

**NEC**

**Ultra-Portable Projector**

**Ultra-Portable Projector**

# **MultiSync® LT 80™**

Projector  
User's Manual



**NEC**

NEC Technologies

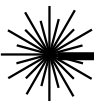
## Precautions

Please read this manual carefully before using your NEC MultiSync LT80 Projector and keep the manual handy for future reference.

Your serial number is located beneath the main power switch on the back of your MultiSync LT80. Record it here:

## CAUTION

**LASER RADIATION-  
DO NOT STARE INTO BEAM**



**WAVE LENGTH: 670 nm  
MAX. OUTPUT: 1 mW  
CLASS II LASER PRODUCT**

## WARNING

TO PREVENT FIRE OR SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. DO NOT USE THIS UNIT'S GROUNDED PLUG WITH AN EXTENSION CORD OR IN AN OUTLET UNLESS ALL THREE PRONGS CAN BE FULLY INSERTED. DO NOT OPEN THE CABINET. THERE ARE HIGH-VOLTAGE COMPONENTS INSIDE. ALL SERVICING MUST BE DONE BY QUALIFIED NEC SERVICE PERSONNEL.

### DOC Compliance Notice

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

## CAUTION

TO PREVENT SHOCK, DO NOT OPEN THE CABINET. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED NEC SERVICE PERSONNEL.



This symbol warns the user that uninsulated voltage within the unit may be sufficient to cause electrical shock. Therefore, it is dangerous to make any kind of contact with any part inside of the unit.



This symbol alerts the user that important information concerning the operation and maintenance of this unit has been provided. The information should be read carefully to avoid problems.

## RF Interference

### WARNING

The Federal Communications Commission does not allow any modifications or changes to the unit EXCEPT those specified by NEC Technologies in this manual. Failure to comply with this government regulation could void your right to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

# Important Safeguards

These safety instructions are to ensure the long life of your projector and to prevent fire and shock. Please read them carefully and heed all warnings.

## Installation

1. For best results, use your projector in a darkened room.
2. Place the projector on a flat, level surface in a dry area away from dust and moisture.
3. Do not place your projector in direct sunlight, near heaters or heat radiating appliances.
4. Exposure to direct sunlight, smoke or steam can harm internal components.
5. Handle your projector carefully. Dropping or jarring can damage internal components.
6. Do not place heavy objects on top of the projector.

## Cleaning

1. Unplug the projector before cleaning.
2. Clean the cabinet periodically with a damp cloth. If heavily soiled, use a mild detergent. Never use strong detergents or solvents such as alcohol or thinner.
3. Use a blower or lens paper to clean the lens, and be careful not to scratch or mar the lens.

## Lamp Replacement

- Be sure to replace the lamp when the Status light comes on. If you continue to use the lamp after 1000 hours of use, the lamp bulb may shatter, and pieces of glass may be scattered in the lamp case. Do not touch them as the pieces of glass may cause injury. If this happens, contact your NEC dealer for lamp replacement.
- Allow a minimum of ONE minute to elapse between turning the lamp off and on. High voltage is applied to the lamp immediately when the power is turned on. Therefore turning the power off and quickly back on may shorten the life of your lamp and result in damage to your projector.

7. If installing the projector on the ceiling:
  - a. The ceiling must be strong enough to support the projector and the installation must be in accordance with any local building codes.
  - b. The projector must be installed by qualified NEC service personnel.

## Power Supply

1. The projector is designed to operate on a power supply of 100-120 or 220-240 V 50/60 Hz AC. Ensure that your power supply fits this requirement before attempting to use your projector.
2. Handle the power cable carefully and avoid excessive bending. A damaged cord can cause electric shock or fire.
3. If the projector is not to be used for an extended period of time, disconnect the plug from the power outlet.

## Fire and Shock Precautions

1. Ensure that there is sufficient ventilation and that vents are unobstructed to prevent the build-up of heat inside your projector. Allow at least 3 inches (10cm) of space between your projector and a wall.
2. Prevent foreign objects such as paper clips and bits of paper from falling into your projector. Do not attempt to retrieve any objects that might fall into your projector. Do not insert any metal objects such as a wire or screwdriver into your project. If something should fall into your projector, disconnect it immediately and have the object removed by a qualified NEC service person.
3. Do not place any liquids on top of your projector.

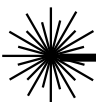
- **Do not look into the lens while the projector is on. Serious damage to your eyes could result.**
- **Do not look into the laser pointer while it is on and do not point the laser beam at another person. Serious injury could result.**

**ATTENTION**

RISQUE D'ELECTROCUTION NE PAS OUVRIR

**ATTENTION**

**RAYONNEMENT LASER NE PAS  
REGARDER DANS LE FAISCEAU**



**LONGUEUR D'ONDE: 670 nm  
MAX. SORTIE: 1 mW  
APPREIL A LASER DE CLASSE 2**

**AVERTISSEMENT**

AFIN DE REDUIRE LES RISQUES D'INCENDIE OU D'ELECTROCUTION, NE PAS EXPOSER CET APPAREIL A LA PLUIE OU A L'HUMIDITE. AUSSI, NE PAS UTILISER LA FICHE POLARISEE AVEC UN PROLONGATEUR OU UNE AUTRE PRISE DE COURANT SAUF SI CES LAMES PEUVENT ETRE INSEREES A FOND. NE PAS OUVRIR LE COFFRET, DES COMPOSANTES HAUTE TENSION SE TROUVENT A L'INTERIEUR. LAISSER A UN PERSONNEL QUALIFIE LE SOIN DE REPARER CET APPAREIL.

**DOC avis de conformation**

DOC avis de conformation

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.



Ce symbole a pour but de prévenir l'utilisateur de la présence d'une tension dangereuse, non isolée se trouvant à l'intérieur de l'appareil. Elle est d'une intensité suffisante pour constituer un risque d'électrocution. Eviter le contact avec les pièces à l'intérieur de cet appareil.



Ce symbole a pour but de prévenir l'utilisateur de la présence d'importantes instructions concernant l'entretien et le fonctionnement de cet appareil. Par conséquent, elles doivent être lues attentivement afin d'éviter des problèmes.

**Importantes précautions de sécurité**

Les points suivants sont des précautions de sécurité importantes destinées à garantir une longue durée de service du projecteur et afin d'éviter un incendie et des risques d'électrocution. S'assurer de lire attentivement ces précautions de sécurité et respecter tous les avertissements décrits ci-dessous.

**Installation**

1. Pour un fonctionnement optimal, utiliser le projecteur dans une pièce sombre.
2. Placer le projecteur sur une surface à niveau et dans un endroit sec exempt de poussières et d'humidité.
3. Ne pas placer le projecteur en plein soleil, près d'appareils ménagers ou d'autres appareils de chauffage.

4. La fumée, la vapeur et l'exposition aux rayons directs du soleil risquent de détériorer sérieusement les composants internes.
5. Eviter des manipulations brusques lors du déplacement du projecteur, car un choc violent pourrait endommager les composants internes.
6. Ne pas déposer d'objets lourds sur le dessus du projecteur.
7. Lors de l'installation du projecteur au plafond, respecter les instructions suivantes.
  - a. Le plafond doit être suffisamment solide pour supporter le poids du projecteur et il doit être installé selon les codes de construction locaux.
  - b. Le projecteur doit être installé par un personnel qualifié.

## Alimentation

1. Le projecteur est conçu pour fonctionner à 100-120 ou 220-240VCA 50/60Hz. S'assurer que la tension d'alimentation locale satisfait cette exigence avant d'utiliser le projecteur.
2. Manipuler le câble d'alimentation avec précaution et éviter de le plier excessivement. Un cordon endommagé risque de provoquer une électrocution ou un incendie.

## Remplacement de la lampe

- Assurez-vous de bien remplacer la lampe lorsque le voyant d'usure s'allume. Si vous continuez d'utiliser la lampe après 1000 heures d'utilisation, l'ampoule peut se briser et des brisures de verre peuvent être éparpillées dans le compartiment de la lampe. Ne les touchez pas car elles peuvent vous blesser. Dans ce cas, contactez votre revendeur NEC afin de procéder au remplacement de la lampe.
- Attendez minimum UNE minute après avoir éteint la lampe avant de la rallumer. Une haute tension est immédiatement appliquée à la lampe quand celle-ci est mise sous tension. Par conséquent, éteindre, puis tout de suite rallumer peut abréger la vie de votre lampe et endommager votre projecteur DLP.

## Précautions pour éviter un incendie ou une électrocution

1. Une ventilation appropriée doit être assurée afin d'éviter une accumulation de chaleur à l'intérieur du projecteur. S'assurer que les trous de ventilation ne sont pas obstrués. Laisser un espace d'au moins 10 cm (quatre pouces) entre le projecteur et les murs.

3. Si le projecteur n'est pas utilisé pendant une période prolongée, retirer la fiche de la prise secteur.

## Nettoyage

1. Débrancher le projecteur de la prise d'alimentation avant le nettoyage.
2. Nettoyer régulièrement le coffret avec un chiffon doux. S'il y a des taches tenaces, utiliser une solution d'un détergent doux. Ne jamais utiliser de détergents puissants ou des solvants, tel que l'alcool ou un diluant pour nettoyer le projecteur.
3. Utiliser un appareil diffuseur chauffant ou du papier de nettoyage de lentille disponible dans le commerce pour nettoyer la lentille.

Ne pas frapper ou rayer la surface de la lentille, car des défauts risquent de se produire sur la surface de la lentille.

2. Eviter que des objets étrangers, des agrafes, des clous et du papier, par exemple, pénètrent à l'intérieur du projecteur. Ne pas essayer de récupérer ces objets soi-même ou ne pas insérer des objets métalliques, des fils et des tourne-vis, par exemple à l'intérieur du projecteur. Si un objet tombe à l'intérieur du projecteur, le débrancher immédiatement et contacter un réparateur qualifié pour retirer l'objet.
  3. Ne pas placer des liquides sur le dessus du projecteur.
- **Ne regardez pas à l'intérieur de l'objectif lorsque le projecteur est en marche. Vous risquez de vous blesser gravement aux yeux.**
  - **Ne regardez pas à l'intérieur de la flèche laser lorsque celle-ci est en marche et ne dirigez pas le rayon laser sur une autre personne. Vous risquez de provoquer une blessure grave.**

## NEC MultiSync® Projector Products

NEC Technologies, Inc. (hereafter NECTECH) warrants this product to be free from defects in material and workmanship under the following terms.

### HOW LONG IS THE WARRANTY?

Parts and labor are warranted for (2) two years from the date of the first customer purchase. The lamp is warranted for 1000 hours of operating time or six months, whichever comes first.

### WHO IS PROTECTED?

This warranty may be enforced only by the first purchaser.

### WHAT IS COVERED AND WHAT IS NOT COVERED

Except as specified below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed in the U.S.A., Canada and Mexico by NECTECH or which is not purchased in the U.S.A., Canada or Mexico from an authorized NECTECH dealer. If you are uncertain as to whether a dealer is authorized, please contact NECTECH at 800-836-0655.

2. Costs of initial technical adjustments (set-up), including adjustment of user controls. These costs are the responsibility of the NECTECH dealer from whom the product was purchased.

3. Payment of shipping charges.

### HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on your product, consult the dealer from whom you purchased the product.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage. Please be prepared to describe or demonstrate the problem to your dealer.
3. For the name of the nearest NECTECH authorized service center, call NECTECH at 800-836-0655.

### LIMITATION OF IMPLIED WARRANTIES

ALL IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE LENGTH OF THIS WARRANTY.

### EXCLUSION OF DAMAGES

NECTECH'S LIABILITY FOR ANY DEFECTIVE PRODUCT IS LIMITED TO THE REPAIR OR REPLACEMENT OF THE PRODUCT AT OUR OPTION. NECTECH SHALL NOT BE LIABLE FOR:

2. Any product on which the serial number has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
  - a. Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
  - b. Repair or attempted repair by anyone not authorized by NECTECH.
  - c. Any shipment of the product (claims must be presented to the carrier).
  - d. Removal or installation of the product.
  - e. Any other cause which does not relate to a product defect.
4. Cartons, carrying cases, batteries, external cabinets, magnetic tapes, or any accessories used in connection with the product.

### WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. But we will not pay for the following:

1. Removal or installation charges.

1. DAMAGE TO OTHER PROPERTY CAUSED BY ANY DEFECTS IN THIS PRODUCT, DAMAGES BASED UPON INCONVENIENCE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, COMMERCIAL LOSS; OR

2. ANY OTHER DAMAGES, WHETHER INCIDENTAL, CONSEQUENTIAL OR OTHERWISE. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS AND/OR DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU.

### HOW STATE LAW RELATES TO THE WARRANTY

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

FOR MORE INFORMATION, TELEPHONE 800-366-5213

NEC TECHNOLOGIES, INC.  
1250 N. Arlington Heights Road, Suite 500  
Itasca, Illinois 60143-1248

---

**NOTE:** All products returned to NECTECH for service **MUST** have prior approval. To get approval, call NEC Technologies at 800-836-0655.

---

## 1. Introduction

Introduction To The MultiSync LT80 Projector .....	13
How Do You Get Started? .....	15
What's In The Box? .....	15
Getting To Know Your MultiSync LT80 Projector .....	17
Front Features .....	17
Rear/ Left Side Features .....	18
Top Features .....	19
Terminal Panel Features .....	21
Remote Control Features .....	25

## 2. Installation

Setting Up Your MultiSync LT80 Projector .....	29
Selecting A Location .....	30
Using A Tabletop Or Cart .....	31
Moving The Projector .....	33
Using The Ceiling Mount .....	35
Ceiling Installation .....	35
Wiring Diagram .....	37-38
Connecting Your PC Or Macintosh Computer .....	39
Connecting Your Document Camera .....	45
Connecting Your VCR, DVD Player Or Laser Disc Player .....	45
Connecting An External Monitor .....	46
Connecting Your Remote Mouse Receiver .....	47

## 3. Operation

General Controls .....	49
Using The Menus .....	51
Menu Descriptions & Functions .....	53
Source Menu (Source Icons) .....	53
Image Adjust Menu(Sound And Picture Control Icons) .....	55
Power Menu(Projector Control Icons) .....	59
Settings Menu(Maintenance Icons) .....	61

## 4. Maintenance

Replacing The Lamp .....	63
Remote Control Battery Installation .....	65
Operating Range .....	66

## 5. Troubleshooting

Status Light Messages .....	71
Common Problems & Solutions .....	73

## 6. Specifications

Optical .....	75
Electrical .....	76
Mechanical .....	76
D-Sub Pin Assignments .....	79
Timing Chart .....	81
PC Control Command Reference .....	83
Cable Connection .....	87

This section introduces you to your new MultiSync LT80 Projector, provides a list of materials that comes with your projector and describes the features and controls.

### **Congratulations On Your Purchase Of The MultiSync LT80 Projector**

The MultiSync LT80 is one of the very best projectors available today. The MultiSync LT80 enables you to project precise images up to 300 inches across (measured diagonally) from your PC or Macintosh computer (desktop or notebook), VCR, document camera, or even a laser disc player.

You can use the projector on a tabletop or cart, you can permanently mount it on a ceiling\*, or you can use MultiSync LT80 Projector to project images from behind the screen. You can use the remote control with the remote mouse receiver to operate the mouse on your PC or Mac.

#### **Features you'll enjoy :**

- Battery powered remote control operates all functions of projector, can be used to control computer operation and has a built in laser pointer.

\* Installing the MultiSync LT80 Projector on the ceiling must be done by authorized NEC technicians. Consult your NEC dealer for more information.

- Projector is compatible with VGA, SVGA and XGA using NEC's AccuBlend Intelligent Pixel Blending Technology.

---

*Note: Composite video standards are as follows:*

*NTSC: U.S. TV standard for video in U.S. and Canada.*

*PAL: TV standard used in western Europe*

*SECAM: TV standard used in France and Eastern Europe*

*NTSC4.43: TV standard used in Middle East countries*

---

- Brightness rating of 600 ANSI lumens allows you to make presentations with the lights on.
- The LT80 enables projection of high resolution images from computers, VCRs, DVD players, laser disk players and document cameras.
- Crisp, colorful and clear images projected for your presentations.
- Screen image remains square when projecting to the line of vision.



## How Do You Get Started?

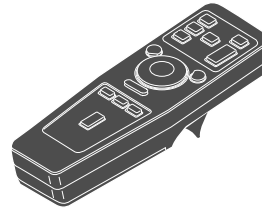
The fastest way to get started is to take your time and do everything right the first time. Take a few minutes now to watch the introductory video and review the manual. This may save you hours later on. At the beginning of each section of the manual you'll find an overview. If the section doesn't apply, you can skip it.

## What's In The Box?

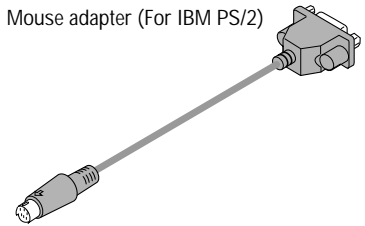
Make sure your box contains everything listed. If any pieces are missing, contact your dealer. Please save the original box and packing materials if you ever need to ship your MultiSync LT80 Projector.

- NEC MultiSync LT80 Projector
- Carrying Case
- Remote Control With Built-In Laser Pointer
- Remote Control Case
- Remote Mouse Receiver
- Signal Cable (15-Pin Mini D-Sub To 15-Pin Mini D-Sub Connector)
- Mouse Adapters for IBM PS/2 and Mac
- Serial Cable
- Monitor Adapter for Macintosh
- Power Cable
- Two AA Batteries
- Introductory Video
- User's Manual
- Registration Card
- Quick Start Guide

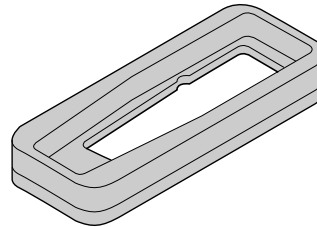
Remote control



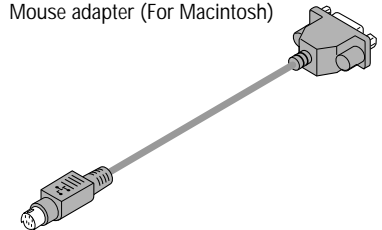
Mouse adapter (For IBM PS/2)



Remote control case



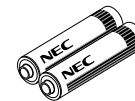
Mouse adapter (For Macintosh)



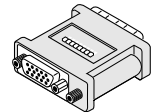
Remote mouse receiver



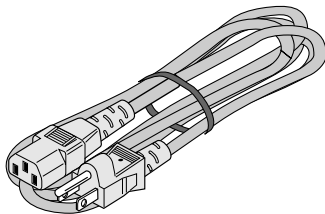
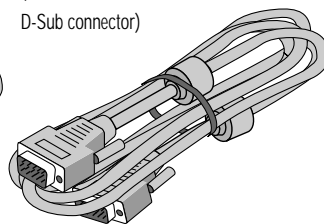
Batteries (AA × 2)



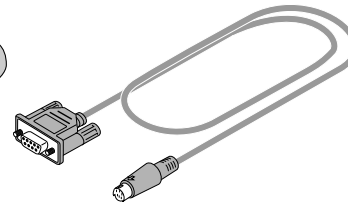
Monitor adapter for Macintosh



Power cable

Signal cable  
(15-Pin Mini D-Sub To 15-Pin Mini D-Sub connector)

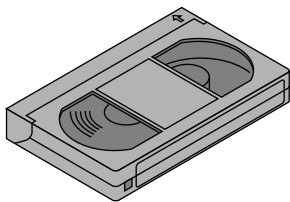
Serial cable



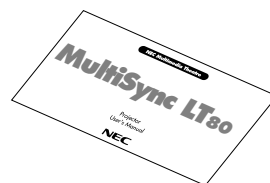
Carrying case



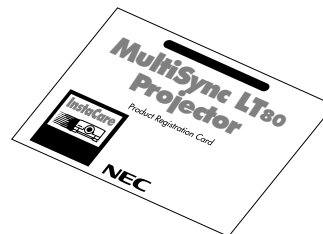
Introductory video



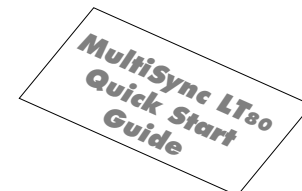
User's manual



Registration card

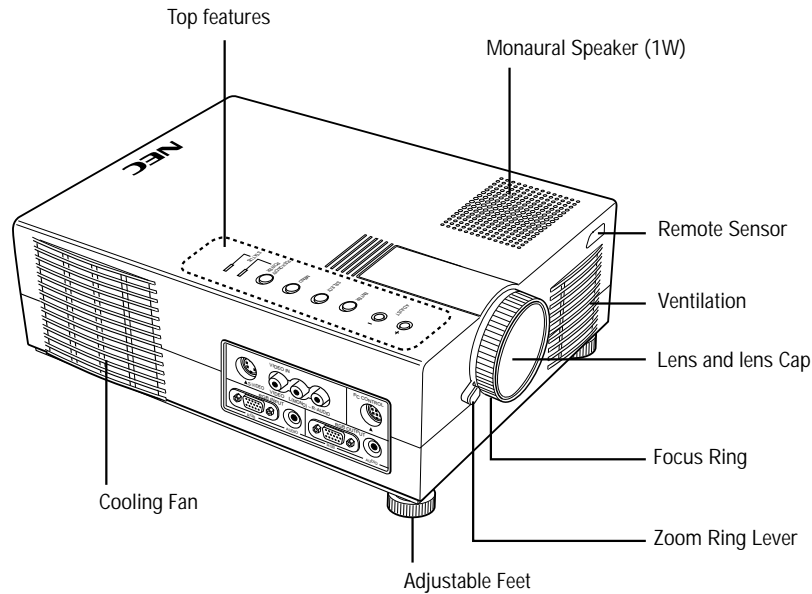


Quick Start Guide

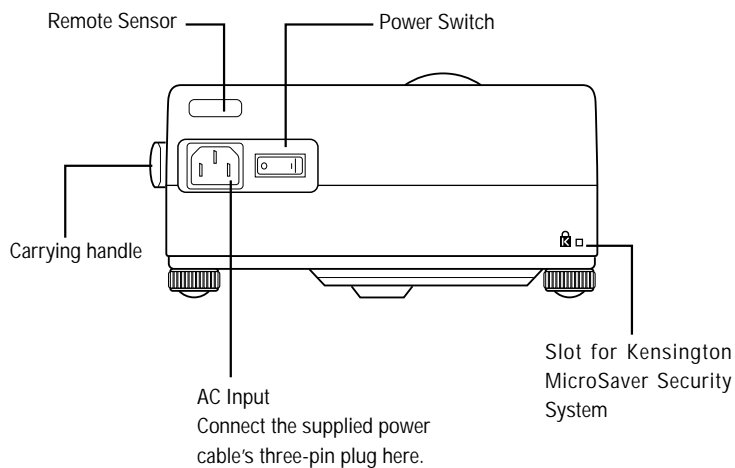


# Getting To Know Your MultiSync LT80 Projector

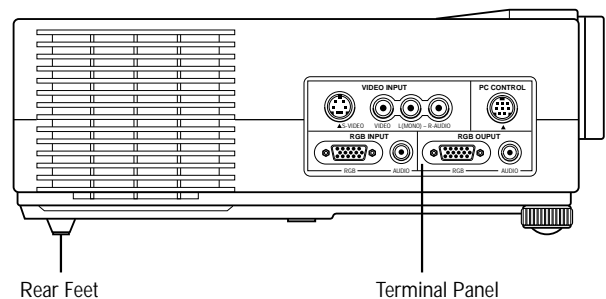
## Front Features



## Rear Features



## Left Side Features



## Top Features

### 1 Power Button

Use this button to turn the power on and off when Main Power Switch is on and the projector is on standby. (When this button is pressed and held for at least two seconds, the “Display Mute” mode will be canceled.)

### 2 Menu Button

Displays the on- screen menu.

### 3 Select Button

After you press the “Menu” button, use this button to select the menu icon of the item you wish to adjust.

### 4 Enter Button

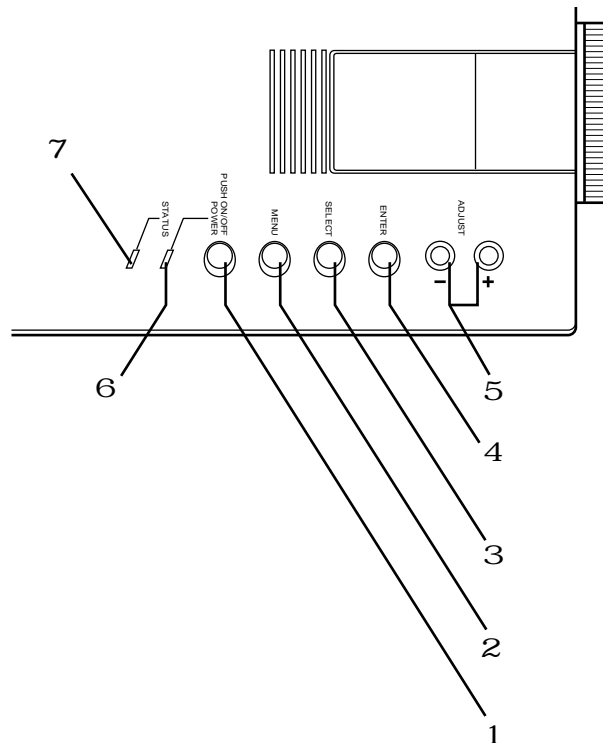
Executes your menu selection.

### 5 (+) (-) Adjust Button

Use these buttons while you're in the Image Adjust mode to change the level of a selected menu item. These buttons are also used to set an item in the Power or Settings menus.

### 6 Power Indicator

When the projector is switched On, the green LED blinks for about one minute, then lights up.



If the main power is on and you switch it off by pressing POWER OFF on the remote control or the POWER button on the projector, the green LED blinks for one minute, then lights up and the projector goes on standby.

\* The projector will not accept operation instructions for the one minute during which the LED is blinking during switching on or off as described above.

### 7 Status Indicator

When this is lit red continually, it's warning you that the projection lamp has exceed 1000 hours of service. After this light appears, it is advisable to replace the projection lamp as soon as possible. (See page 63.)

When the operating time of the lamp exceeds 1000 hours, the STATUS indicator is lit red continually. In addition the message "LAMP USAGE XX HOURS" appears continually when the on-screen menu is not displayed.

If this light blinks red rapidly, it indicates that the lamp house is not attached properly; if the light blinks slowly it means the projector's internal temperature is too hot to operate safely. See the Status Light Messages on page 71 for more details.

## Terminal Panel Features

This panel is located in the side and is where you connect your cables.

### 1 Video Input

Connect a VCR, laser disk player, or document camera here to project video.

#### Left Channel/Mono Audio Input Jack

This is your left channel audio input for stereo sound coming from video equipment or audio system. This also serves as your monaural audio input.

#### Right Channel Audio Input Jack

This is your right channel audio input for stereo sound.

#### S-Video Input

Here is where you connect S-Video input from an external source like a VCR.

### 2 PC Control Port

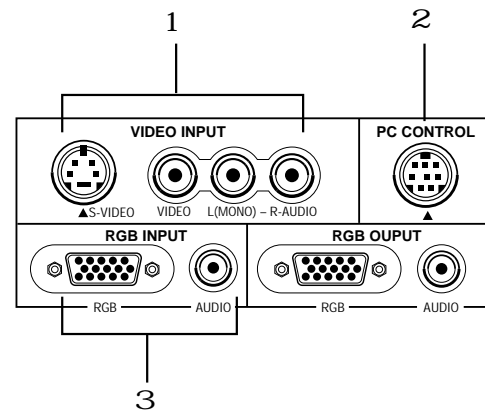
Use this port to connect your PC to control the MultiSync LT80 Projector. This enables you to use your PC and serial communication protocol to control the projector. If you are writing your own program, command reference are on pages 83 to 86.

### 3 RGB Input Connector (Mini D-Sub 15 pin)

Connect your PC or other RGB equipment such as IBM or compatible computers. Use the signal cable that's supplied to connect to a PC.

#### RGB Audio Input Mini Jack

This is where you connect RGB audio output from a computer or another RGB source.




---

**NOTE:** S-Video provides more vivid color and higher resolution than the traditional composite video format.

---

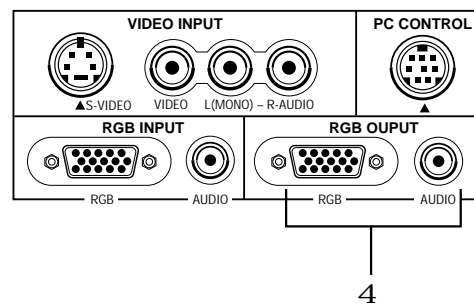
#### 4 RGB Output Connector (Mini D-Sub 15 pin)

You can use this connector to loop your computer image to an external monitor from the RGB input source.

Even if VIDEO is selected, the video image input to the RGB INPUT terminal is output.


#### Audio Output Mini Jack

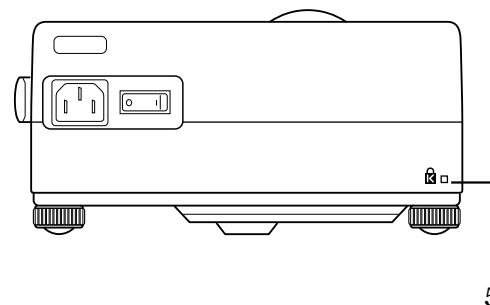
You can use this jack to loop your audio to an external monitor from the VIDEO audio input or RGB audio input source.



#### 5 Built-in Security Slot ( )

This security slot supports the MicroSaver<sup>®</sup> Security System.

MicroSaver<sup>®</sup> is a registered trademark of Kensington Microware Inc. The logo  is trademarked and owned by Kensington Microware Inc.



## Remote Control Features

You can use your wireless remote control to operate your MultiSync LT80 Projector. With the remote mouse receiver connected to your computer, you can also use the projector's remote control to operate your computer. (See pages 47 and 48 to connect the remote mouse receiver to your computer.)

*NOTE: If you are using a Macintosh computer, you can click either the right or left button to activate the mouse.*

### 1 Left Click Button

Use this button to enter your menu selection. It works the same as the "Enter" button on the cabinet.

### 2 Laser Pointer

Beams a laser light when "Laser" button is pressed.

### 3 Infrared Transmitter

Direct the remote control toward the remote sensor on the projector cabinet or the remote mouse receiver.

### 4 LED

Flashes when any button is pressed.

### 5 Power On And Off

If your main power switch is turned on, you can use these buttons to turn your MultiSync LT80 Projector on and off.

### 6 Video Button

Press to select an NTSC, PAL, SECAM or NTSC4.43 compatible video source from a VCR, DVD player, laser disc player or document camera.

### 7 Volume Buttons

Press (+) to increase the volume and (-) to decrease it.

### 8 S-Video Button

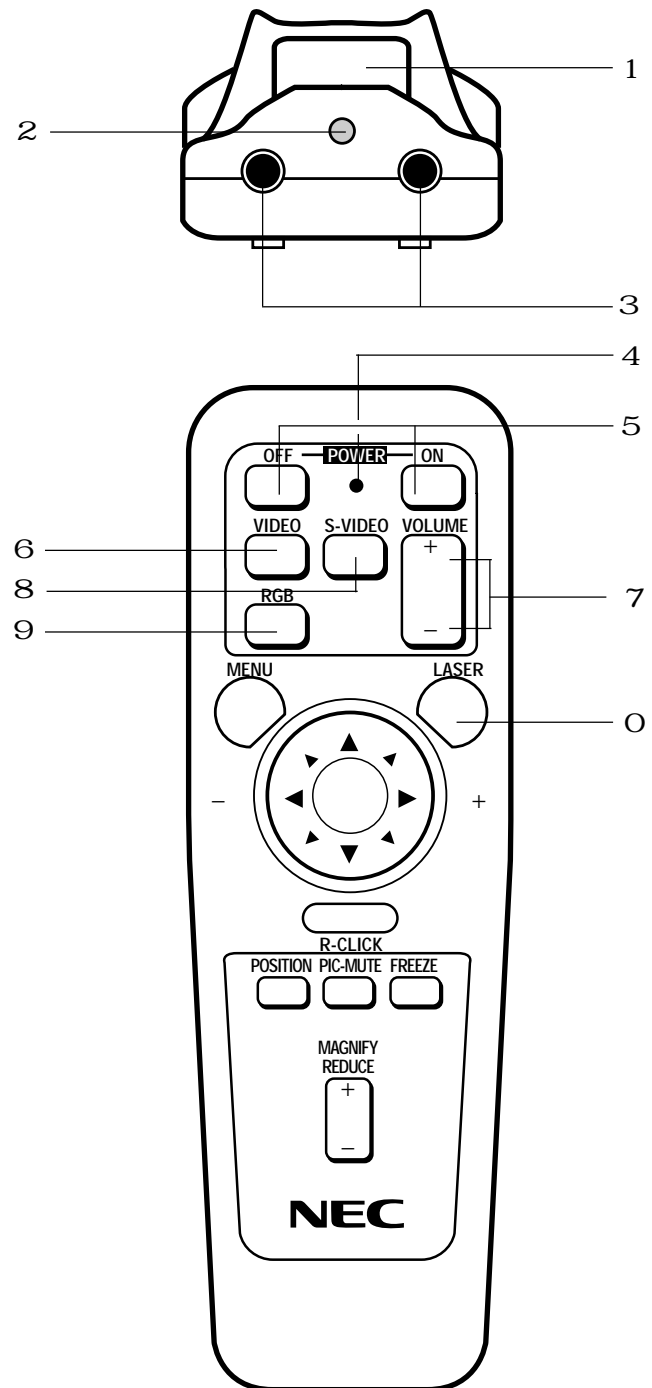
Press to select an S-Video source from a VCR or other S-Video source.

### 9 RGB Button

Press to select a video source from a computer connected to your RGB port.

### 0 Laser Button

Press and hold this button to activate the laser pointer. When lit, you can use the laser to draw your audience's attention to a red dot that you can place on any object within 30 feet (10 m).



### A Menu Button

Use this button to call up the On-Screen Menu so you can adjust and set the image. After you press this button, it will light up. During this time you can use the mouse pointer and right/left click buttons to make menu selections. If no buttons are pressed within 10 seconds the menu turns off.

### B Mouse Pointer Buttons

Works as a mouse for your computer. This button is also used to adjust screen position. Push (+) or (-) to select the submenu you want to adjust.

### C Right Click Button

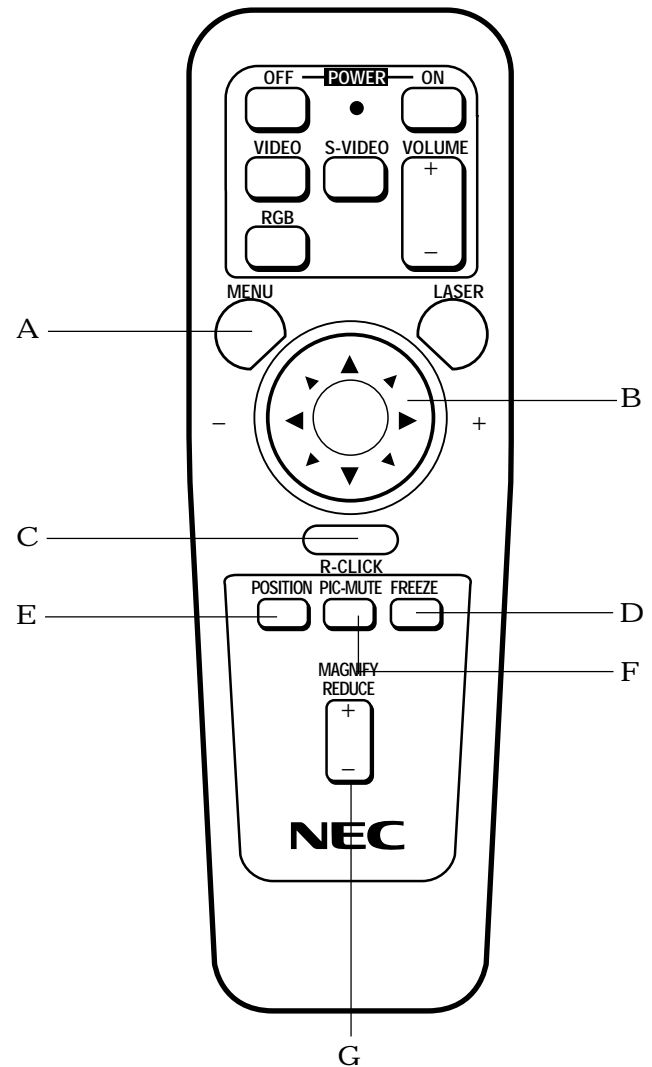
Press this button to exit "Menus" or "Position."

### D Freeze Button

This button will freeze a picture. Press again to resume motion.

### E Position Button

When image is magnified, press this button to activate the mouse. This allows you to select the portion of the image displayed on screen. Position button will remain lit for 10 seconds or until right click button is pushed.




---

*NOTE: When you are adjusting Position, the Mouse Pointer button is used to move the picture.*

---

### F Picture Mute Button

This button turns off the image for a short period of time. Press again to restore the image.

### G Magnify/Reduce Button

Use the (+) or (-) button to adjust the image size up to 400%.

---

*NOTE: You cannot use Menu and Position at the same time.*

---

### Remote Control Precautions

- Do not look into the laser pointer while it is on.
- Do not point the laser beam at a person.
- Handle the remote control carefully.
- If the remote control gets wet, wipe it dry immediately.
- Avoid excessive heat and humidity.
- If you will not be using the remote control for a long time, remove the batteries.
- Do not mix new and old or different types of batteries.

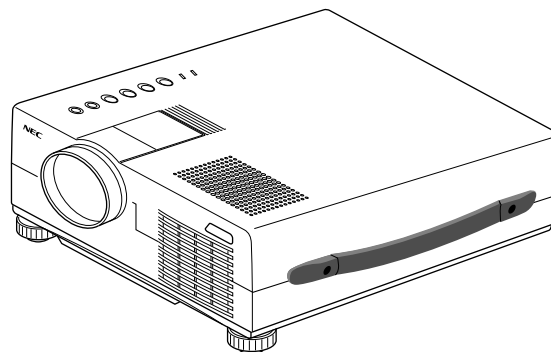
This section describes how to set up your MultiSync LT80 projector and how to connect video and audio sources.

## Setting Up Your MultiSync LT80 Projector

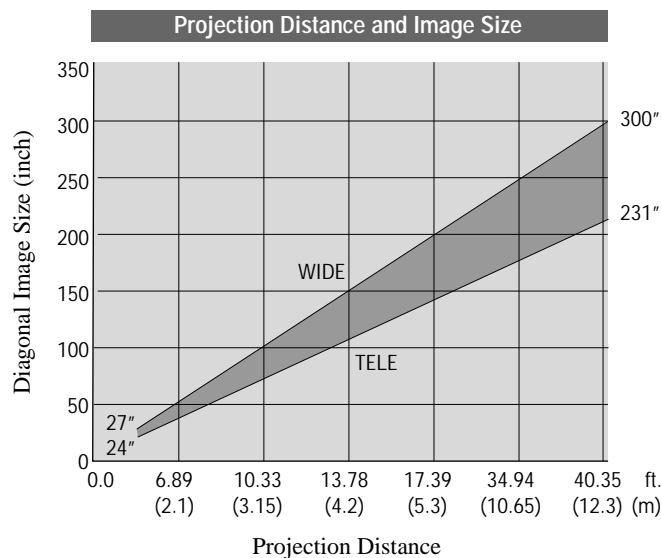
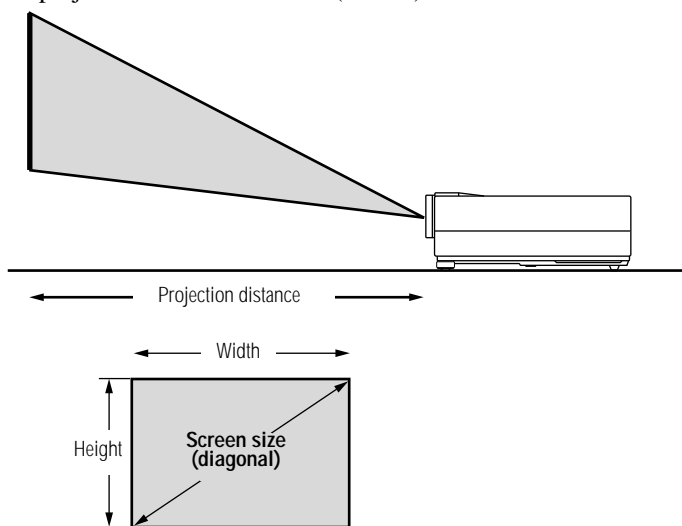
Your MultiSync LT80 Projector is simple to set up and use. But before you get started, you must first:

1. Determine the image size
2. Set up a screen or select a non-glossy white wall onto which you can project your image.

**Carrying The Projector** Always carry your projector by the handle. Ensure that the power cord and any other cables connecting to video sources are disconnected before moving the projector. When moving the projector or when it is not in use, cover the lens with the lens cap.



**Selecting A Location** The further your projector is from the screen or wall, the larger the image. The minimum size the image can be is approximately 24" (0.61 m) measured diagonally when the projector is roughly 4 feet (1.2 m) from the wall or screen. The largest the image can be is 300" (7.6 m) when the projector is about 40.35 feet (12.3 m) from the wall or screen.





## Using A Tabletop Or Cart

1. Place your projector on a flat level surface at the optimal distance from the screen or wall so you realize the size image you want. (Avoid having bright room lighting or sun light directly on the screen or wall where you'll be projecting the image.)
2. Connect the power cable, remove the lens cap and turn the projector on. (If no input signal is available, the projector will display a background image.)
3. Ensure that the projector is square to the screen.
4. Move the projector left or right to center the image horizontally on the screen. (A)
5. To center the image vertically (B).  
(There is approximately 5.5 degrees of up and down angle adjustment using the adjustable front feet.)
6. Fine tune the image's vertical position by adjusting the front feet of the projector.

### Adjustment method

- A. Start with the adjustable feet screwed in the locked position.
- B. Screw down the feet until proper angle is reached.

---

**Note:** Adjust feet so that lens surface is parallel to the screen. If you use the projector with the screen tilted, the picture will be distorted.

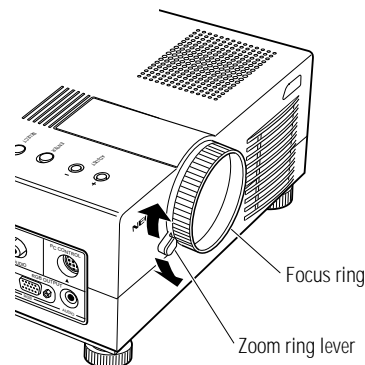
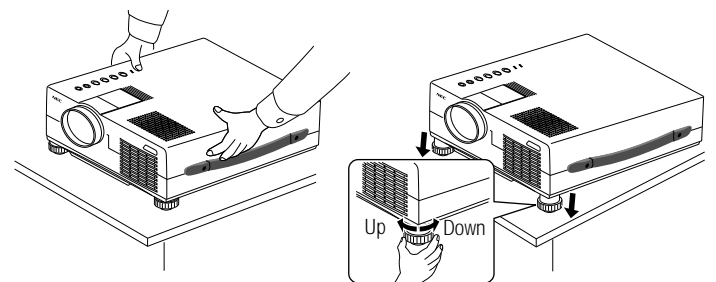
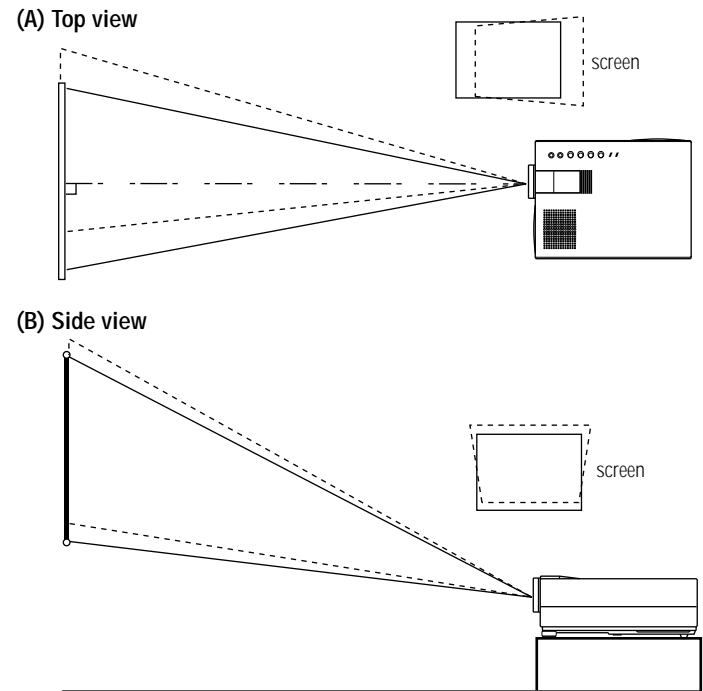
---

7. Adjust the size of the image using the zoom ring lever on the lens.

---

**Note:** The set up angle of the projector should not exceed 15 degrees, otherwise lamp life could decrease dramatically.

---



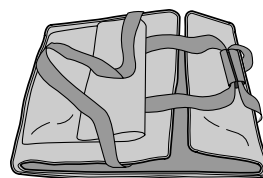
## Moving the projector

When moving the projector, use the carrying case that came with it.

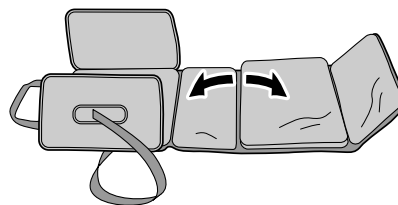
How to store the projector in the carrying case

1. Remove any accessories.
2. Unfold carrying case.
3. Put the projector in the large compartment of the case.
4. Zip up the sides of the case.

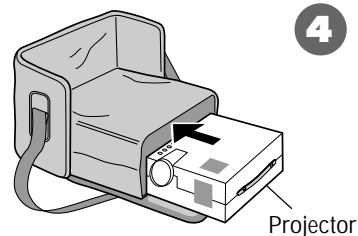
1



2

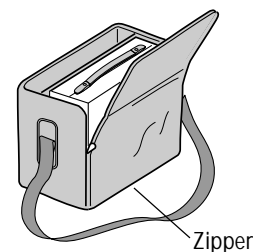


3



Projector

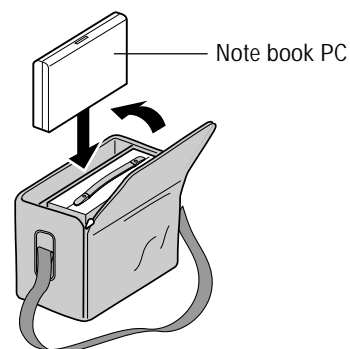
4



Zipper

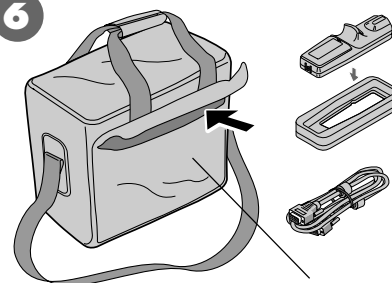
5. Place notebook computer into carrying case.
  6. Store remote control and other accessories in front porch.
- \* Carry projector carefully. Bumping projector may cause damage.

5



Note book PC

6



Other Accessories

When restoring the remote control, place the case on the functional face to prevent possible malfunction.

## ⚠ WARNING

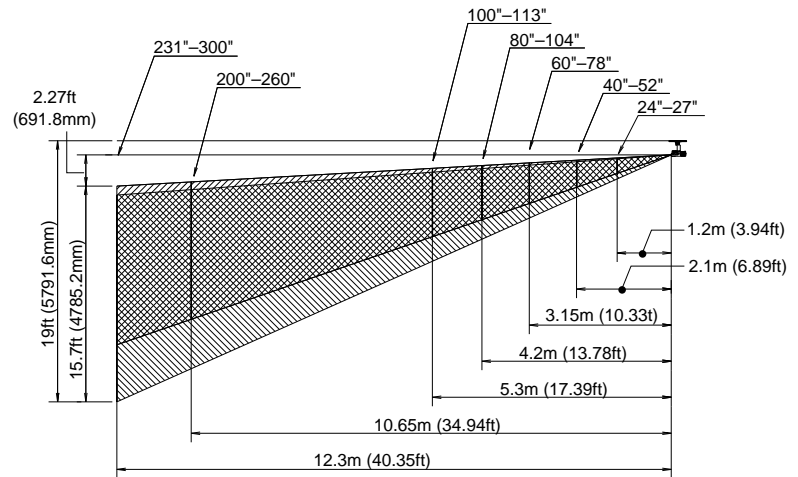
- Only use your projector on a solid, level surface. If the projector falls to the ground, you can be injured and the projector severely damaged.
- Do not use the projector where temperatures vary greatly. The projector must be used at temperatures between 41°F (5°C) and 95°F (35°C).
- Do not expose the projector to moisture, dust, or smoke. This will harm the screen image.
- Ensure that you have adequate ventilation around your projector so heat can dissipate. Do not cover the vents on the bottom or the side of the projector.

## Ceiling Installation

Installing your MultiSync LT80 Projector on the ceiling must be done by a qualified technician. Contact your NEC dealer for more information.

Do not attempt to install the projector yourself.

**NOTE :** Distances may vary  $\pm 5\%$ .

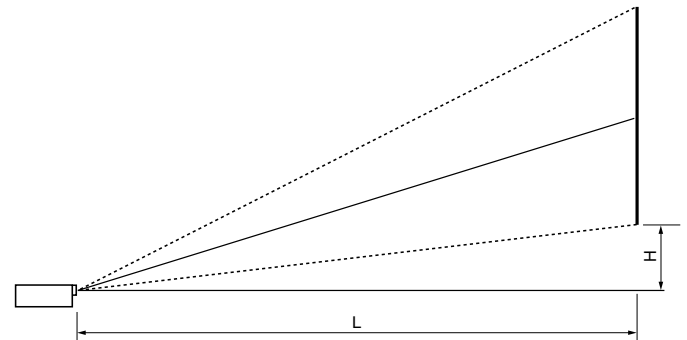


If your projector is mounted on the ceiling and your image is upside down, use the “Menu” and “Select” buttons on your projector cabinet or (▲) (▼) buttons on your remote control to correct the orientation. (See page 60.)

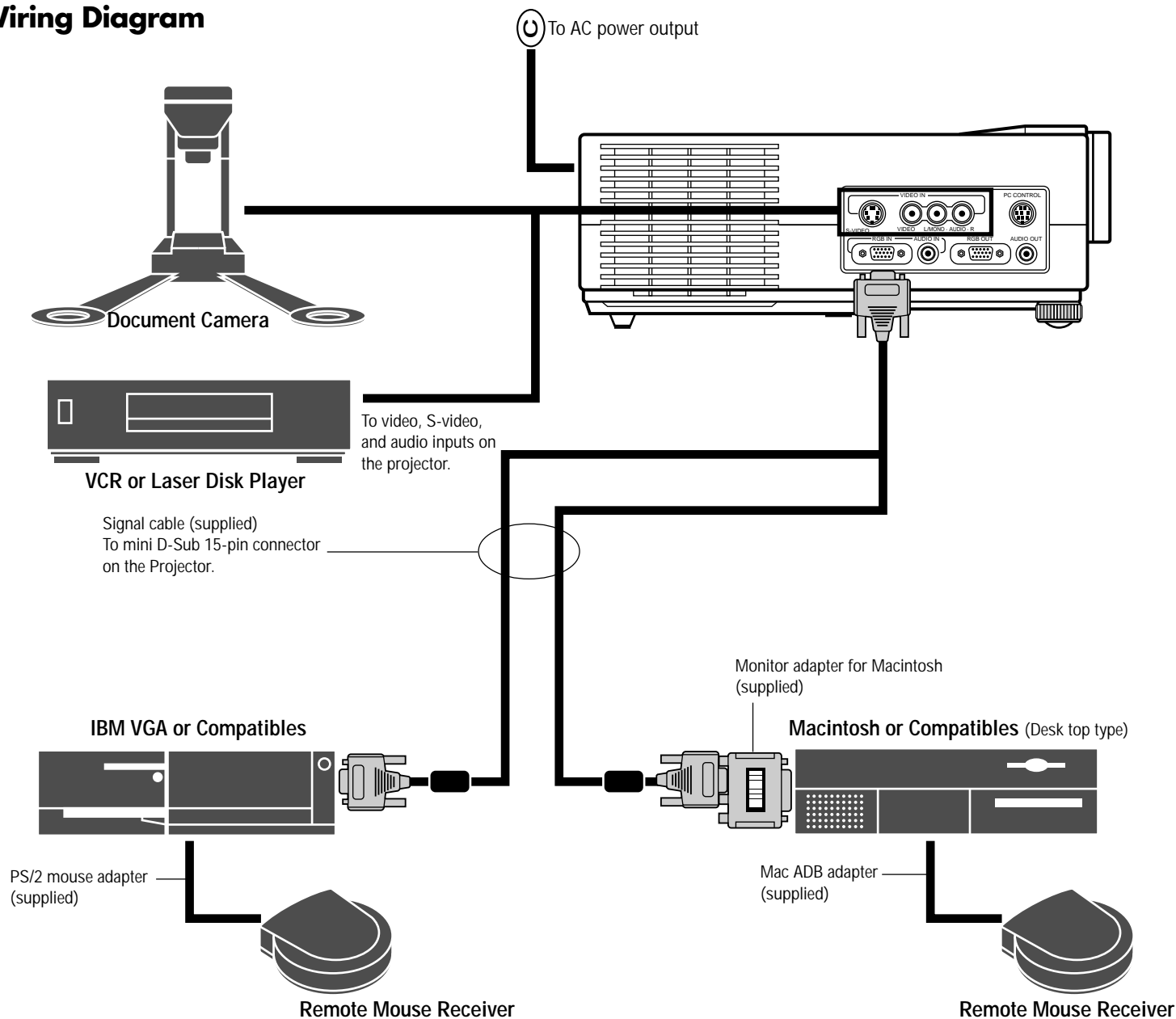
## Projection distance and screen size examples

- Horizontal projection position — Lens centered left to right
- Vertical projection position

Screen size Inches	Projection distance L ft. Wide (W)	Tele (T)	Dimension H inch Both W & T
24	—	3.94ft (1.20m)	2.76" (7.0cm)
40	5.25 ft (1.60m)	6.89ft (2.10m)	4.8" (12.2cm)
60	7.87 ft (2.40m)	10.33ft (3.15m)	6.93" (17.6cm)
80	10.66ft (3.25m)	13.78ft (4.20m)	9.37" (23.8cm)
100	13.3ft (4.05m)	17.39ft (5.30m)	11.46" (29.1cm)
200	26.9ft (8.20m)	34.94ft (10.65)	23.58" (59.9cm)
300	40.35ft (12.30m)	—	35.08" (89.1cm)



## Wiring Diagram



### Remote Control Guideline

1. Plug the serial cable with the remote mouse receiver into your computer's mouse port and restart your computer to gain remote mouse control.
2. When using the remote control's built-in infrared mouse on a laptop computer, the laptop's mouse, trackball or trackpad will be disabled. Disconnect the infrared receiver and restart your computer to regain trackball or trackpad mouse control.
3. If the screen goes blank while using your remote control, it may be the result of the computer's screen-saver or power management software. If you accidentally hit the OFF button on the remote control, wait one full minute and then press the ON button to resume.

## Connecting Your PC Or Macintosh Computer

Connecting your PC or Macintosh computer to your MultiSync LT80 Projector will enable you to project your computer's screen image for an impressive presentation. All of these following display standards are supported:

VGA 640×480 for graphics	VGA 640×400 for graphics
VGA 640×350 for graphics	VGA 720×400 for text
VGA 720×350 for text	SVGA 800×600
Macintosh at 640×480	Macintosh at 832×624

To connect to a PC, Macintosh or computer equipped with an SVGA/VGA adapter or compatible graphics adapter, simply:

1. Turn off the power to your projector and computer.
2. If your PC does not support SVGA/VGA you will need to install an SVGA/VGA graphics board. Consult your computer's owner's manual for your SVGA/VGA configuration. If you need to install a new board, see the manual that comes with your new graphics board for installation instructions.
3. Use the signal cable that's supplied to connect your PC or Macintosh computer to the projector. For Macintosh, use the supplied monitor adapter to connect to your computer's video port.
4. Turn on the projector and the computer.
5. If the projector goes blank after a period of inactivity, it may be caused by a screen saver installed on the computer you've connected to the projector.

When using a Macintosh with the LT80, set the DIP switch of the supplied monitor adapter according to your resolution. After setting, restart your Macintosh.

See the following pages for setting of the DIP switch.

- When using with a Macintosh, VGA/SVGA (800×600) is recommended if your Macintosh supports this mode.
- When using with a Macintosh PowerBook, output may not be set to 800×600 unless “mirroring” is off on your PowerBook. Refer to owner’s manual supplied with your Macintosh computer for mirroring.

---

**NOTE:** A Video Adapter cable manufactured by Apple Computer is needed for a PowerBook which does not have a mini D-Sub 15-pin connector.

---

### Settings for Macintosh adapter

Macintosh models applied	Setting Mode (Fixed resolution)	Setting required to be selected resolution on Mac after restarting.
Desktop type and PowerBook with 800×600 LCD panel	16” fixed mode (output is 832×624)	Set to VGA/SVGA (800×600)
PowerBook with 640×480 LCD panel	13” fixed mode (output is 640×480)	Set to 17” multi-scan mode (640×480)
Desktop type with AccuBlend	19” fixed mode (output is 1024×768)	Set to 17” multi-scan mode (1024×768)

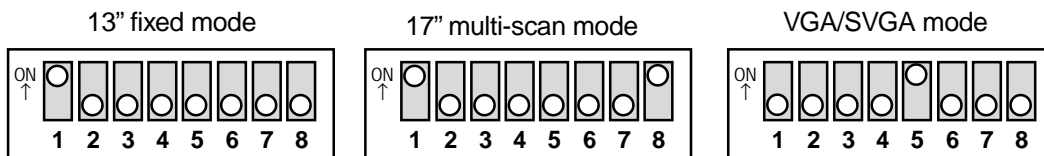
## Settings for Monitor Mode

Number of DIP switch	S1	S2	S3	S4	S5	S6	S7	S8
	Monitor size							
15" multi-scan mode /16"-13"	ON				ON			
17" multi-scan mode /19"-13"	ON							ON
19" multi-scan mode /21"-13"	ON						ON	
13" fixed mode /640 × 480	ON							
VGA/SVGA mode					ON			
16" fixed mode /832 × 624						ON		
19" fixed mode /1024 × 768				ON				

**NOTE:** For setting other than display modes supported by your Macintosh and LT80, using of the DIP switch may bounce a image slightly or may display nothing. If this happens, set the DIP switch to the 13" fixed mode and then restart your Macintosh. After that, restore to a displayable mode and then restart the Macintosh again.

Make sure that LT80 and your Macintosh are connected with the monitor adapter and the supplied signal cable (mini D-Sub 15-pin connector) and then restart your Macintosh.

## Examples of DIP switch setting



**NOTE:** Refer to your computer's owner's manual for more information about your computer's video output requirements and any special identification or configuring your projector's image and monitor may require.

## Changing Video Resolutions

Depending on your computer's graphic capability, you may be able to select one of several resolutions. Generally a computer- either a PC or Macintosh- with 1 meg. of memory will run:

640×480 at 16.7 million colors (24 bit Truecolor)

800×600 at 65 thousand colors.

1024×768 at 256 colors.

As the resolution increases, the number of colors you can run decreases. With 2 meg. of memory a computer will run:

640×480 at 16.7 million colors (24 bit Truecolor).

800×600 at 16.7 million colors (24 bit Truecolor).

1024×768 at 65 thousand colors.

1280×1024 at 256 colors.

## Windows 95

There are two methods you can use to change your resolution.

### Method 1

1. Move your cursor to the background image and click.
2. In the "Properties" menu, select "Settings."
3. Change your resolution and click "OK."

## Macintosh

1. Under the Apple menu, select "Control Panels" and open "Monitors."
2. Click and open "Options."
3. Select your new resolution and click "OK."

If you have an NEC monitor connected to your Macintosh, you may have a "DPI-On-The-Fly" extension that enables you to change your resolution directly. The "DPI-On-The-Fly" icon is under your Apple menu.

4. You may be asked to reboot for the changes to take affect, or you'll get a message that "Windows is about to resize your display." When asked if you want to keep your settings, select "Yes."

### Method 2

1. Click on your "My Computer" icon.
2. Open "Control Panel" and select "Display."
3. Change your resolution and click "OK." after the new resolution is selected.
4. You may be asked to reboot for the changes to take affect, or you'll get a message that "Windows is about to resize your display." When asked if you want to keep your settings, select "Yes."

## Windows 3.1

1. Click on the "Main" icon and open "Control Panel."
2. Select "Change System Settings" and click on "Option."
3. Choose "Change Display Settings."
4. Select the resolution you want.
5. Choose the current drive or another.
6. Restart Windows for the changes to take affect.

## Connecting Your Document Camera

You can connect your MultiSync LT80 Projector to a document camera. To do so, simply:

1. Turn off the power to your projector and document camera.
2. Use a standard video cable to connect your document camera to the Video input on your projector.
3. Turn on the projector and the document camera.

---

**NOTE:** Refer to your document camera's owner's manual for more information about your camera's video output requirements.

---

## Connecting Your VCR, DVD Player Or Laser Disc Player

Use common RCA cables (not provided) to connect your VCR or laser disc player to your MultiSync LT80 Projector. To make these connections, simply:

1. Turn off the power to your projector and VCR, DVD player or laser disc player.
2. Connect one end of your RCA cable to the video output connector on the back of your VCR, DVD player or laser disc player, connect the other end to the Video input on your projector. Use standard RCA audio patch cords to connect the audio from your VCR, DVD player or laser disc player to your projector (if your VCR, DVD player or laser disc player has this capability). Be careful to keep your right and left channel connections correct for stereo sound.
3. Turn on the projector and the VCR, DVD player or laser disc player.

---

**NOTE:** Refer to your VCR, DVD player or laser disc player owner's manual for more information about your equipment's video output requirements.

---

## Connecting An External Monitor

You can connect a separate, external monitor to your projector to simultaneously view on a monitor the image you're projecting. To do so:

1. Turn off the power to your projector and computer, document camera or video source.
2. Use a 15-pin cable to connect your monitor to the RGB OUT connector on your LT80 projector.
3. Turn on the projector and the computer, document camera or video source.

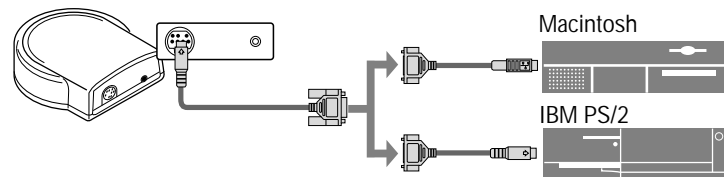
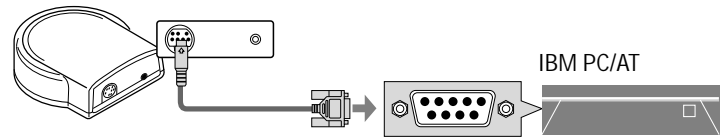


## Connecting Your Remote Mouse Receiver

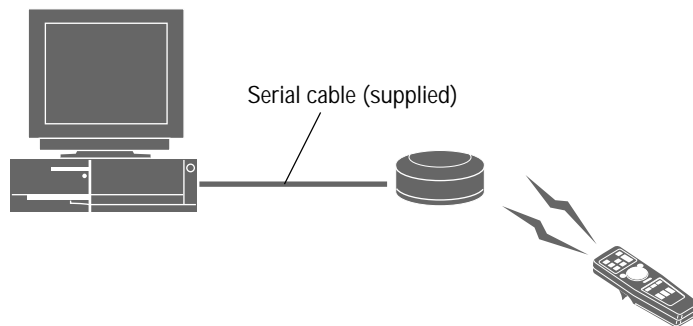
The remote mouse receiver enables you to operate your computer's mouse functions from the NEC MultiSync LT80 remote control. It is a great convenience for clicking through your computer-generated presentations.

To connect the remote mouse receiver:

1. Turn off your computer.
2. For PCs: Remove your current mouse and connect the serial cable from the remote mouse receiver to your PC's mouse port. (Use the 6-pin adapter for connecting to a PS/2 computer.)  
For Macintosh: Remove your current mouse from your computer, attach the Macintosh adapter to the remote mouse receiver's serial cable, and connect the receiver to your mouse port.
3. When the remote mouse receiver is installed, it will disable your regular mouse, disconnect the remote mouse receiver and restart your computer.



### ■ The Remote Mouse Receiver as a mouse for your computer



This section describes how to select a computer or video source and how to adjust the picture and sound.

**General Controls** Before you turn on your MultiSync LT80 Projector, ensure that the computer or video source is turned on and that your lens cap is removed.

1. **Turn On The Projector** The main power switch is on the back panel of the MultiSync LT80 Projector. By turning this switch on, the projector will go into its standby mode and the power light will glow amber. Only after you press the "On" button on the remote control or projector cabinet will the power light turn to green and the projector become ready to use.

---

*NOTE: To turn the projector on and off with just the back panel switch, use the menu and enable the "auto start" feature. (See page 59. )*

---

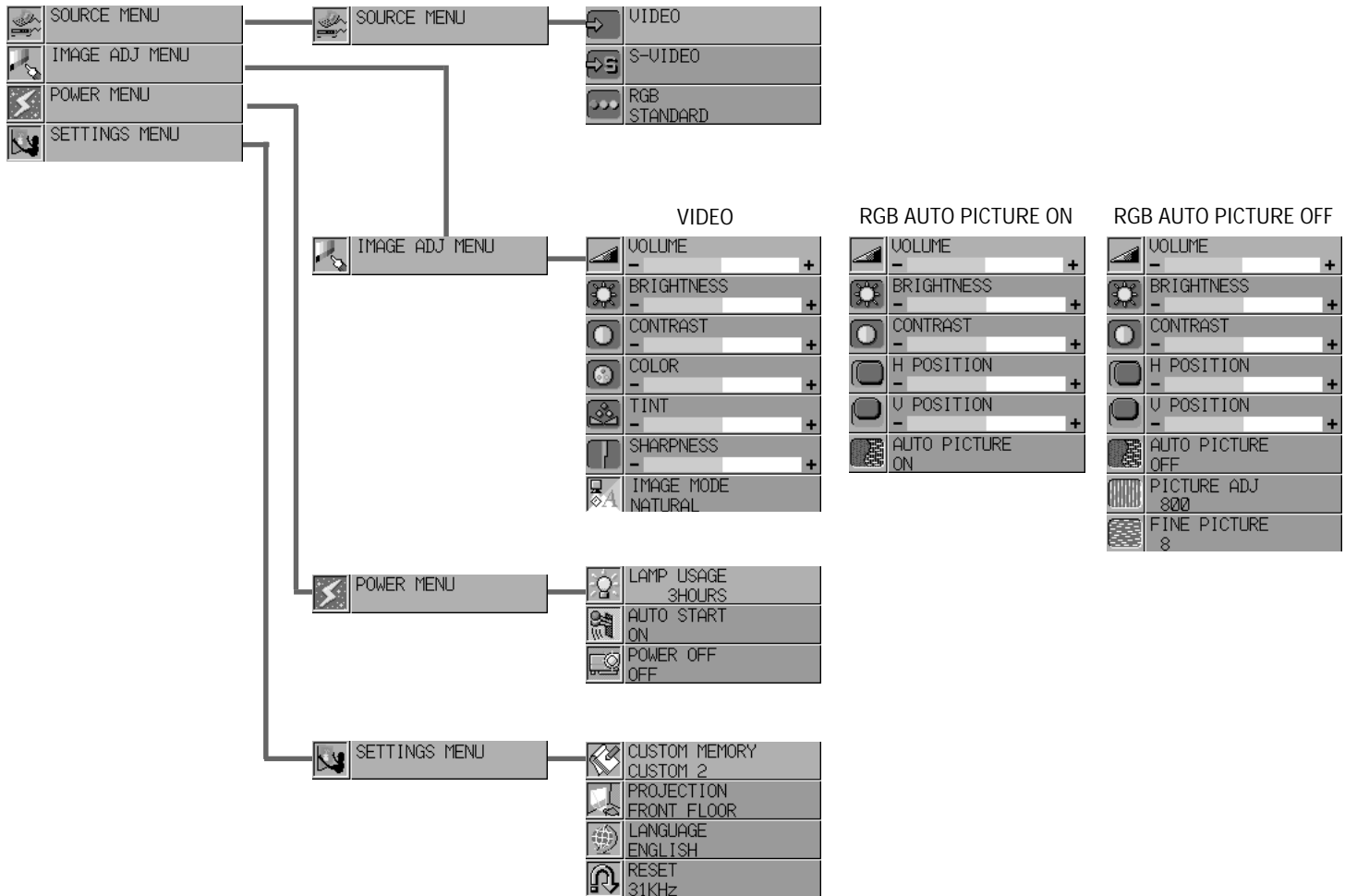
2. **Select The Computer Or Video Source** Press the "Video" (VCR, DVD player, document camera, or laser disc player), "S-video", or "RGB" (computer) button on the remote control to display the image. Or press the "Menu" button on the cabinet and use the icons to select your video source: "Video", "S-Video", or "RGB".
3. **Adjust The Image Size** Adjust the size of the screen with the zoom ring lever on the projector.
4. **Focus** Adjust the focus with the focus ring on the projector.
5. **Turning Off The Projector** First press the "off" button on the remote control or the projector cabinet. The power light will glow amber. Then turn off the main power switch on the back panel. The power light will go out.

## IMPORTANT:

- The projector should be unplugged if it will not be used for an extended period.
- To turn off the image briefly (five minutes or less), use the "Picture Mute" button instead of turning the projector off and on.
- The projector will display a black, or blue image if no input signal is present.
- Do not turn the projector off and then immediately back on. The projector needs to cool for a minute before it can be restarted.

## Using The Menus

1. Press the "Menu" button on the remote control or projector cabinet to display the Main Menu.
2. Press the "Select" button on the projector cabinet or (▲) (▼) buttons on your remote control to highlight the menu for the item you want to adjust.
3. Press the "Enter" button on the projector cabinet or the "Left Click" button on the remote control to select a submenu or item.
4. Adjust the level or turn the selected item "on" or "off" by using the "Adjust" (+) or (-) buttons on the remote control or cabinet. The on-screen gauge will display your changes. The (+) button is "on" and (-) is "off".
5. The change is stored until you adjust it again.
6. Repeat steps 2-5 to adjust an additional item, or press "Right-Click" on your remote control to quit the menu display.



## Menu Descriptions & Functions

### Source Menu



Enables you to select a video source such as a VCR, DVD player, laser disk player, computer or document camera depending on what is connected to your inputs. Press the "Select" button on the projector cabinet or (▲) (▼) buttons on your remote control to highlight the menu for the item you want to adjust



### Video

Selects device connected to your video input (VCR, document camera, laser disk player or DVD player).

### S-Video

Selects device connected to S-Video input (Laser disk player, S-VHS VCR or DVD player).

### RGB

Selects computer connected to your RGB input. Use the "Adjust" (+) or (-) buttons to select a standard\* or one of six\*\* custom settings you can create and store. Press the "Enter" button on the cabinet or the "Left Click" button on the remote control to save your selection.

---

**NOTE:** If a previously saved custom memory location is used with a new or different input signal it may not sync up, producing a distorted image, or no image at all. If so, follow the instructions below:

- 1) Disconnect the signal cable so that there is no input signal. In this condition the on-screen message will be displayed.
- 2) Select RGB standard from the source menu.
- 3) Connect the signal cable again.

---

**NOTE:**

\* Standard is normally used and it can be user changed and automatically recalled.

\*\* "Custom 6" is read only. This feature is useful when an SVGA image (800×600) is displayed with a notebook computer supported by XGA (1024×768).

---

## Image Adjustment Menu



Provides access to controls for your image and sound. Use the “Select” button on the projector cabinet or (▲) (▼) buttons on your remote control to highlight the menu for the item you want to adjust.

The volume, brightness, contrast, color, tint, sharpness and Image Mode controls are available for Video or S-Video sources.

The volume, brightness, contrast, horizontal position, vertical position and auto picture controls are available for RGB source.



### Volume

Use the “Adjust” (+) or (–) buttons to adjust the volume.

### Brightness

Use the “Adjust” (+) or (–) buttons to adjust the brightness.

### Contrast

Use the “Adjust” (+) or (–) buttons to adjust the contrast.

### Color\*

Use the “Adjust” (+) or (–) buttons to adjust the color.

### Tint\*

Use the “Adjust” (+) or (–) buttons to adjust the tint.

### Sharpness\*

Use the “Adjust” (+) or (–) buttons to adjust the sharpness.

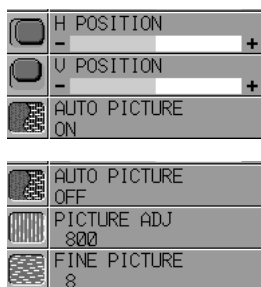
### Image Mode\*

Use the “Adjust” (+) or (–) buttons to choose “Normal” for a regular picture “Natural” for true color reproduction, or “Document Camera” for a document camera or other low APL picture.

---

#### NOTE:

- 1) Flicker may appear on a freeze-frame picture with a Video or S-Video source. If this happens, select the Document Camera mode using the Image mode icon on the Image Adjustment Menu, and then adjust the contrast and other items for an optimal image.
  - 2) A frame may freeze for a brief period of time when a video is played back in fast-forward or fast-rewind with a Video or S-Video source. If this happens, select the Natural mode (for cinema) using the Image Mode icon on the Image Adjustment Menu.
-



### Horizontal Position\*\*

Use the “Adjust” (+) button to move the image right; (–) to move it left.

### Vertical Position\*\*

Use the “Adjust” (+) button to move the image up; (–) to move it down.

### Auto Picture\*\*

Use the “Adjust” (+) button to turn this feature on so “Picture” and “Fine Picture” adjustments are made automatically. Use the “Adjust” (–) button to turn this feature off so you can make “Picture and Fine Picture” adjustments manually.

### Picture Adjustment \*\* (when AUTO PICTURE is off)

Use this icon with the “Fine Picture Adjustment” to fine tune the computer image or to remove any vertical banding that might appear. This function adjusts the clock frequencies to eliminate the vertical banding in the image. Press the “Adjust” (+) and (–) buttons until the banding disappears. This adjustment may be necessary when you connect your computer for the first time. This adjustment is made automatically when the Auto Picture is turned on.

### Fine Picture \*\* (when AUTO PICTURE is off)

Use this icon to adjust the clock phase or to reduce video noise, dot interference or cross talk. (This is evident when part of your image appears to be shimmering.) Use the “Adjust” (+) and (–) buttons to adjust the image. Use the Fine Adjustment only after the Picture Adjustment is complete. This adjustment is made automatically when the Auto Picture is turned on.

---

#### NOTE:

- ★ *Color, Tint, Sharpness and Image Mode controls will not work with an RGB source. The Tint control will not work with a PAL or SECAM source.*
  - ★★ *Horizontal and Vertical position controls, and Picture, Fine Picture and Auto Picture adjustments will not work with a Video or S-Video source.*
-

## Power Menu



Provides access to Lamp Usage information and the Auto Start and Power Management features. Use the “Select” button on the projector cabinet or (▲) (▼) buttons on your remote control to access a submenu. Then press “Adjust” (+) or (–) to choose a specific option.



### Lamp Usage

This tells you how long the lamp has been in operation. It is recommended that you replace a lamp after 1000 hours of service. After you install a new lamp, select this icon and press and hold the “Power On” button on the remote control for ten seconds to reset the lamp clock back to zero.

---

**NOTE:** The projector will turn off and go into stand by mode after 1100 hours of service. If this happens, press the “Power Off” button on the remote control for ten seconds to reset the lamp clock back to zero. Do this only after replacing the lamp.

---

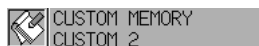
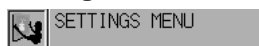
### Auto Start

Turns the projector on automatically when the main power switch is turned on. This eliminates the need to always use the “Power” button on the remote control or projector cabinet. Press (+) to turn this feature on and (–) to turn it off.

### Power Management

When “Power Off” is on and there is no RGB video input for five minutes or more, the projector will automatically turn itself off. Press the (+) to turn this feature on and (–) to turn it off. This feature does not work with Video or S-Video sources.

## Settings Menu



Enables you to set preferences and other operating options. Use the “Select” button on the projector cabinet or (▲) (▼) buttons on your remote control to access the submenu you want.

### Custom Memory

This enables you to save your current settings for an RGB source in one of five memories, Custom 1-5.

To change the STANDARD settings, proceed as follows:

1. Connect your computer to the MultSync LT80.
2. Select the "STANDARD" in RGB source.
3. Adjust the horizontal/vertical position, Picture, and Fine Picture adjustments.
4. Select the Custom Memory icon.
5. Press the "Adjust" (+) or (–) buttons to choose a memory location, then press "Enter" on the cabinet or the "Left Click" on your remote control to save the new settings.

If you do not want to change the STANDARD settings, first select the Custom Memory icon, then do the same as step 5.

### Projection

This reorients your image for your type of projection. Press the “Adjust” (+) or (–) button until it is correct. Press “Enter” on the cabinet or the “Left Click” on your remote control to save your change. The options are: front floor projection, rear ceiling projection, rear floor projection, and front ceiling projection.

### Language

Use the “Adjust” (+) or (–) to choose one of six languages for on-screen instructions. Press “Enter” on the cabinet or the “Left Click” on your remote control to save your change. The options are: English, German, French, Italian, Spanish and Swedish.

### Reset

Changes all adjustments to the factory preset levels for each source individually. To activate, you must hold down the “Adjust” (+) button on the cabinet or remote control for at least two seconds. The adjustments that will be reset are horizontal and vertical control, picture and fine picture adjustment (for the current source only), brightness, contrast, color, tint, and sharpness.

When custom setting is selected, reset changes all adjustments to the factory preset levels of the current input signal for selected custom memory location. This will not return to your previous custom setting and will delete your saved settings from custom memory.



This section describes the simple maintenance procedures you should follow to replace the lamp and replace the batteries in the remote control.

## Replacing The Lamp

After your lamp has been operating for 1000 hours or longer, the “status” light in the cabinet will turn red. Even though the lamp may still be working, replace it at 1000 hours to maintain optimal projector performance.

### ⚠ CAUTION

- DO NOT TOUCH THE LAMP immediately after it has been used. It will be extremely hot. Allow at least one hour for the lamp to cool before handling.
- DO NOT REMOVE ANY SCREWS except the lamp cover set screw and two lamp case screws. You could receive an electric shock.
- Turn off the main power to the projector and disconnect the power cord. Allow at least one hour for the lamp to cool.
- The projector will turn off and go into stand by mode after 1100 hours of service. If this happens, be sure to replace the lamp. If you continue to use the lamp after 1000 hours of use, the lamp bulb may shatter, and pieces of glass may be scattered in the lamp case. Do not touch them as the pieces of glass may cause injury. If this happens, contact your NEC dealer for lamp replacement.

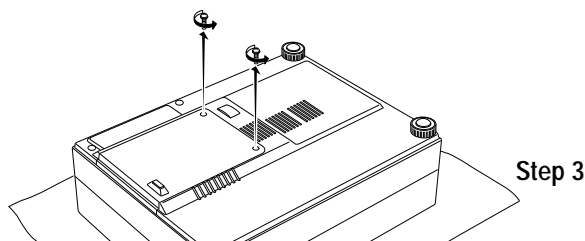
### Lamp replacement procedure

1. Switch off the main power and unplug the power cord.
2. Turn the main unit so that the bottom is up.
3. Remove the lamp cover fastening screws.
4. Slide the lamp cover in the direction of the arrow and remove it.

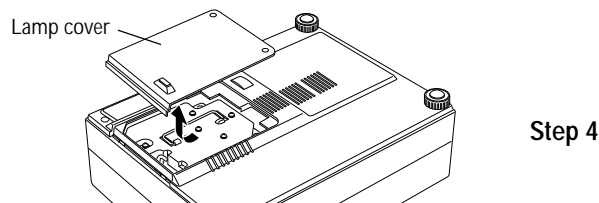
⚠ CAUTION: Do not use a lamp other than the NEC replacement lamp. Order this from your NEC dealer using your projector's model number.

5. Remove the three screws for the lamp housing.  
(There is an interlock on the lamp housing to prevent the risk of electrical shock. Do not attempt to circumvent this interlock.)
6. Holding the handle, pull the lamp housing forward and take it off.
7. Install the new lamp housing and fasten with the three screws.
8. Fasten the three screws for the lamp housing.
9. Install the lamp cover back in its original position and fasten with the fastening screw.
10. Reset the lamp time.  
Select the lamp usage time menu, then press the ON button on the remote controller and hold it down for at least ten seconds.

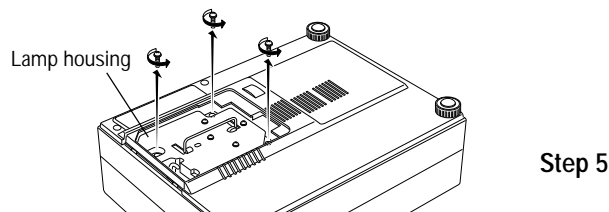
**NOTE:** If resetting the lamp clock back to zero after 1100 hours of service, press the "Power Off" (not "Power On") button on the remote control for ten seconds .



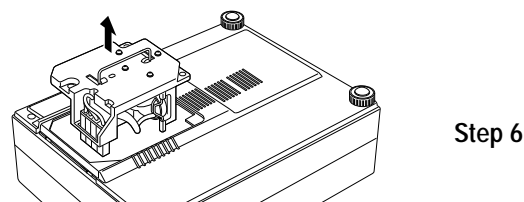
Step 3



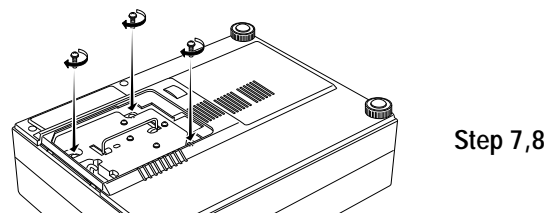
Step 4



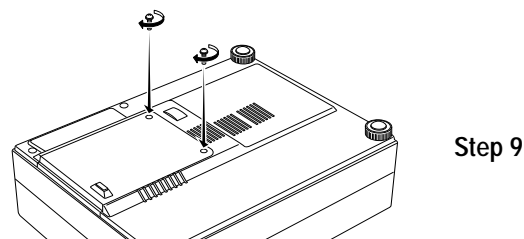
Step 5



Step 6



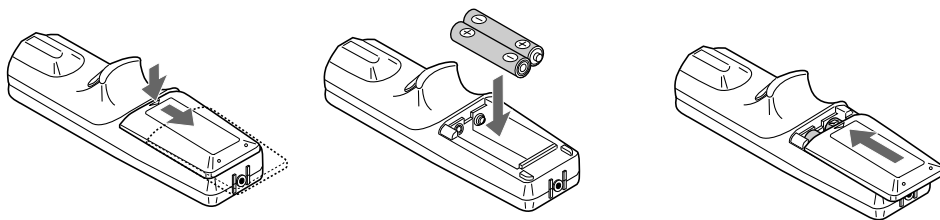
Step 7,8



Step 9

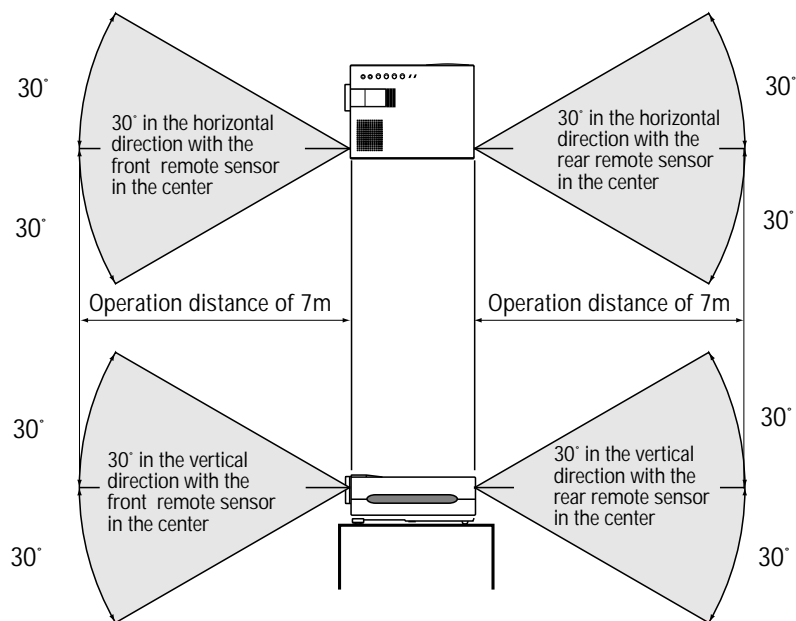
## Remote Control Battery Installation

1. Press firmly and slide the battery cover off.
2. Remove both old batteries and install new ones (AA). Ensure that you have the batteries' polarity (+/-) aligned correctly.
3. Slip the cover back over the batteries until it snaps into place.



## Operating Range

Range of 30° up/ down/ left/ right and a distance of 7 meters from the remote sensor.



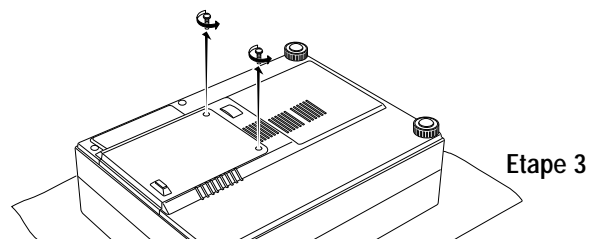
Cette section décrit les procédures simples d'entretien que vous aurez à suivre pour remplacer la lampe et remplacer les piles de la télécommande.

## Remplacement de la lampe

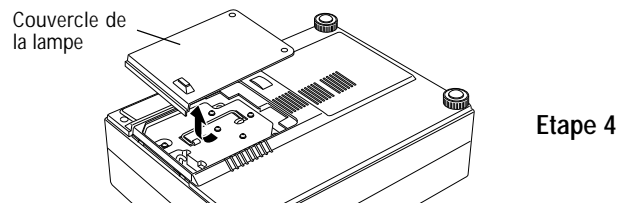
Lorsque la lampe a été utilisée pendant 1000 heures ou plus, le voyant "Status" (état) du coffret s'allume. Même si la lampe peut encore fonctionner, remplacez-la au bout de 1000 heures pour conserver une performance optimale de votre projecteur.

### ⚠ PRECAUTION

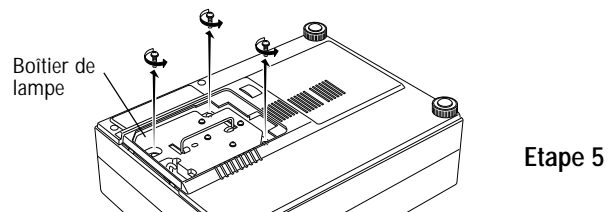
- NE TOUCHEZ PAS A LA LAMPE juste après qu'elle a été utilisée. Elle est très chaude. Laissez-la refroidir pendant au moins une heure avant de la manipuler.
- NE RETIREZ AUCUNE VIS mis à part la vis qui fixe le couvercle de lampe et les deux vis du compartiment de lampe. Vous risquez de recevoir une décharge électrique.
- Mettez le projecteur hors circuit et débranchez le cordon d'alimentation. Laissez refroidir la lampe pendant au moins une heure.
- Le projecteur s'éteindra et restera en attente après 1100 heures d'utilisation. Dans ce cas, remplacez la lampe. Si vous continuez d'utiliser la lampe après 1000 heures d'utilisation, l'ampoule peut se briser et des brisures de verre peuvent être éparpillées dans le compartiment de la lampe. Ne les touchez pas car elles peuvent vous blesser. Dans ce cas, contactez votre revendeur NEC afin de procéder au remplacement de la lampe.



Etape 3



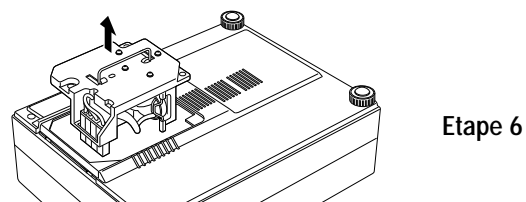
Etape 4



Etape 5

### Pour remplacer la lampe :

1. Mettre l'appareil sous tension et débrancher le cordon d'alimentation.
2. Retourner l'unité principale pour avoir accès à la partie inférieure.
3. Déposer les vis de fixation du couvercle de la lampe.
4. Faire glisser le couvercle de la lampe dans la direction de la flèche et le déposer.



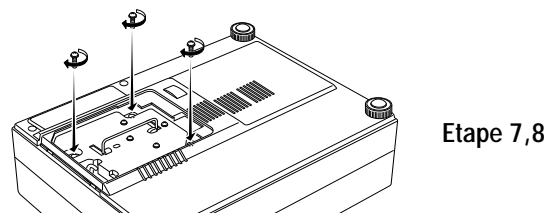
Etape 6

⚠ **ATTENTION** : ne pas utiliser une autre lampe que la lampe de remplacement NEC.  
Commander celle-ci auprès du détaillant NEC à l'aide du numéro de modèle du projecteur.

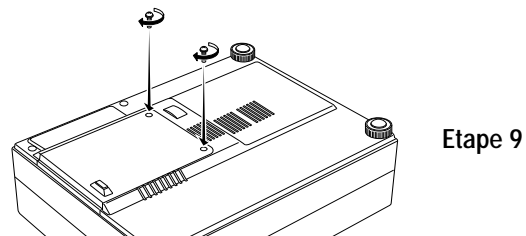
5. Déposer les trois vis du boîtier de lampe.  
(Il y a un mécanisme de déclenchement dans le boîtier de lampe pour empêcher une décharge électrique. Ne pas essayer de contourner ce mécanisme)
6. En maintenant la poignée, tirer le boîtier de lampe vers l'avant et l'extraire.
7. Installer le nouveau boîtier de lampe et le fixer avec les trois vis.
8. Serrer les trois vis du boîtier de lampe.
9. Réinstaller le couvercle de la lampe dans sa position d'origine et le fixer avec les vis de fixation.
10. Initialiser le temps de la lampe.

Sélectionner le menu de temps d'utilisation de la lampe, puis appuyer sur la touche ON sur la télécommande et la maintenir enfoncée pendant au moins dix secondes.

**REMARQUE** : Pour remettre à zéro l'horloge de lampe après 1100 heures d'utilisation, appuyez sur la touche "Power Off" (alimentation désactivée) (et non "Power On" (alimentation activée)) de la télécommande pendant dix secondes .



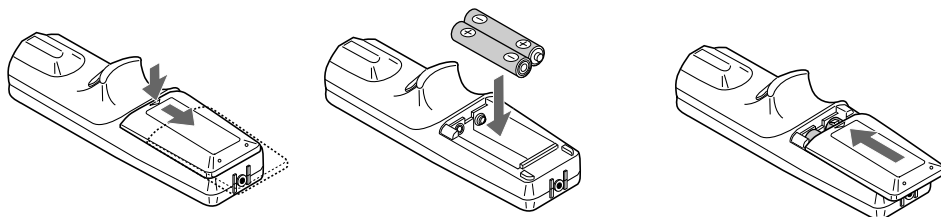
Etape 7,8



Etape 9

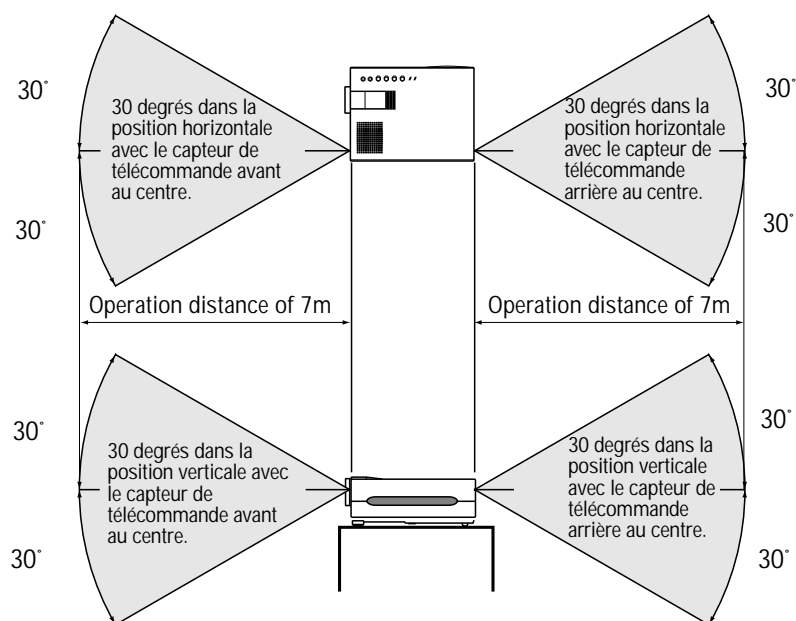
## Installation des piles de la télécommande

1. Appuyez fermement et retirez le couvercle des piles en le faisant glisser.
2. Retirez les deux piles usagées et installez de nouvelles piles (AA). Assurez-vous de respecter la polarité (+/-) des piles.
3. Remettez le couvercle des piles en le faisant glisser, jusqu'à ce qu'il s'emboîte.



## Portée de fonctionnement

Portée de 30 degrés vers le haut/ le bas/ la gauche / la droite et d'une distance de 7 mètres du capteur le télécommande.



This section helps you resolve problems you may encounter while setting up or using your MultiSync LT80 Projector.

## Status Light Messages

Condition	Status
OFF	■ Normal
On Continually	■ The projector lamp has exceeded 1000 hours of operation and should be replaced.
Blinking very rapidly (On and off in a cycle of 1 sec.)	■ The lamp housing is not correctly installed. Install it correctly.
Blinking rapidly (On and off in a cycle of 4 sec.)	<ul style="list-style-type: none"> <li>• The temperature protector has been triggered. If the room temperature is high, move the projector to a cooler location. If the temperature inside the projector is high, check the cooling fan ventilation hole and the ventilation hole on the bottom of the projector. If any of the holes are blocked, remove whatever is blocking them.</li> <li>• The temperature protector has been triggered. If you switch the main Power switch Off, then immediately switch it On again, sometimes the power does not come on. If this happens, wait one minute, then switch the power On again.</li> </ul>
Blinking Slowly (On and off in a cycle of 8 sec.)	■ The cooling fan has stopped. Contact your NEC dealer for service.
Blinking very slowly (On and off in a cycle of 12 sec.)	<ul style="list-style-type: none"> <li>■ The lamp is not turned on.               <ul style="list-style-type: none"> <li>• The projector was turned off and back on too quickly. Turn off the projector, wait one minute, then turn the projector back on. Or the lamp is burnt out.</li> </ul> </li> </ul>

## Common Problems & Solutions

Problem	Check These Items
Does not turn on	<ul style="list-style-type: none"> <li>• Check that the cord is plugged in and that the power switch on the back panel is on.</li> <li>• Ensure that the lamp cover and lamp housing are installed correctly. (See page 63.)</li> <li>• Check the status light to see if the projector has overheated or the lamp usage exceeds 1100 hours.</li> </ul>
No picture	<ul style="list-style-type: none"> <li>• Use the menu icons to select your source (Video, S-Video or RGB). (See pages 53 and 54.)</li> <li>• Ensure your cables are connected properly.</li> <li>• Use icons to adjust the brightness and contrast.</li> <li>• Remove the lens cap.</li> <li>• Is the POWER indicator blinking?</li> <li>• Reset the settings or adjustments to factory preset levels using the RESET icon on the Settings Menu.</li> </ul>
Image isn't square to the screen	<ul style="list-style-type: none"> <li>• Reposition the projector to improve its angle to the screen.</li> </ul>
Picture is blurred	<ul style="list-style-type: none"> <li>• Adjust the focus. (See page 50.)</li> <li>• Reposition the projector to improve its angle to the screen.</li> <li>• Ensure that the distance between the projector and screen is within the adjustment range of the lens.</li> </ul>

Problem	Check These Items
Image is scrolling vertically, horizontally or both	<ul style="list-style-type: none"> <li>• Use icons to select the source you want to input.</li> <li>• Make sure the recalled Custom Memory supports the current input signal.</li> </ul>
Remote control does not work	<ul style="list-style-type: none"> <li>• Install new batteries. (See page 65.)</li> <li>• Make sure there are no obstacles between you and the projector.</li> <li>• Stand within 23 feet (7m) of the projector.</li> </ul>
Status indicator is lit or blinking	See the Status Light message chart on pages 71 and 72.
Cross color in RGB mode	If "Auto Picture" is off, turn it on. If "Auto Picture" is on, turn it off and balance the image with the Picture Adjustment icon and Fine Picture Adjustment icon.

To Contact Your NEC Service Representative, Call 1-800-836-0655

This section provides technical information about the MultiSync LT80 Projector's performance.

## Optical

DMD™	Single Chip Digital Micromirror Device(DMD™), 800×600 dots
Lens	Manual zoom, manual focus F 2.44 f =26-30 mm
Lamp	Metal halide lamp 270 W
Image Size	610-7620 mm (24-300 inches) diagonal
Projection Distance	1.2 – 12.3m
Light Output	600 ANSI lumens ( normally white)
Contrast Ratio	Greater than 200 : 1
Color Temperature	6000 Kelvin

## Electrical

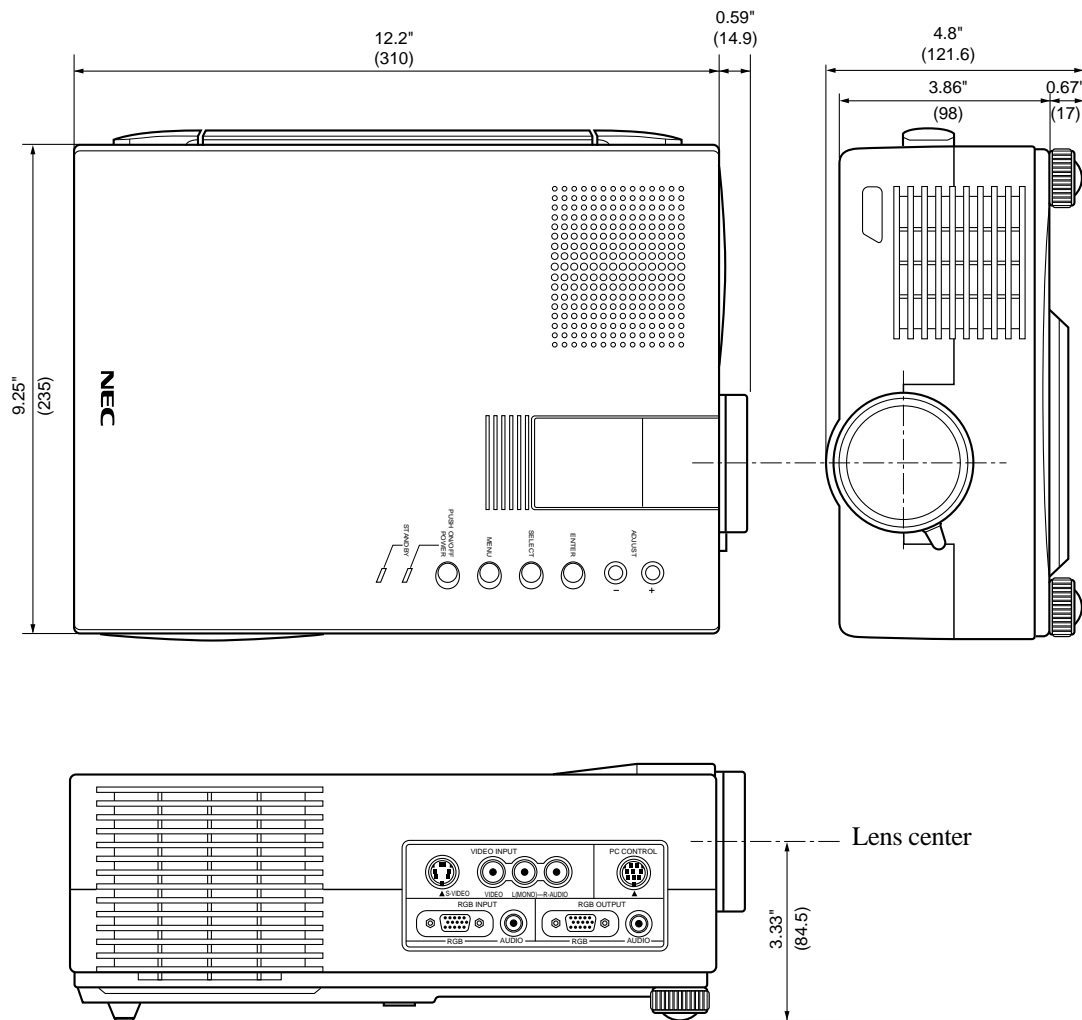
Inputs	Video (NTSC / PAL / SECAM / NTSC 4.43) RGB (H : 15 – 60 kHz, V : 50 – 85 Hz)
Video Bandwidth	60 MHz
Color Reproduction	Full color, 16.7 million colors simultaneously.
Horizontal Resolution	NTSC 550, PAL 350, SECAM 350, NTSC4.43 350 TV lines RGB 800 dots horizontal, 600 dots vertical
Power Requirement	100 – 120 / 220 – 240 VAC, 50 / 60 Hz
Input Current	6.25 A

## Mechanical

Dimensions	9.8" (W)×4.8" (H)×12.8" (D) 24.8 cm (W)×12.2 cm (H)×32.5 cm (D)
Net Weight	9.9 lbs / 4.5 kg
Operational Temperatures	Projector: 41° – 95°F (5° to 35°C), 30 – 85% humidity Remote control: 32° – 140°F (0° to 60°C) Remote mouse receiver: 32° – 140°F (0° to 60°C)
Regulations	UL Approved (UL 1950, CSA 950) Meets DOC Canada requirements Meets FCC Class A requirements

Digital Light Processing, DLP, Digital Micromirror Device and DMD are trademarks of Texas Instruments.

## Cabinet Dimensions



Unit : inch (mm)

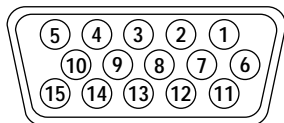


## D-Sub Pin Assignments

### PC 15-Pin mini D-Sub

Pin No.	Signal to be connected
1	Red
2	Green
3	Blue
4	GND
5	GND
6	Red GND
7	Green GND
8	Blue GND
9	No Connection
10	Digital GND
11	GND
12	No Connection
13	Horizontal Sync
14	Vertical Sync
15	No Connection

### PC 15-Pin mini D-Sub



## Timing Chart

Y/N	Signal	Resolution	Refresh Rate (Hz)	F.H. (kHz)	Dot Clk(MHz)
Y	NTSC	640×480	60	15.734	-
Y	PAL	768×576	50	15.625	-
Y	SECAM	768×576	50	15.625	-
Y	VESA	640×350	85.08	37.86	31.5
Y	IBM	640×400	70	31.47	25.175
Y	VESA	640×400	85.08	37.86	31.5
Y	MAC	640×400	66	35	30.24
Y	VESA	640×480	59.94	31.47	25.175
Y	IBM	640×480	60	31.47	25.175
Y	MAC	640×480	60	31.47	25.175
Y	MAC	640×480	66.7	34.97	31.334
Y	MAC	640×480	66.67	35	30.24
Y	VESA	640×480	72.81	37.86	31.5
Y	VESA	640×480	75	37.5	31.5
Y	IBM	640×480	75	39.375	31.49
Y	VESA	640×480	85.01	43.269	36
Y	IBM	720×350	70.09	31.469	28.322
Y	IBM	720×400	70.09	31.4469	28.322
Y	VESA	720×400	85.04	37.927	40
Y	IBM	720×350	87.85	39.44	35.5
Y	IBM	720×400	87.7	39.375	35.5
Y	VESA	800×600	56.25	35.16	36
Y	VESA	800×600	60.32	37.879	40
Y	VESA	800×600	72.19	48.077	50
Y	VESA	800×600	75	46.88	49.5
Y	VESA	800×600	85.06	53.674	56.25
#	MAC	832×624	74.55	49.725	57.283
N	VESA	1024×768	43interlace	35.5	44.9
#	VESA	1024×768	60	48.363	65
#	VESA	1024×768	70.07	57.476	75
#	IBM	1024×768	72.03	58.131	79
#	MAC	1024×768	74.93	60.241	80
#	VESA	1024×768	75.03	60.023	78.75
N	VESA	1024×768	85	68.677	94.5

Incompatible signals are marked with on "N" and hatched. # 1024x768 and 832x624 images are compressed into 800x600.

## PC Control Command Reference

### Command Codes

No.	Function	Code	Data	Description
01	Video	03H	No	Same as remote
02	RGB1	04H	No	Same as remote
03	S-VIDEO	C6H	No	Same as remote
04	Power On	08H	No	Same as remote (See NOTE on page 88.)
05	Power Off	14H	No	Same as remote
06	Picture Mute	47H	No	Same as remote
07	Audio Mute	45H	No	
08	Onscreen Mute	11H	No	
09	Reset	43H	No	(Resets immediately after returning ACK)
10	D Up	DEH	No	Same as remote
11	D Down	DFH	No	Same as remote
12	D Right	DCH	No	Same as remote
13	D Left	DDH	No	Same as remote
14	D Right Up	21H	No	Same as remote
15	D Left Up	22H	No	Same as remote
16	D Right Down	23H	No	Same as remote
17	D Left Down	24H	No	Same as remote
18	Freeze	91H	No	Same as remote
19	Front Floor	33H	No	
20	Front Ceiling	34H	No	
21	Rear Floor	35H	No	
22	Rear Ceiling	36H	No	
23	Auto Start On	19H	No	
24	Auto Start Off	1AH	No	
25	Auto Picture On	1BH	No	
26	Auto Picture Off	1CH	No	

## Command Codes (continued)

No.	Function	Code	Data	Description
27	Image mode Doc Cam	1DH	No	
28	Image mode Normal	1EH	No	
29	Image mode Natural	1FH	No	
30	Power Management On	15H	No	
31	Power Management Off	16H	No	
32	Digital Zoom W	89H	No	
33	Digital Zoom T	8AH	No	
34	Brightness	60H	Yes	0 to 63
35	Contrast	62H	Yes	0 to 63
36	Color	64H	Yes	0 to 63
37	Tint	66H	Yes	-32 to +31(E0 to 1F)
38	Sharpness	68H	Yes	0 to 3
39	Audio Volume	6AH	Yes	0 to 63
40	Picture Adj	70H	Yes	768 to 1279(2 byte Code)
41	Fine Picture	6EH	Yes	0 to 31
42	H Position	72H	Yes	-64 to +63(C0 to 3F)
43	V Position	74H	Yes	-32 to +31 (E0 to 1F)
44	Lamp Reset	27H	No	
45	Language Select	3DH	Yes	00:English, 01:German, 02:French, 03:Italian, 04:Spanish, 05:Swedish, 06: Japanese

## Cable Connection

### Communication Protocol

<b>Baud rate:</b>	<b>9600 bps</b>
<b>Data length:</b>	<b>8 bits</b>
<b>Parity:</b>	<b>No parity</b>
<b>Stop bit:</b>	<b>One bit</b>
<b>X on/off:</b>	<b>None</b>
<b>Communications procedure:</b>	<b>Full duplex</b>

If the CPU of the projector has received the data correctly, it returns an ACK(C5H). If the received data is not correct, the CPU returns a NAK(CAH), then the following status:

<b>Receiving success:</b>	<b>C5</b>
<b>Receiving failure:</b>	<b>CA Err</b>
<b>Err 01:</b>	<b>Command Error (command not supported)</b>
<b>Err 02:</b>	<b>Checksum Error</b>
<b>Err 03:</b>	<b>Busy (command not acceptable)</b>

**Err 04:**                    **Parameter Error ( parameter data abnormal)**

---

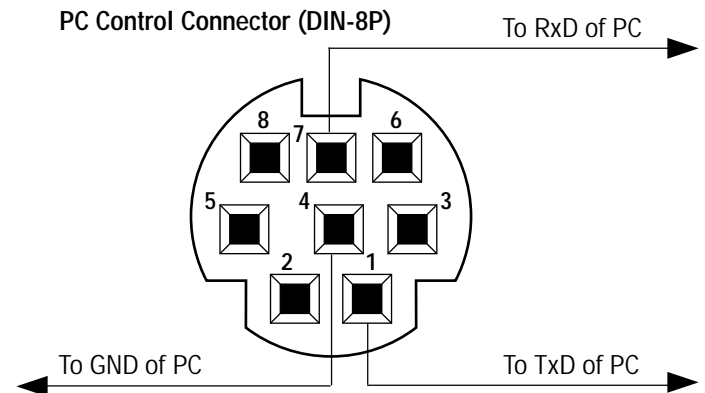
*NOTE: If failing in powering-on, the CPU returns the following NAKs:*

---

#### CA Err 1

##### Err 1 8X (Apply the corresponding bit.)

- Bit 0: Lamp housing is not attached correctly
- Bit 1: Fan stoppage
- Bit 2: Overheated
- Bit 3: Lamp lighting failure



## Free Manuals Download Website

<http://myh66.com>

<http://usermanuals.us>

<http://www.somanuals.com>

<http://www.4manuals.cc>

<http://www.manual-lib.com>

<http://www.404manual.com>

<http://www.luxmanual.com>

<http://aubethermostatmanual.com>

Golf course search by state

<http://golfingnear.com>

Email search by domain

<http://emailbydomain.com>

Auto manuals search

<http://auto.somanuals.com>

TV manuals search

<http://tv.somanuals.com>