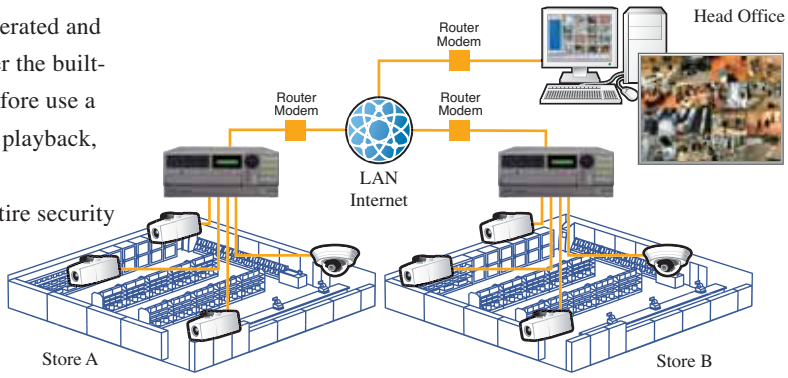
DX-KB5UE keyboard (option)

Network Connectivity

Monitoring and control of the DX-TL5000E is possible over a network (LAN & Internet).

Remote access

The DX-TL5000E can be remotely accessed, operated and configured via a LAN or the Internet using either the built-in web server or custom software. You can therefore use a laptop computer to view live camera output, for playback, or to search through recorded footage. Network connectivity adds an extra dimension to your entire security operations.



Web server capability

The web server (with adjustable transmission speed to suit network bandwidth and traffic conditions) allows live monitoring, playback, searching through recorded footage, and also partial control of recorder settings. You can choose full-screen or split-screen displays, and select specific cameras. Also, e-mail alerts can be sent out automatically to ensure rapid response in an emergency.

Software (DX-PC55)

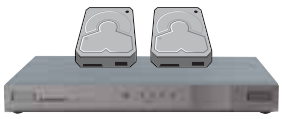
Offering an alternative and very powerful means of remote access, DX-PC55 software enables network-mediated configuration of virtually all DX-TL5000E settings as well as full control of its operation. This software offers many options, such as adjusting recording quality and recording rate, changing programmed recording times, SSL encoding and power on/off.

Superb Expandability

The DX-TL5000E offers outstanding expandability for enhanced recording and operating options.

High-capacity storage

The DX-TL5000E can be equipped with up to 3 internal hard disks, while the optional DX-ZD5UE HDD extension units can house 2 hard disks each. This means that a configuration with three 250GB internal HDs and the maximum of 7 DX-ZD5UE units, each with two 250GB HDs, would provide a total of 4.25 terabytes — sufficient to store high-quality, full-rate video footage for extended periods of emergency recording. The theoretical maximum is no less than 34 terabytes — enough storage for even the most extensive security system.



DX-ZD5UE HDD extension units (option)

Cascade connections

If you want to cover a very large facility from one location without requiring a large investment, you can make use of cascade connections between as many as 16 DX-TL5000E units. This setup enables the centralised monitoring of up to 256 security cameras using a single master unit.

PCI expansion slot,Enhanced connectivity

The rear panel features all of the connectors for the cameras, as well as for external sensors. You can use the PCI expansion slot to install a SCSI card and up to 6 external hard disks for additional storage, or attach an optional video card for XGA output to a standard computer display.

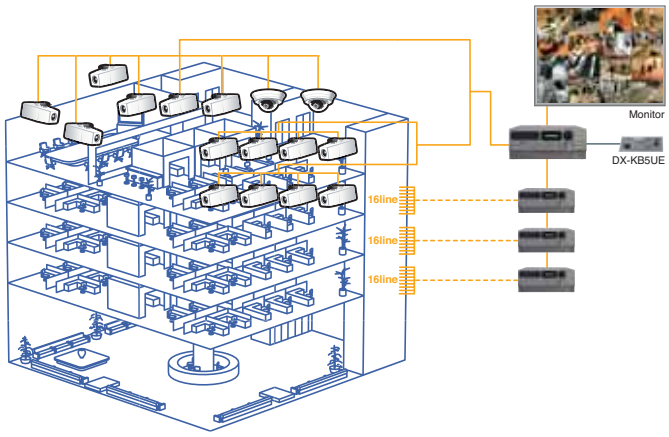
DX-GC5 Graphic Card (option)

At Work

The extraordinary versatility of the DX-TL5000E allows it to satisfy a wide variety of security demands reliably and efficiently.

Office buildings

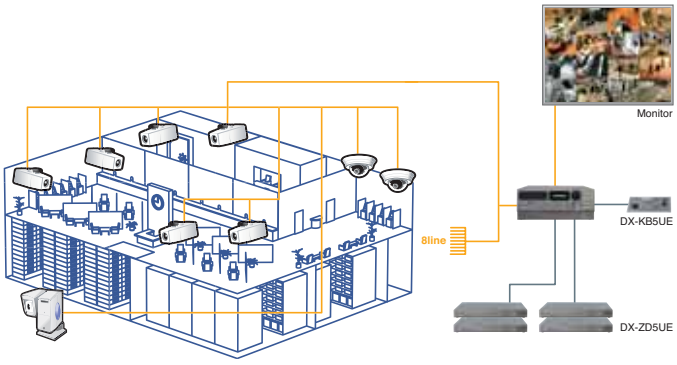
Anyone involved with the management of large office buildings will benefit from the high storage capacity and expandability of the DX-TL5000E. Multiple units can be linked via cascade connections for the monitoring and control of up to 256 cameras from a single location. Security cameras can be installed on each floor to cover corridors, lifts, doors and stairwells, with motion detection and other parameters customised for each camera.



Cascade connections enable wide-area, multi-site monitoring

Banks

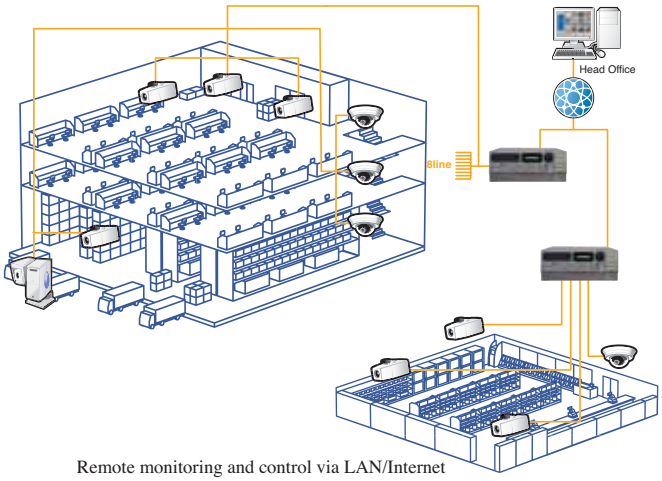
For any financial institution, security issues demand extra priority and the DX-TL5000E is more than capable of meeting the challenge. As well as offering customisable motion detection for each camera, it can be wired to a variety of external sensors and panic buttons, ensuring rapid response to alarms and emergencies. Especially important is its ability to store high-quality video footage — with up to 60 minutes of pre-alarm recording — on a reserved hard disk partition for later analysis.



Versatile High data storage options for extended recording capacity

Distribution centres

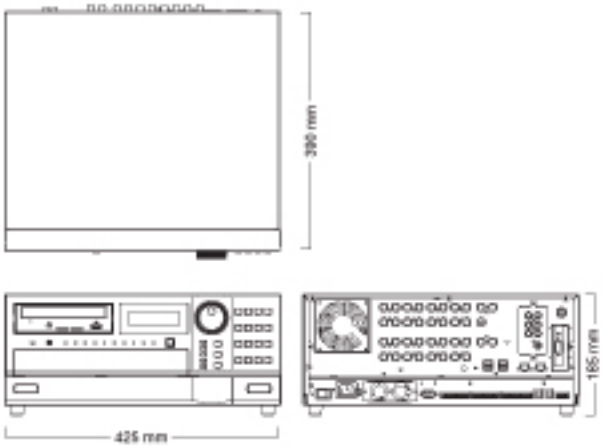
Increasingly distribution centres, whose original mission is to supply a network of stores, are also having to serve as nerve centres for centralised monitoring and management. The DX-TL5000E, however, can help keep costs down with such features as setup profile cloning, motion detection, and PTZ camera control. 24/7 remote surveillance can be carried out efficiently by one person using the recorder's built-in web server or DX-PC55 software.



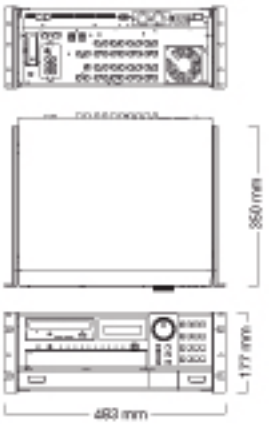
Remote monitoring and control via LAN/Internet

Dimensions

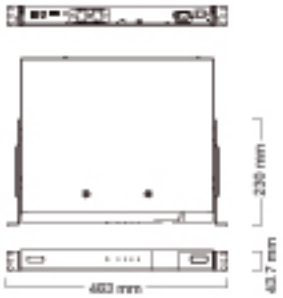
DX-TL5000E



Option: Rack Mount
DX-RM5 [for DX-TL5000E]



Option: Rack Mount
DX-RM5(ZD) [for ZD5UE]



Specifications

Item		Description
Main Recording Medium		Two 250Gb HDDs are built-in, an additional 250Gb HDDs can be added internally if required to increase on-board storage.
Archiving Medium	Internal	DVD/CD drive (DVD-R/RW, CD-R/RW)
	External	Serial Bus I/F HDD NAS SCSI I/F HDD (SCSI I/F Optional) USB memory (Copy only)
Colour System		PAL system
Signal Compression System		JPEG2000
Number of Picture Elements Processed		720 × 288 pixels : Field recording 720 × 576 pixels : Frame recording
Display rate		800 field/sec./display (50 field/ch)
Recording rate		200 field/sec. (50 field/ch)
Video Terminal	Input	16-channel input BNC : 1.0Vp-p 75Ω
	Through Output	16-channel through output BNC : 1.0Vp-p 75Ω (during AC power supply)
	Output A	BNC 1-channel : 1.0Vp-p 75Ω S terminal 1-channel : Y 1.0Vp-p 75Ω / C 0.3Vp-p 75Ω RCA output 1-channel : 1.0Vp-p 75Ω
	Output B	BNC 1-channel : 1.0Vp-p 75Ω
Audio Recording System		PCM
Audio Terminal (Optional)	Input	4-channel RCA-Pin plug : 308mW(rms), 50kΩ (Optional)
	Output	RCA-Pin plug on rear : 308mW(rms), 1kΩ (Optional)
Recording Interval		Can be set for each camera with function to estimate possible recording time
Alarm Recording		Recording time : 2sec, 5sec, 10sec, 15sec, 30sec, 45sec, 1min, 2min, 5min, 10min, 20min, 30min, 60min and contact
Pre-alarm Recording		Can be set from 1 sec. up to 1 hour (LPA)
Emergency Recording		Emergency input terminal (rear)
Power Failure Recovery Recording		Auto-re-start of unit after power failure
HDD Usage		Displays percentage of hard disk space used
Menu		GUI menu
Menu Language		English, German, French, Spanish, Italian, and Russian
Motion Detection Function		22(H) × 23(V) detection area setting, 5 steps detection sensitivity setting, recording start dot number setting

Item		Description
Clock Adjusting Function		Clock adjusting input (rear terminal)
Retrieval		Date & Time search, Alarm List search, Bookmark search, Motion search
Multiplexer Function		Split display : 4, 9, 10, 13, 16 split display (output A/B) Sequential display : 1, 4, 9 display (output A/B) Covert camera display Alarm display
Interface	Input	16-channel ALARM IN 1-channel REC IN 1-channel REC STOP IN 1-channel EMERGENCY 1-channel CLOCK ADJ
	Output	4-channel MODE OUT 16-channel ALARM OUT 1-channel CALL OUT 1-channel CLOCK ADJ OUT DC12V OUT
	RS232C	1-port for TL5000 control
	RS422/RS232C	1-port for Camera control
	RS485	1-port for Cascade control input, 1-port for output
	Remote Access	1-jack for wired remote control unit connection
	Serial Bus	2-port of USB jack on front, 4-port on rear
	LAN	2-port of 10/100Base-T/TX LAN-A for External Recording, LAN-B for communication
Network	WEB	Live viewing, Playback, Search
	PC Software (DX-PC24)	Live viewing, Playback (Access to multiple DVRs), Search, Image data downloading, PTZ Control, Alarm notification, Configuration, Recorder control, Remote relay output control
Power Supply		AC100-240V 50/60Hz
Power Consumption		0.3A (240V)
Operational Conditions		Temperature : 5°C-40°C Humidity : 30%-80% Altitude : Max 2000m
Dimensions (W × D × H)		425 × 390 × 165mm
Weight		13.4kg (capacity : 250GB)
Accessories		AC power code (UK and Continental plug), USB mouse, Installer's manual (English), User's manual (English, German, French, Spanish, Italian, Dutch and Russian)

Recording capacity (field recording without audio)

The below table shows the approximate recording time with a 250GB HDD. The camera operation setting is set to the same interval for all cameras. d : day, h : hour

Picture grade \ Number of frames/sec.	200	100	66.7	50	40	33.3	25	16	13	10	8	4	2	1	0.5	0.25	0.125
Super	8h	16h	1d	1d9h	1d17h	2d1h	2d18h	4d7h	5d7h	6d22h	8d15h	17d7h	34d14h	69d4h	138d8h	276d17h	553d11h
Fine	9h	19h	1d5h	1d15h	2d	2d10h	3d6h	5d2h	6d9h	8d3h	10d4h	20d9h	40d18h	81d12h	163d	326d1h	652d2h
High	11h	23h	1d11h	1d23h	2d11h	2d23h	3d23h	6d4h	7d15h	9d21h	12d8h	24d18h	49d13h	99d3h	198d6h	396d12h	793d
Standard	15h	1d6h	1d21h	2d12h	3d3h	3d18h	5d1h	7d21h	9d17h	12d15h	16d19h	31d14h	63d4h	126d8h	252d16h	505d6h	1010d19h
Basic	20h	1d17h	2d14h	3d11h	4d8h	5d5h	6d23h	10d20h	13d5h	17d9h	21d17h	43d11h	86d23h	173d23h	347d23h	695d23h	1391d22h
Long	1d9h	2d18h	4d3h	5d13h	6d23h	8d8h	11d3h	17d10h	21d19h	27d21h	34d20h	69d16h	139d9h	278d19h	557d14h	1115d4h	2230d8h

*The picture number of frame record setting becomes double against field record setting.

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