# LEO 400 Series

## LEO System Software Product description

LEO

## *Abstract*

**This document contains the Software Product description for the LEO 400 System Software**

All reasonable steps have been taken to ensure that this publication is correct and complete, but should any user be in doubt about any detail, clarification may be sought from LEO Electron Microscopy Ltd, or their accredited representative. The information in this document is subject to change without notice and should not be construed as a commitment by LEO Electron Microscopy Ltd. LEO Electron Microscopy Ltd accepts no responsibility for any errors that may appear in this document.

Part Number: GL - 878195

Date: November 1995

Version: V02.04

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Printed in England

LEO

# *Table of Contents*

# Description

The LEO System Software provides full control of the LEO 400 series of Electron Microscopes. The functionality provided is dependant on the SEM Model and the installed licences which enable specific options. These are more fully defined in the SEM Specifications.

The Components of the software are:

The LEO Control Software application and associated Libraries

The Graphics Processor (GSP) Driver

The Variable pressure controller (435 only)

The Remote Control Application

The Licence Installation Application

The HRRU Speed compensation utility

The User catalogue application

Service Utilities (Service Use Only):

The DLL configuration Application.

The Vacuum utility application

The NVRAM utility

The HRRU calibration utility

The 420/430 calibration utility

# Minimum Hardware required

This software requires a LEO 420, 430, 435VP or 440 at the build state defined in the associated release notes with a minimum of:

386 processor (486 recommended)

8 MB RAM (16MB recommended)

80 MB Hard Disk (400 MB recommended)

1.44MB 3.5" Floppy Disk

# System Resources

## Networking

The standard system resources are based on use of Windows for Workgroups using SMC Elite 16/Elite Ultra Network cards. Requirements of other cards/drivers/network software have not been evaluated and are not guaranteed.

## S400 without Integrated EDX

Requirements

|  | CPU 486 66Mhz | 200MB disk minimum | 8MB RAM | 16MB RAM | 20MB RAM |
|---|---|---|---|---|---|
| Network | No | No | Yes | | |
| Word | No | No | Yes | | |
| Excel | No | No | Yes | | |
| Word+Excel | No | No | XXX | Yes | |

XXX = Not Possible.

## S400 with Integrated EDX

|  | 8MB RAM | 16MB RAM | 20MB RAM |
|---|---|---|---|
| Base System | Yes | | |
| + Word | XXX | Yes | |
| + Excel | XXX | Yes | |
| + Word+Excel | XXXX | XXX | Yes |

XXX = Not Possible.

If extensive use is made of full EDX facilities it may be necessary to shut down some applications to free sufficient resources.

# LEO 400 Series

## LEO Software Release Notes

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# LEO 400 Series
# LEO Software Release Notes

## Abstract

This document contains the release notes for V02.04 of the LEO System Software.
Please read this document before installing your new software

All reasonable steps have been taken to ensure that this publication is correct and complete, but should any user be in doubt about any detail, clarification may be sought from LEO Electron Microscopy Ltd, or their accredited representative. The information in this document is subject to change without notice and should not be construed as a commitment by LEO Electron Microscopy Ltd. LEO Electron Microscopy Ltd accepts no responsibility for any errors that may appear in this document.

Part Number: GL - 878196

Date: November 1995

Version: V02.04

Issue: 16

Printed in England

# LEO

# Table of Contents

# LEO Software Release Notes V02.04

## Version V02.04

## Reason for Release

This release builds on release V02.03. It provides bug fixes, new functionality and support for the Cartesian 95 stage and the LEO 435VP.

## System Requirements

This software will run on a LEO 420, 430, 435VP or 440 with

| | |
|---|---|
| either | MS DOS® V05.00 |
| or | MS DOS® V06.00 |
| or | MS DOS® V06.02 |

| | |
|---|---|
| either | Microsoft® Windows$_{TM}$ V3.1 |
| or | Microsoft® Windows for Workgroups$_{TM}$ V3.1 |
| or | Microsoft® Windows$_{TM}$ V3.11 |

| | |
|---|---|
| either | 420 Build State 910936/9 or later |
| or | 430 Build State 910962/2 or later |
| or | 435 Build State 911061/1 or later |
| or | 440 Build State 910878/11 or later |

| | |
|---|---|
| either | S400 HRRU Mark 1 |
| or | S400 HRRU Mark 2 |

## Contents of Release

This release comprises:

LEO Software Product Description Part No. 878195 issue 7
LEO software release notes (this document) Part No. 878196 issue 16
Installing LEO Software Part No. 878194  issue 7
GSP System software disk Part No. 871413 V02.04
LEO Install Disk 1 of 8 Part No. 871414 V02.04
LEO Install Disk 2 of 8 Part No. 871415 V02.04
LEO Install Disk 3 of 8 Part No. 871416 V02.04
LEO Install Disk 4 of 8 Part No. 871487 V02.04
LEO Install Disk 5 of 8 Part No. 871544 V02.04
LEO Install Disk 6 of 8 Part No. 871545 V02.04
LEO Install Disk 7 of 8 Part No. 871581  V02.04
LEO Install Disk 8 of 8 Part No. 871609 V02.04
Software Report Form Part No.878247

## Corrections

For details of corrections please refer to the on-line release notes (Top Menu - Help - Release Notes)

## Restrictions/Known Problems

The following restrictions/problems apply to this release:

**Stage scan** does not operate correctly if scan rotation is in use. The stage scan patterns are always in the stage coordinate directions and not corrected for rotation. Hence also the scan pattern calculation does not cater for scan rotation.

**Dual Mag** There is a shift in the zoomed image when going to Pix avg 1024.

**Probe current** the value set/displayed should be taken as a guide only.

**Depth mode on 420/430** A loss of contrast may be encountered under some conditions.

## Changes in Operation etc in V02.04 (Since V02.03).

For full details see the on-line release notes.

**Noise reduction settings** saved in application conditions.

- **Stage Motors off setting** saved in application conditions.

- **Remote Control Port Definition** The port used for REMCON is defined by the user on the command line. Due to the limitations of the installation mechanism it is not possible to preserve the user defined command line when the software is updated. This release therefore creates four REMCON icons *Remote Control (COM1), Remote Control (COM2), Remote Control (COM3)* and *Remote Control (COM4)*. The existing icon *Remote Control* with it's command line will not be modified.

**Resource requirements** for panels reduced.

**Aborting LEO on start up.** The Cancel button on the User directory selection dialog, which is displayed on LEO start up, now aborts the LEO Application.

- **TIFF File using Photo No.** Where the TIFF filename is derived from the Photo number it is now formatted with leading zeros to give a four character filename.

**Measurement object attributes** The measurement objects (e.g. radial measurement) now take the default attributes such as line width, font etc. Note that when selecting colour attributes the colours selected from the upper row will be converted to black on output to a monochrome device and colours selected from the lower row will be converted to white.

**Stage Position accuracy.** The accuracy of stored stage position (e.g. as used in saving stage coordinate positions to file) has been increased.

**Optibeam Depth mode** has been improved.

## *Compatability*

This software will automatically perform any data file format changes from V02.03.

Note that the format of NVRAM data is revised, hence on first run up after installation on systems having an NVRAM the NVRAM data faulty message may be given. This first warning message may be ignored.

# LEO 400 Series

## Installing LEO Software

LE⦶

# Abstract

**Manual for the installation of the LEO 400 Series Software and Software Licences**

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# Table of Contents

# Introduction

This guide takes the user through installation of the LEO 400 Series System and licence options software. As licence installation is a separate exercise to installing the system software, this manual has been divided into two sections.
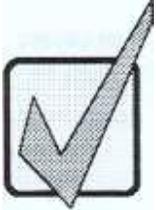
## What you will need

The following inventory is required for the installation procedure

An understanding of the concepts of MS-DOS® and Microsoft® Windows™.

This installation guide.

• The LEO 400 Series system software installation disks. These will not be required if all you intend to do is install LEO software licences.

• If you are adding additional options to your microscope, or if you are performing a software upgrade, you will also have a separate LEO software licence disk, part number 871418.

- After a short while, setup clears the screen and displays a welcome message. Click **Continue** to continue the installation or **Exit** to exit without installing any files:
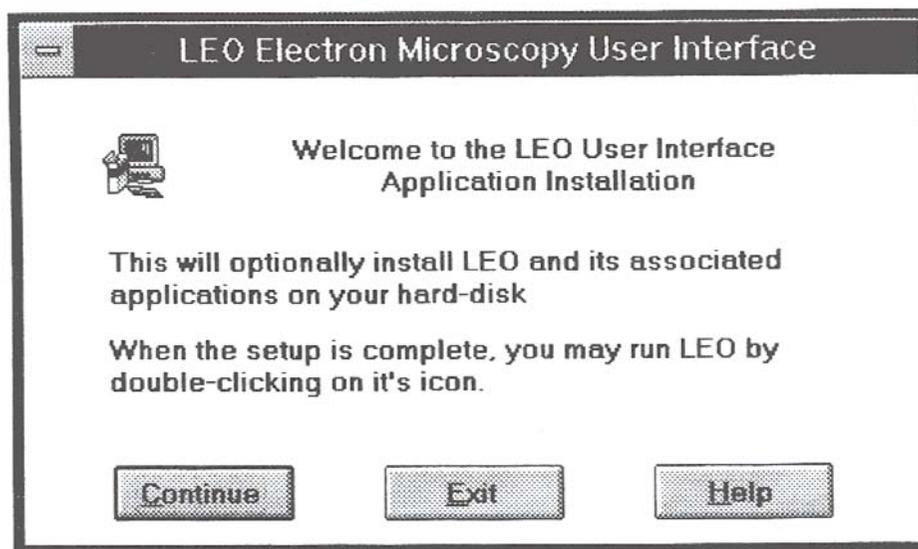


- Setup will then display an installation options screen as shown below. *Be sure to select the appropriate machine type* by clicking the LEO 420, 430, 435 or 440 check-box. The default installation is for a LEO 440 SEM.

If you require support for French and/or German interfaces select them.

Click **Install** to confirm these settings. Setup will then install the software prompting for each installation disk as it progresses:
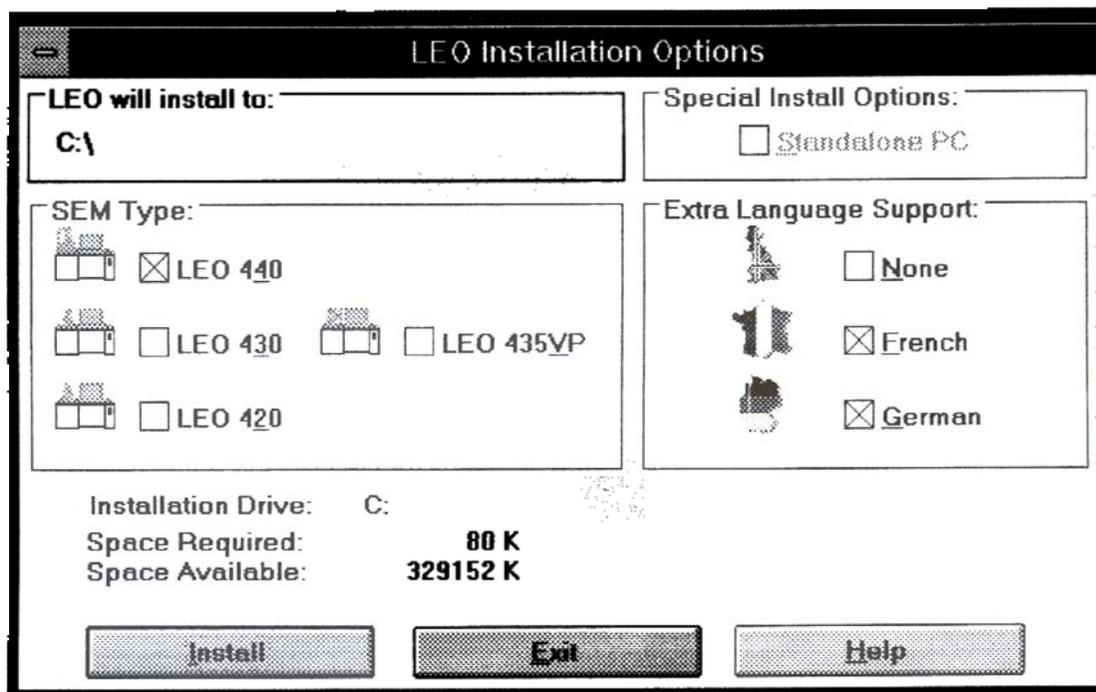


When the software has been copied, new program-manager groups and icons are created. If these groups and/or icons already exist they will simply be updated:
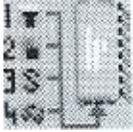
## Loading System Data

### Introduction

LEO 400 systems may be fitted with either a Dongle or Non Volatile Random Access Memory (NVRAM). This section applies only to systems fitted with NVRAM.

If the NVRAM Utility is used on systems fitted with a Dongle a warning message will be given.

The system calibration data is held in a file DATA.VAC

The system data is also held in NVRAM, together with licence information, where this is fitted.

When there is a change in system data structure (typically to support new functionality) installing the new version of LEO will convert the DATA.VAC to the new structure. If the data in the NVRAM is not converted to the new structure running LEO will result in the message 'NVRAM Data faulty - using DATA.VAC'

### Using the NVRAM Utility

In Program Manager display the LEO Service Group.
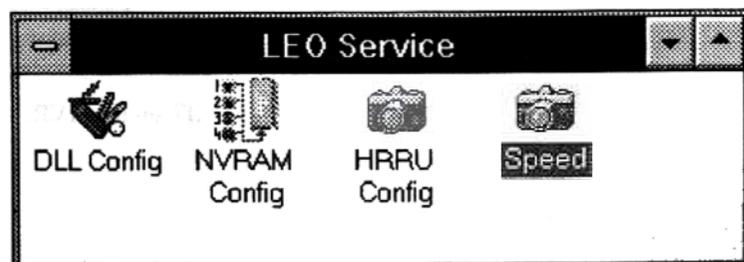


Run the NVRAM Config Utility by double clicking it's icon.
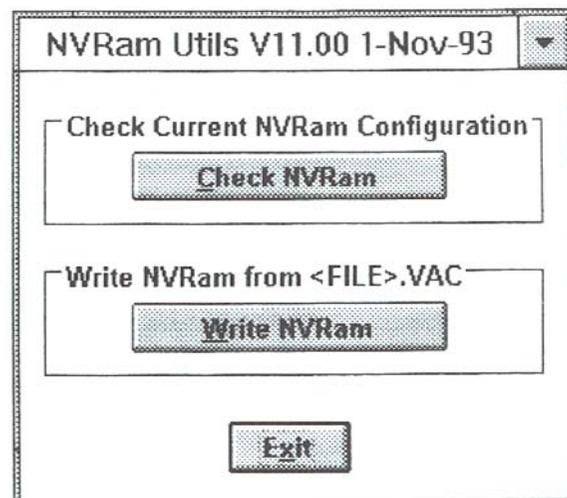


Select **Write NVRAM**

# Installing LEO Licence Options

## Introduction

This section covers the software options of the LEO software, options requiring hardware installation (e.g. computer peripherals and SEM hardware options) are covered in the *LEO 400 Service Installation Manual*.

### What is a Licence?

All LEO software options are present in the software distribution and are controlled by the use of licences. If a licence is not present the appropriate function is either inactive (i.e. parameters 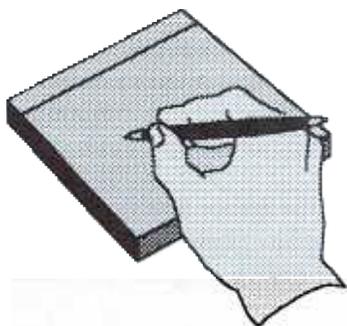and states are greyed out) or omitted from menus. When the microscope is delivered the standard options and any additional options purchased will already be installed. The licences installed may be inspected using the LEO Licence Installation applications described below.

### The Licence Floppy

The licence file will be present on a floppy disk supplied with the system software and on the hard disk in directory \LICENCE. A licence file takes as its name the customer order number and has the extension .LICAny options subsequently purchased will be supplied as a licence file on a floppy disk which will require installation as described below.

## *Installing Licence Options*

- When Install is clicked from the Licence Installer main window (shown on the previous page), the licence floppy is scanned, and you will be prompted to select a file. Ensure that the file selection window has drive A: selected. If you wish to install the current licence from the hard-disk, select directory C:\LICENCE.

- Select the licence file (M*******.LIC). The file will then be read and the installation window displayed:

```
LEO 400 Series - Licence Installer (V01.21)

Help

Machine Serial No. :  [348]  -  [03]  -  [01]          Key Code  [        ]

Order No  [MV72123]

N.B Installed Licences with a * are standard on this model

(●) View Option Text      ( ) View by Sales Codes      ( ) View by Part Number

        Unavailable Options              Currently Installed Licences
   ┌──────────────────────────┐▲    ┌──────────────────────────┐
   │ 2D Y-Mod Display         │     │                          │
   │ 40Kv                     │     │                          │
   │ 8 Detector Inputs        │     │                          │
   │ Advanced Annotation      │     │                          │
   │ Advanced Measurement     │     │                          │
   │ Advanced X-Ray Dot Map   │     │                          │
   │ Beta Test Site           │     │                          │
   │ Derivative Processing    │     │                          │
   │ Dynamic Stereo           │▼    │                          │
   └──────────────────────────┘    └──────────────────────────┘

   [ ] Print Report File              [  Install  ]    [  Quit  ]
```

LEO Electron Microscopy Ltd.
Software Report Form
Part No. 878247/2

**LEΦ**

| Customer : _____ | Contact: _____ |
| Address : _____ | Telex/Fax _____ |
| _____ | Telephone _____ |
| _____ | Extension _____ |
| _____ | |

| Software Name: _____ | **Items attached (tick as appropriate)** |
| Version: _____ | ☐ Media |
| System Serial No. _____ | ☐ Listings |
| Part No. _____ | ☐ Documents |
| Date: _____ | ☐ Micrographs/prints |

**Brief title of problem/suggestion**

**Description of symptoms/details**

| **Local Office Use.** | Contact: _____ |
| ☐ acknowledgement | Date: _____ |
| | Ref No. _____ |

LEO

LEO Electron Microscopy Ltd.
Software Report Form
Part No. 8254472

Customer:
Address:

Contact:
Tel/office:
Telephone:
Extension:

Software Name:
Version:
System Serial No.:
Part No.:
Date:

Items attached (tick as appropriate):
☐ Media
☐ Listings
☐ Documents
☐ Micrographs/etc.

Brief title of problem/suggestion

Description of symptoms/details

Local Office Use.
acknowledged/sent

Contact:
Date:
Ref No.:

- You will notice your machine serial number and customer order number have already been determined by the Licence Installer. Enter the **key code** in the box provided.

If you do not have the key code it may be obtained from

**Customer Care,**
**LEO Electron Microscopy Ltd,**
**Clifton Road,**
**Cambridge, CB1 3QH**
**England.**

**Telephone   (+44) 1223 - 414166**
**Fax            (+44) 1223 - 211497**

quoting the system serial number and order number/file name.

- Select **Print** (if required). The Print check-box may be selected if a printout of the licence information is required. Regardless of printing, a copy of the report (with extension REP) will be inserted in directory \LICENCE, which may be subsequently printed or displayed using the Windows NOTEPAD application.

- Clicking the **Install** button will install the licences and display the currently installed licences for verification.

- Finally, the Licence Installer may now be terminated by clicking **Quit** on the installation screen, followed by **Quit** on the main Licence Installer window. If the licence was installed from floppy, the diskette can now be removed.

## *The LEO Licence application*

### *Loading the Licence Installer*

- First, make sure you are in Windows and place the licence disk (part number 871418) into floppy drive A:. The LEO User Interface must also be running for operation of the Licence Installer. Start the Licence Installer program by double clicking on the **Licence Installer** icon:
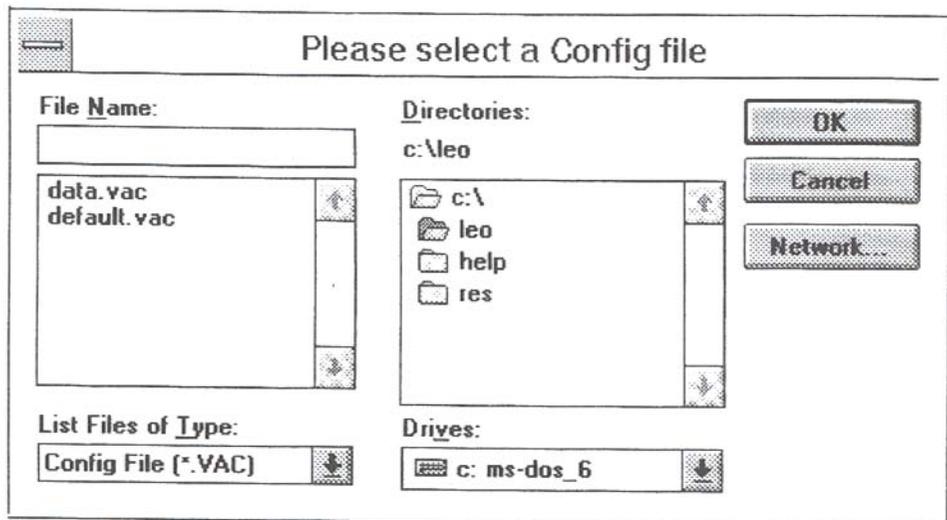
Note : For users who have licence files of an earlier format an alternative licence installer is supplied.
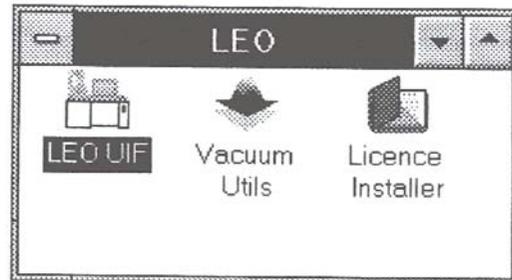


- This icon can be found in the Windows Program Manager **LEO** group. Once loaded, the following window will appear :
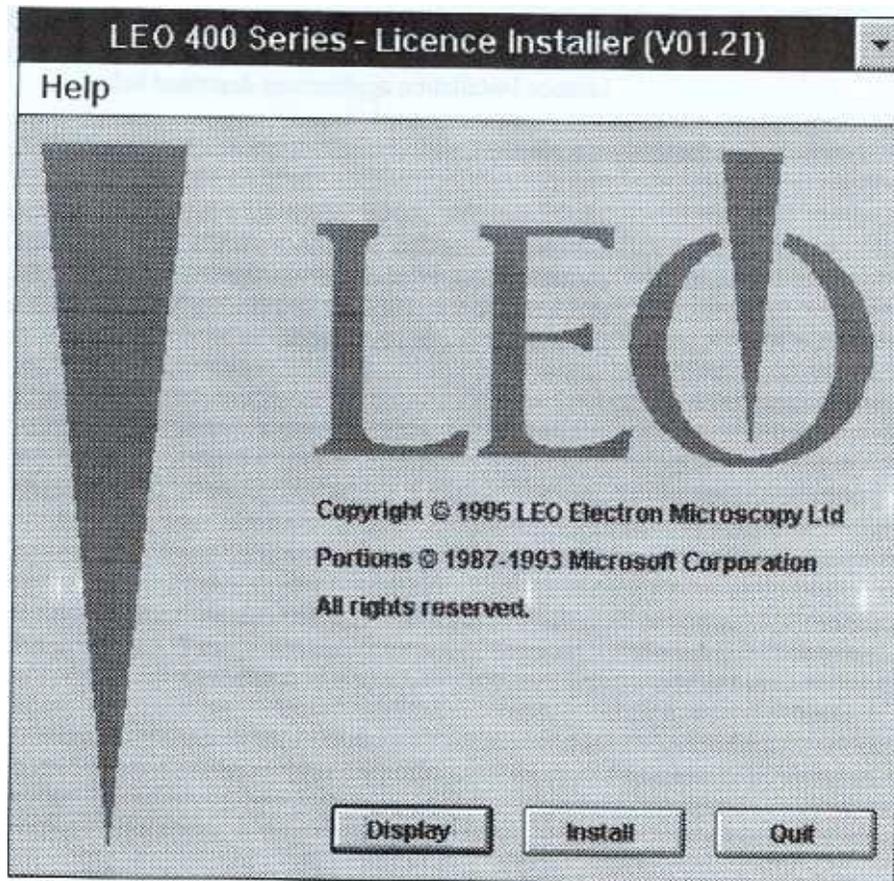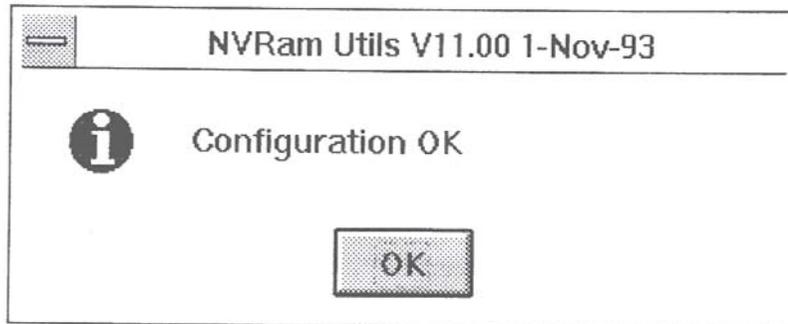


- Click on **Display** to display the system serial number and, in a list on the right hand side of the screen, the currently installed options. Clicking on **Install** will install a set of licences. **Quit** will terminate the program.
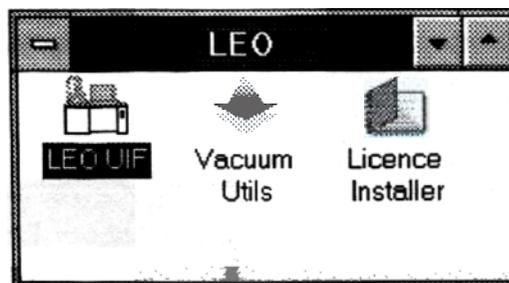
## Please select a Config file

File Name:

```
data.vac
default.vac
```

List Files of Type:

Config File (*.VAC)

Directories:
c:\leo

```
c:\
leo
help
res
```

Drives:

c: ms-dos_6

OK

Cancel

Network...

Select DATA.VAC and click OK

After the data is loaded confirmation will be displayed

## NVRam Utils V11.00 1-Nov-93

Configuration OK

OK

Click OK, then click EXIT on the NVRAM Utility window.

- The Program Manager screen will be displayed whilst adding new icons. *This does not mean that the installation has finished.* The program manager window will disappear once the icons have been added, and setup will then resume with it's normal display screen.
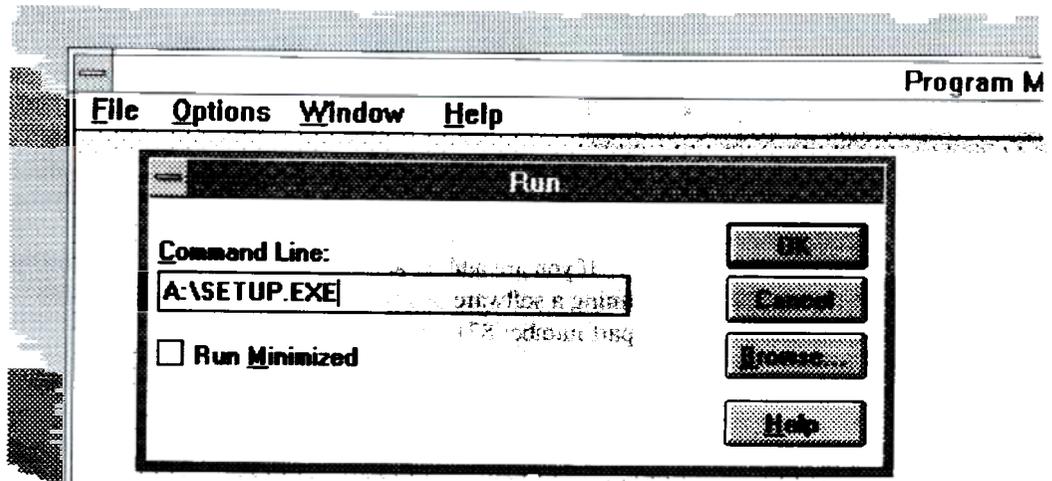
  Setup will inform you when it has finished. As some of the system files will have been updated, it is necessary for the setup program to temporarily exit and restart Windows after copying these special files.

  If Windows does not restart and the DOS prompt is displayed the windows shutdown and transfer of system files has failed. This may be due to network or other drivers not terminating. If this should occur type **\WINDOWS\_MSRSTRT** which will complete the installation. Type **WIN** to restart windows.
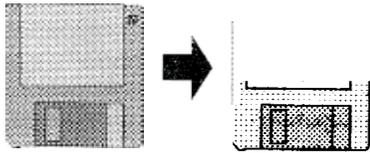
# Upgrading the Software

- If you are already using the microscope, perform a shutdown, then choose **Close** from the Program Manager window before powering off. Wait for about 10 seconds before powering up again.

- After the PC has rebooted, place the first LEO 400 Series System Software Installation disk (871414) in drive A:. When Windows Program Manager has loaded, select **Run** from the **File** menu and enter A:\SETUP in the text box:

Program M

**File** **Options** **Window** **Help**

Run

**Command Line:**

A:\SETUP.EXE

☐ **Run Minimized**

# LEO 400 Series
## Installing LEO Software

### Abstract

Manual for the installation of the LEO 400 Series Software and Reference Libraries

LEO Electron Microscopy Ltd
Clifton Road
Cambridge
United Kingdom
CB1 3QH, England
Tel. (44) 1223 411411
Fax (44) 1223 412776

## Installation

The instructions given in 'Installing LEO Software' (Part No.878194) should be followed.

*If being installed on an Integrated EDX system the ISIS/Sigma software must be closed down before installation of the LEO software.*

After installation of the software the system must be powered off and rebooted to permit the changes to the display driver to take effect.

*If Remote Control is used it will be necessary to redefine the serial port to be used. In Program Manager select the Remcon Icon, select File - Properties and in the command line enter(e.g. for COM2) C:\APPLICS\REMCON.EXE COM2*

### On First Running Software

#### Panels

Select Top menu - Tools - Service - Load Panels

2. Select Top Menu - file - Novice/Expert

#### Macro Library

Load standard macro library by displaying the macro window (top menu - tools - macro) and then from the macro window menu selecting Macro - library - Merge standard.

: This action will be required for each User Directory

## Mandatory Hardware Changes

There are no mandatory hardware changes since the release of V02.00. It is recommended that the build state should be as defined in **System Requirements**.

This version supports, but does not require, modification 43406 to the Image Processor.

*If using DOS 6.0 or later the Boot PROM 875201 should be V2.0 or later otherwise the DOS Backup facility may not function. Any systems shipped with DOS 6.0 or later will have the correct PROM version.*

## New Release Features and History

### History

| | |
|---|---|
| V01.00 | 03-Aug-92 |
| V01.01 | 26-Nov-92 |
| V01.02 | 15-Dec-92 |
| V02.00 | 30-Sep-93 |
| V02.01 | 14-Dec-93 |
| V02.02 | 30-Mar-94 |
| V02.03 | 30-Nov-94 |
| V02.03.01 | 30-Dec-94 |
| V02.03.02 | 30-Jan-95 |
| V02.03C | 01-May-95 |
| V02.04 | 30-Nov-95 |

### New Features in V02.04 (Since V02.03)

For fuller details of new features and the versions in which they were introduced please refer to the on-line release notes (Top Menu- Help - release Notes).

Support for **LEO 435VP Microscope**

Support for **Cartesian 95 Stage**

- Support for cartesian stage motorised tilt without motorised rotate.

Stage XY fixed distance move (See on-line release notes for details)

New parameters to permit macro control of **Crosshair and Graticule parameters**

**Merge Standard** This function uses the distributed Macro Library as source and inserts each macro it contains into the current user macro library. Any existing macro of the same name is replaced unconditionally.

- **Merge File** This function uses a user selected macro library file as source and inserts each macro it contains into the user macro library. If any exisiting macro of the same name is found the user will be asked to confirm replacement.

- Direct printing to **Default Windows printer**

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# LEO 400 Series
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Please read this document before installing your new software.

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Previous copyright LaCo Cambridge Ltd 1993-1996

Part Number: SL- 42936

Date: November 1996

Version: V02.01

Issue: 01

Printed in England

# LEO

# Video Printers Supported

Mitsubishi P66B,P68B,P78B,CP210U,CP100B,CP200BH

Alden 9315-CTP-999.

Sony UP-D860

# Installation

When a LEO 400 Electron Microscope is delivered the software is already installed and configured.

This software may be installed as an update by the user following the installation instructions provided.

# Licensing

This software is supplied for use on a specifically identified (serial numbered) LEO 400 Electron Microscope, it may not be copied or distributed except by specific written permission from LEO Electron Microscopy Ltd.

The optional functions within the software are enabled by the installation of one or more software licence files which relate to a specific LEO 400 serial number and LEO Order Number.

The hard disk should have a minimum of 6MB free space during operation, existing users who have less than an 80 MB disk may need to upgrade to a larger disk if there is insufficient spare capacity.

# Minimum Software Required

MS DOS® V05.00 or MS DOS® V6.00 or MS DOS® V6.2

Microsoft® Windows™ V3.1 or Windows for Workgroups™ V3.1 or Microsoft® Windows™ V3.11

# Growth considerations

The hardware requirements for future versions of this product may differ from the requirements of this version.

# Associated Software

The software has been proven to work with the following

Novell® Netware™

Microsoft® Word for Windows™

Microsoft® Excel™

Norton Antivirus™

- Stacker® 3.0

    Requires 20MB RAM, 66MHz 486, 200MB disk

- Oxford ISIS Integration

    Requires 8MB RAM, 66MHz 486, 200MB disk

    Kevex Sigma Integration

    Requires 8MB RAM, 66MHz 486, 200MB disk

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