Software Update Notification

MALVERN
INSTRUMENTS

Dispersion Technology and Light Scattering Products,
(Autosizer, Lo-C, Zetamaster, Zetasizer)

Product	PartNo./Version
PCS for Windows	PSW0001/1.41
MPT-1 Autotitrator	PSW0058/1.00
COR3140 Correlator	PFW0004/2.00

MALVERN   AUTOSIZER

MALVERN   ZETAMASTER

MALVERN   ZETASIZER

Dispersion Technology and Light Scattering Products (Autosizer, Lo-C, Zetamaster, Zetasizer)
version 1.41 DTS Application Software for use with (English) Microsoft Windows version 3.1,
Windows for Workgroups version 3.11, Windows95, Windows98 and WindowsNT 4.0

Contents

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1. Scope

This document is the software update notification for

DTS/PCS software	PSW0001/1.41	(Previously 1.41B1)
MPT-1 Autotitrator software	PSW0058/1.00	(Previously 1.00B1)
COR3140 Correlator firmware	PFW0004/2.0	(Previously 1.99)

v1.41provides support for the Internal High Power Laser (IHPL) option and the new Autotitrator (DTS5900). The new MPT-1 Autotitrator is ONLY supported on Windows95, Windows98 & WindowsNT operating systems and ONLY with the Zetasizer 1000, 2000 and 3000 series products.

2. Summary of changes

Product	Part no/Ver	Prev ver	Change summary
DTS/PCS software	PSW0001/1.41	1.41B1	7 bug fixes
MPT-1 Autotitrator	PSW0058/1.00	1.0B1	Conductivity titration added Demo/ test TOP added 17 changes
COR3140 Correlator	PFW0004/2.0	1.99	Power-up sequence changed.

See the relevant section for details of these changes.
These products are now released on a single CD-ROM

3. Introduction

A number of changes have been implemented with version 1.41, primarily to support the new Zetasizer 1000 & 3000 IHPL (DTS5103/4 & DTS5303/4). The unit is available as a 50mW (DTS5104, DTS5304) product. This document also contains the release information for the MPT1 autotitrator software v1.00, which is needed for the new autotitrator (DTS5900).

Version 1.41 replaces version 1.40 for systems with MPT-1 autotitrators or for systems with Internal High Power Lasers.

Version 1.41 supports all current DTS/PCS instruments as well as all systems that use the 7032 correlator running under the Windows 3.1, 3.11 and Windows95 operating systems.

4. Compatibility

The WindowsNT version of the DTS/PCS software is compatible with any instrument that uses the 7132 correlator and the Zetamaster and Zetasizer 2000 which both use the 70128 internal correlator.

The WindowsNT version is **not** compatible with **any** instrument using the **7032** correlator. It is also **not** compatible with the PCS7 or PCS8 products.

The new Autotitrator (DTS5900) is **not** supported on **any** of the Microsoft Windows 3.xx operating system platforms.

Dispersion Technology and Light Scattering Products (Autosizer, Lo-C, Zetamaster, Zetasizer)
version 1.41 DTS Application Software for use with (English) Microsoft Windows version 3.1,
Windows for Workgroups version 3.11, Windows95, Windows98 and WindowsNT 4.0

This release can be run on the following instruments, provided all other requirements are met or exceeded.

Model and Part Number	Product Name and Description	Correlator	Comments
LOC5011	Lo-C, 90 deg. Single angle size	7032 or 7132	see minimum computer requirements **7032 NOT SUPPORTED under WindowsNT**
4700PS	Autosizer 4700 Spectrometer with manual goniometer and PCS8	7032 or 7132	see minimum computer requirements **NOT SUPPORTED under WindowsNT**
PCS5000 (240V, 50Hz) PCS5004 (110V, 60Hz)	Autosizer 4700PS Spectrometer with motorised goniometer, PCS7, PCS8, 7032 CN correlator	7032 or 7132	see minimum computer requirements **NOT SUPPORTED under WindowsNT**
PCS5001 (240V, 50Hz) PCS5002 (110V, 60Hz)	Autosizer 4700PS Spectrometer with motorised goniometer, PCS7, PCS8, 7032 CE correlator	7032 or 7132	see minimum computer requirements **NOT SUPPORTED under WindowsNT**
PCS5101 (240V, 50Hz) PCS5102 (110V, 60Hz)	Autosizer 4700 Spectrometer with motorised goniometer, PCS7 and PCS8	7032 or 7132	see minimum computer requirements **NOT SUPPORTED under WindowsNT**
PCS5201 (240V, 50Hz) PCS5202 (110V, 60Hz)	Autosizer 4700 Spectrometer with motorised goniometer and PCS0078	7132	see minimum computer requirements
ZEM5000	Zetamaster, zeta potential measurement	Internal 70128	see minimum computer requirements
ZEM5002	Zetamaster S, 90 deg. Single angle size and zeta potential measurement	Internal 70128	see minimum computer requirements
ZET5004	Zetasizer 4, multi-angle size and zeta potential measurement	7032 or 7132	see minimum computer requirements **7032 NOT SUPPORTED under WindowsNT**
ZET5005	Zetasizer 4S, multi-angle size measurement	7032 or 7132	see minimum computer requirements **7032 NOT SUPPORTED under WindowsNT**
DTS5100	Zetasizer 1000, 90 deg. Single angle size	7132	see minimum computer requirements
DTS5101	Zetasizer 1000 HS, 90 deg. Single angle size	7132	see minimum computer requirements
DTS5104	Zetasizer 1000 HS, 90 deg. Single angle size with 532nm laser (50mW)	7132	see minimum computer requirements
DTS5200	Zetasizer 2000, zeta potential measurement	Internal 70128	see minimum computer requirements
DTS5300	Zetasizer 3000, 90 deg. Dual angle size and zeta potential measurement	7132	see minimum computer requirements

Dispersion Technology and Light Scattering Products (Autosizer, Lo-C, Zetamaster, Zetasizer)
version 1.41 DTS Application Software for use with (English) Microsoft Windows version 3.1,
Windows for Workgroups version 3.11, Windows95, Windows98 and WindowsNT 4.0

DTS5301	Zetasizer 3000 HS, 90 deg. Dual angle size and zeta potential measurement	7132	see minimum computer requirements
DTS5304	Zetasizer 3000 HS, 90 deg. Dual angle size and zeta potential measurement with 532nm laser (50mW)	7132	see minimum computer requirements
DTS5400	Zetasizer 4000, multi-angle size measurement	7132	see minimum computer requirements
DTS5500	Zetasizer 5000, multi-angle size and zeta potential measurement	7132	see minimum computer requirements
DTS5900	Multi Purpose Titrator	7132	see minimum computer requirements **NOT SUPPORTED under Windows 3.xx**

5. PCS - Functional Features

5.1   Table 1 - Additions
There are no additions.

5.2   Table 2 - Deletions
There are no deletions.

5.3   Table 3 - Changes
There are no changes

5.4   Table 4 - Bug Fixes

The following bug fixes have been carried out in this release of the application software from the previous release 1.41B1

Malvern Software Change Request Number (SCR)	Description	Comments
794	1.41B1 cannot communicate with correlator under WindowsNT	Corrected
822	Go12 doesn't work as the instrument types are not recognised	Corrected
841	If the baseline is not well defined the automatic computation of the baseline is not correct	Corrected
846,862	The printed reports for a Zetasizer 3000 display the use of an attenuator, even though one was not used.	Corrected
860	Corr Prescale does not work	Corrected
861	The settings used by the FFR macro are not reported correctly	Corrected

5.5   Table 5 - Known Bugs

The following is a list of known bugs (to date) in this and previous releases of software. The bug is generic to all versions of applicable DTS/PCS products unless the entry states otherwise.

Malvern Software Change Request Number (SCR)	Description	Comments
	During any one operating session of the Malvern application software, data files can be opened and closed a maximum number of 58 times before an error occurs. This is due to a Microsoft Windows memory limitation in the way files are currently accessed, and has only been reported during internal testing at Malvern. It is unlikely to be a limitation in normal customer use.	Limitation in current version, but extremely unlikely to cause any user problems.

5.6   Operational Notes

5.6.1   Autotitrator – Model Number ZEM2053 (Mettler DL21)

If the software on a system with an autotitrator is being upgraded, a compatible version of titrator software must also be installed. To operate the autotitrator with PSW0001version 1.41, autotitrator software PSW0008 version 1.56 must be installed. If the software is upgraded using the software upgrade request form, the system configuration details, which will include a Mettler DL21/25 autotitrator, will mean that new autotitrator software will be automatically sent.

5.6.2   New MPT-1 Autotitrator – Model Number DTS5900

The new autotitrator can only be used with Windows95, 98 and NT. The software MPT1 v1.00 must be loaded after installation of the v1.41 DTS/PCS application software.

5.7   Product format

The customer will receive one CD-ROM with the entire DTS product software suite on it. The disk is labelled PSS0001. If required, floppy disk sets can be generated. For details see 'contents.txt' on the CD-ROM.

6. Minimum computer requirements

6.1   Operation with computer connected to optics unit

IBM PC-AT compatible, Pentium 166MHz processor, 32MByte RAM, 30 Mbytes free disk space, one free full length 16 bit ISA type slot, one free RS232C communications port, 3.5" disk drive, CD-ROM drive.
Windows 3.1, 3.11, 95, 98, or NT4 (sp4 or later) installed. 800*600 resolution 256 colour monitor (2 Mbytes video card)
Note: 1. A laptop computer without a free ISA slot is not suitable,
             2. Use with a titrator or autosampler requires two free RS232C communication ports

6.2   Operation with stand alone computer system

For data re-analysis, result printing etc., the software can be installed on a stand alone PC. The computer requirements are as above except that an ISA slot and a communications port is not required.

Note: In this case a notebook computer can be used.

Dispersion Technology and Light Scattering Products (Autosizer, Lo-C, Zetamaster, Zetasizer)
version 1.41 DTS Application Software for use with (English) Microsoft Windows version 3.1,
Windows for Workgroups version 3.11, Windows95, Windows98 and WindowsNT 4.0

7. PCS Software Installation Notes

7.1 Installing over a previously installed version

Before installing the new application software version, it is recommended that if the existing version is installed in the default directory \PCS and \PCS\BMP, then these are copied into a new directory, e.g. \PCSOLD and \PCSOLD\BMP.

This ensures that any customisation of the existing system, saved into the configuration (.ini) files, is preserved. Any changes required can then be made by comparing the new installation with the customised installation in the \PCSOLD directory.

7.2 Existing data

Data in the installation directory will not be affected by the installation procedure.

All data collected using a Windows™ version of PCS/DTS software is compatible with version 1.41 and can be displayed, edited and re-analysed.

7.3 Installation from CD ROM

Follow the instructions in the 'Contents.txt' file on the CD ROM.

7.4 Installation from floppy disk set

To create a floppy disk from CD ROM, follow the instructions in the 'Contents.txt' file on the CD ROM. Then follow the instructions below.

7.5 Floppy disk Installation with Windows 3.1, 3.11, Windows95 and Windows98 operating systems

Insert the diskette labelled DTS/PCS v1.41, Disk 1 of 1, for Windows 3.1, 3.11 & Windows95 & Windows98, PSW0001/1.41 Disk 1 of 3 into the A: drive on your computer.
In Windows 3.1, 3.11 type A:\setup into the File Run dialog in program manager and press enter.
In Windows95 & Windows98 type A:\setup into the Run dialog of the start menu and press enter.

Follow the Install wizard selecting the directory and system type as required. Choose the default C:\pcs. Choosing a different directory will require a modification of the Contin.pif file.

The installation should produce three icons in a PCS group, the actual icons installed will depend on the system selected:
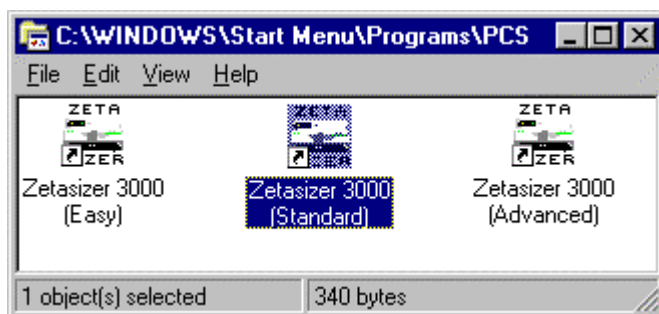
The default directory structure produced should be:

C:\PCS   Malvern application software
C:\PCS\BMP   Icon bitmaps

*Dispersion Technology and Light Scattering Products (Autosizer, Lo-C, Zetamaster, Zetasizer)
version 1.41 DTS Application Software for use with (English) Microsoft Windows version 3.1,
Windows for Workgroups version 3.11, Windows95, Windows98 and WindowsNT 4.0*

7.6   Floppy disk installation with WindowsNT 4.0 operating systems

The setup program will automatically detect NT systems and install the appropriate driver. You should log on to the Windows NT workstation in Administrator mode.

Note that the uninstall facility cannot remove the driver. The driver may be completely uninstalled by stopping it from the Devices control panel applet, deleting the single driver file correla.sys from the Windows NT System32\Drivers directory, and deleting the registry key HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Correla using the Registry Editor tool.

7.6.1   Re-install WindowsNT service pack 4 (or later)

Microsoft specify that "if you change or add new software or hardware components to your system after you have installed service pack 4, then you'll need to install service pack 4 again." (See 3.2 Adding New Components to the System, Windows NT4.0 Service Pack 4 Readme.text file.) Since this is what has just been done, you should perform this step now. Re-install your service pack accepting the defaults.

7.6.2   Checking that the correlator (7132) driver has installed correctly

Reboot the computer, and re-log on.
From the Devices control panel applet, check that the driver "correla.sys" is present in the list of resident drivers.
Start the PCS Windows software, and load the corrtest.pcm macro.
Run the macro and check that all tests pass.

8. Customer deliverables

8.1.1   User Manual

This comprises two sections, the software reference guide and a Basic user's programming guide. If the software is supplied as part of a complete new system the manual is incorporated as part of the users manual.

8.1.2   Application Software

The software is contained on one CD-ROM. The installed software requires about 3Mbytes of hard disk space.

9. New Autotitrator DTS5900 – MPT-1 Application Software.

This is the release information for the MPT-1 (Multi Purpose Titrator) software, version 1.00. The software is designed to be used in conjunction with DTS/PCS software v1.41B1 or higher, and with an instrument from the Zetasizer 1000, 2000 or 3000 ranges ONLY.

9.1   MPT-1 Functional Features

This software allows the user to measure Zeta Potential, Size and Intensity (or combinations of these) as a function of pH, Conductivity or Additive concentration
Functions are also supplied to calibrate the pH and conductivity measuring systems, prime and flush the hydraulic system, dispense fluids, save measurement records and print measurement reports.
This software is for use with Windows 95, Windows98 or Windows NT4 +sp4 and above only.

This software will not work on Windows 3.1x.

Dispersion Technology and Light Scattering Products (Autosizer, Lo-C, Zetamaster, Zetasizer)
version 1.41 DTS Application Software for use with (English) Microsoft Windows version 3.1,
Windows for Workgroups version 3.11, Windows95, Windows98 and WindowsNT 4.0

9.2   Table 1 - Additions

Conductivity titration is now supported.
Coffee Mate TOP

9.3   Table 2 - Deletions

Demonstrations Settings TOP

9.4   Table 3 - Changes

SCRs implemented in this release (previous release v1.00b1):

Malvern Software Change Request Number (SCR)	Description	Comments
762	Time out when zero conductivity measured	Implemented
763	No minimum step size exists	Implemented
765	Inclusion of extra parameters in the reports	Implemented
776	Make volume of titrant used at each pH/conductivity point available	Implemented
777	Printing results after measurement	Implemented
778	Save path on report	Implemented
779	Wrong quantity of titrant added in addition titration	Implemented
781	Customising the titrator operation	Implemented
790	Default Zeta acceptance count rate	Implemented
796	Display of pH, conductivity, additive continuously	Implemented
818	German language compatibility	Implemented
819	Expert mode	Implemented
820	Slow titration mode	Implemented
821	Holes in titration curve	Implemented
823	Titrating from 7 to 3 doesn't work	Implemented
827	Size measurement time limitations	Implemented
843	Calculation of isoelectric point and plot different	Implemented

9.5   Table 4 - Bug Fixes

None

9.6   Table 5 - Known Bugs

None

9.7   Distribution Media

One CD-ROM

Dispersion Technology and Light Scattering Products (Autosizer, Lo-C, Zetamaster, Zetasizer) version 1.41 DTS Application Software for use with (English) Microsoft Windows version 3.1, Windows for Workgroups version 3.11, Windows95, Windows98 and WindowsNT 4.0

10. MPT-1 Autotitrator Software installation notes

DTS/PCS version 1.41B1 or greater must be installed before this software is installed. This is handled automatically if both PCS and Autotitrator software are selected when installing from CD-ROM.

10.1 Installation from CD-ROM
Follow the instructions in the 'Contents.txt' file on the CD-ROM.

10.2 Installation from floppy disk set
To create a floppy disk from CD ROM, follow the instructions in the 'Contents.txt' file on the CD ROM. Then place disk 1 in the floppy drive and run setup by selecting Run… from the Start Menu and typing "a:\setup" in the box.

Follow the instructions on screen. When confirmation of the path to the PCS software is asked for, this must be the path to PCSv1.41B1 or greater.

11. COR3140 Firmware upgrade.

11.1 Changes
SCRs implemented in this release (previous release v1.99):

Malvern Software Change Request Number (SCR)	Description	Comments
964	Power-up sequence changed to block reference beam.	Implemented

Tests by Malvern Instruments indicate that this is not essential but is good practice. This upgrade should normally be installed on the next service visit but as the procedure is very straightforward customers could perform the upgrade themselves.
This upgrade is only required for the 'HS' versions of instrument as detailed in the table below.

DTS5101	Zetasizer 1000 HS, 90 deg. Single angle size
DTS5104	Zetasizer 1000 HS, 90 deg. Single angle size with 532nm laser (50mW)
DTS5301	Zetasizer 3000 HS, 90 deg. Dual angle size and zeta potential measurement
DTS5304	Zetasizer 3000 HS, 90 deg. Dual angle size and zeta potential measurement with 532nm laser (50mW)

11.2 Installation from CD ROM
1. Ensure the Zetasizer is powered-up and connected via the RS-232 cable to the PC.

2. From Explorer or File Manager open the following directory on the CD-ROM:

   \Firmware\v2.00

3. Run the UPDATE.EXE program by double-clicking on it.

4. On the dialog that appears, click on the **Send** button. The firmware update will commence. This takes about 20 minutes.

5. On terminating, you will be prompted by a message box stating that the board has programmed successfully.

11.3 Installation from floppy disk set
To create a floppy disk from CD ROM, copy the contents of the v2.00 folder identified above to a floppy disk. Insert the disk in Drive A: of the system PC and follow the instructions above.

Dispersion Technology and Light Scattering Products (Autosizer, Lo-C, Zetamaster, Zetasizer)
version 1.41 DTS Application Software for use with (English) Microsoft Windows version 3.1,
Windows for Workgroups version 3.11, Windows95, Windows98 and WindowsNT 4.0

12. Appendix A – Directory Structures

The following is a list of the Malvern Instruments-originated files that should be present following installation. Please note the following points:

- .ini files holding configuration settings are not overwritten and will be dependant on the individual users system.
- Windows system files used by the application are not Malvern Instruments-originated and are not listed here. If other applications are installed after the Malvern Instruments software, Windows system files may be changed. This does not normally affect the operation of Malvern Instruments' software. If this is a concern then access to the PC should be controlled through physical means or by use of Windows NT security.

12.1 PCS Application Software PSW0001/1.41

Directory Structure C:\PCS for Windows 3.1, 3.11, Windows95 and Windows98

```
Directory of \PCS
.                <DIR>        13/10/99  14:21 .
..               <DIR>        13/10/99  14:21 ..
BMP              <DIR>        13/10/99  14:22 BMP
1        PCM          36      17/01/97  15:10 1.PCM
12SIZE   PCM       4,862      08/12/98  10:11 12SIZE.PCM
2        PCM          35      17/01/97  15:10 2.PCM
3        PCM          36      17/01/97  15:10 3.PCM
AQCLEAN  PCM         890      25/09/97  10:35 AQCLEAN.PCM
AUTOINT  PCP       5,846      08/12/98  10:09 AUTOINT.PCP
AUTOSAM  DLL      55,632      08/07/97  10:25 AUTOSAM.DLL
AUTOSIZE PCP       5,212      08/03/99  13:47 AUTOSIZE.PCP
AUTOSIZE WMF       3,640      12/03/97  17:04 AUTOSIZE.WMF
CHECKCR  PCM         844      09/04/98   9:56 CHECKCR.PCM
CMEMDSP  EXE       1,779      25/03/96  17:34 CMEMDSP.EXE
CONTIN   EXE     300,466      27/07/93  10:25 CONTIN.EXE
CONTIN   PIF         995      05/02/97  13:20 CONTIN.PIF
CORRLIB  DLL     281,920      13/09/99  13:51 CORRLIB.DLL
CORRTEST PCM       4,875      27/05/98  12:25 CORRTEST.PCM
CTL3D    DLL      20,272      24/06/93  14:19 CTL3D.DLL
DDELINK  PCM         275      05/12/96  16:28 DDELINK.PCM
DEFAULT  INT       1,134      28/04/94  12:50 DEFAULT.INT
DEFAULT  ZET      67,804      08/12/92  18:40 DEFAULT.ZET
FULLSIZE PCP       2,841      14/08/98  12:50 FULLSIZE.PCP
FULLZETA PCP       3,162      08/03/99  13:47 FULLZETA.PCP
GO12     PCM       5,680      31/08/99  12:40 GO12.PCM
HEADER   WMF      12,092      04/08/91  19:50 HEADER.WMF
INTENSTY PCP       4,997      08/03/99  13:47 INTENSTY.PCP
ISC      HEX      28,234      29/08/96  16:10 ISC.HEX
ISO13321 PCM       4,606      08/03/99  12:02 ISO13321.PCM
ISO13321 PCP       8,113      08/03/99  13:43 ISO13321.PCP
LINEAR   EXE       2,534      17/07/96  22:53 LINEAR.EXE
LOADCAL  PCM       1,432      12/08/97  16:16 LOADCAL.PCM
LOG      EXE      10,506      10/09/96  15:33 LOG.EXE
LOG192   EXE      14,546      11/09/96  11:02 LOG192.EXE
MACRO    HLP     131,170      02/12/97  16:42 MACRO.HLP
MENUS    HLP      97,336      22/09/97  13:48 MENUS.HLP
PCOEX    PCM         889      09/04/98   9:56 PCOEX.PCM
PCS      EXE     793,376      13/09/99  14:43 PCS.EXE
```

```
POKEX1   PCM          154  09/04/98   9:56  POKEX1.PCM
POKEX2   PCM          195  09/04/98   9:56  POKEX2.PCM
POKEX3   PCM          220  09/04/98   9:56  POKEX3.PCM
POKEX4   PCM          318  09/04/98   9:56  POKEX4.PCM
POKEX5   PCM          244  09/04/98   9:56  POKEX5.PCM
READCAL  PCM          620  12/08/97  16:16  READCAL.PCM
REPORT   PCP          734  06/02/95  11:49  REPORT.PCP
RS232    PCM           51  05/12/96  16:28  RS232.PCM
SERVICE  EXE        5,697  26/08/96   9:47  SERVICE.EXE
SIMULATE PCM           43  05/12/96  16:28  SIMULATE.PCM
SIZE     PCP        5,508  17/03/99  17:24  SIZE.PCP
SIZEMODE PCM           11  05/12/96  16:28  SIZEMODE.PCM
SIZEREP1 PCP        2,144  20/05/94  15:39  SIZEREP1.PCP
STORE    HEX       28,234  17/06/96  10:55  STORE.HEX
TSTMAC   PCM          500  08/01/99  16:57  TSTMAC.PCM
UNINST   ISU       97,040  13/10/99  14:22  Uninst.isu
VALVE    PCM           82  05/12/96  16:28  VALVE.PCM
Z1000    INI       13,355  13/10/99  14:22  Z1000.INI
Z1000C   INI       13,355  13/10/99  14:22  Z1000C.INI
ZETA     PCP        6,454  08/03/99  13:47  ZETA.PCP
ZETAMA   WMF        2,234  22/02/93  15:26  ZETAMA.WMF
ZETAMAS1 PCP        2,728  08/03/99  13:47  ZETAMAS1.PCP
ZETAMODE PCM           11  05/12/96  16:28  ZETAMODE.PCM
ZETAREP1 PCP        2,696  08/03/99  13:47  ZETAREP1.PCP
ZETASIZE WMF        3,004  12/03/97  17:03  ZETASIZE.WMF
ZIMMEX   INT        3,536  25/02/97  22:32  ZIMMEX.INT
ZSIZER   INT        1,134  28/04/94  12:50  ZSIZER.INT
ZSIZER   SZ2       15,072  16/09/99  14:29  ZSIZER.SZ2
ZSIZER   ZET       27,738  16/05/94  13:38  ZSIZER.ZET
         64 file(s)     2,111,179 bytes


Directory of \BMP
.              <DIR>          13/10/99  14:22  .
..             <DIR>          13/10/99  14:22  ..
CONC     BMP          654  05/12/96  16:28  CONC.BMP
DOCUMENT BMP          502  05/12/96  16:28  DOCUMENT.BMP
EXIT     BMP          502  05/12/96  16:28  EXIT.BMP
GO       BMP          502  05/12/96  16:28  GO.BMP
GO12     BMP          502  05/12/96  16:28  GO12.BMP
HELP     BMP          502  05/12/96  16:28  HELP.BMP
INSPECT  BMP          502  05/12/96  16:28  INSPECT.BMP
ISO4     BMP          502  05/12/96  16:28  ISO4.BMP
MIX      BMP          502  05/12/96  16:28  MIX.BMP
OPENFIL2 BMP          502  05/12/96  16:28  OPENFIL2.BMP
OPENFILE BMP          502  05/12/96  16:28  OPENFILE.BMP
PRINT    BMP          502  05/12/96  16:28  PRINT.BMP
SETUP    BMP          502  05/12/96  16:28  SETUP.BMP
SIZEMODE BMP        1,870  07/11/96  16:44  SIZEMODE.BMP
SPACE    BMP          502  05/12/96  16:28  SPACE.BMP
STOP     BMP          502  05/12/96  16:28  STOP.BMP
STOPLARG BMP          502  05/12/96  16:28  STOPLARG.BMP
TEMPLATE BMP          502  05/12/96  16:28  TEMPLATE.BMP
WASH     BMP          502  05/12/96  16:28  WASH.BMP
ZBUTTO10 BMP          502  05/12/96  16:28  ZBUTTO10.BMP
ZETAMODE BMP        1,870  07/11/96  16:42  ZETAMODE.BMP
ZMLEFT   BMP          502  05/12/96  16:28  ZMLEFT.BMP
```

Dispersion Technology and Light Scattering Products (Autosizer, Lo-C, Zetamaster, Zetasizer)
version 1.41 DTS Application Software for use with (English) Microsoft Windows version 3.1,
Windows for Workgroups version 3.11, Windows95, Windows98 and WindowsNT 4.0

```
ZMRIGHT  BMP            502  05/12/96  16:28 ZMRIGHT.BMP
       23 file(s)          14,434 bytes


Total files listed:
       87 file(s)       2,125,613 bytes
```

Directory Structure C:\PCS for WindowsNT

```
Directory of \PCS
13/10/99  12:45        <DIR>           .
13/10/99  12:45        <DIR>           ..
13/10/99  12:45        <DIR>           BMP
17/01/97  15:10                    36 1.PCM
08/12/98  10:11                 4,862 12SIZE.PCM
17/01/97  15:10                    35 2.PCM
17/01/97  15:10                    36 3.PCM
13/10/99  12:43                15,707 4700.INI
13/10/99  12:43                11,857 4700_C.INI
13/10/99  12:43                11,857 4700_CC.INI
13/10/99  12:43                15,707 4700C.INI
13/10/99  12:43                11,870 4701.INI
13/10/99  12:43                11,870 4701C.INI
25/09/97  10:35                   890 AQCLEAN.PCM
08/12/98  10:09                 5,846 AUTOINT.PCP
08/07/97  10:25                55,632 AUTOSAM.DLL
08/03/99  13:47                 5,212 AUTOSIZE.PCP
12/03/97  17:04                 3,640 AUTOSIZE.WMF
05/01/99  14:01                18,972 callcorr.dll
09/04/98  09:56                   844 CHECKCR.PCM
25/03/96  17:34                 1,779 CMEMDSP.EXE
27/07/93  10:25               300,466 CONTIN.EXE
05/02/97  13:20                   995 CONTIN.PIF
27/09/99  10:24               282,080 CORRLIB.DLL
27/05/98  12:25                 4,875 CORRTEST.PCM
11/12/98  17:05                28,672 CORRVDD.VDD
24/06/93  14:19                20,272 CTL3D.DLL
05/12/96  16:28                   275 DDELINK.PCM
28/04/94  12:50                 1,134 DEFAULT.INT
08/12/92  18:40                67,804 DEFAULT.ZET
14/08/98  12:50                 2,841 FULLSIZE.PCP
08/03/99  13:47                 3,162 FULLZETA.PCP
31/08/99  12:40                 5,680 GO12.PCM
04/08/91  19:50                12,092 HEADER.WMF
08/03/99  13:47                 4,997 INTENSTY.PCP
29/08/96  16:10                28,234 ISC.HEX
08/03/99  12:02                 4,606 ISO13321.PCM
08/03/99  13:43                 8,113 ISO13321.PCP
17/07/96  22:53                 2,534 LINEAR.EXE
12/08/97  16:16                 1,432 LOADCAL.PCM
13/10/99  12:43                11,723 LOC.INI
13/10/99  12:43                11,729 LOC_C.INI
13/10/99  12:43                11,729 LOC_CC.INI
13/10/99  12:43                11,723 LOCC.INI
10/09/96  15:33                10,506 LOG.EXE
11/09/96  11:02                14,546 LOG192.EXE
```

Dispersion Technology and Light Scattering Products (Autosizer, Lo-C, Zetamaster, Zetasizer)
version 1.41 DTS Application Software for use with (English) Microsoft Windows version 3.1,
Windows for Workgroups version 3.11, Windows95, Windows98 and WindowsNT 4.0

```
13/10/99  12:43          11,744 M4700.INI
13/10/99  12:43          11,872 M4700_C.INI
13/10/99  12:43          11,872 M4700_CC.INI
13/10/99  12:43          11,744 M4700C.INI
02/12/97  16:42         131,170 MACRO.HLP
22/09/97  13:48          97,336 MENUS.HLP
09/04/98  09:56             889 PCOEX.PCM
13/09/99  14:43         793,376 PCS.EXE
09/04/98  09:56             154 POKEX1.PCM
09/04/98  09:56             195 POKEX2.PCM
09/04/98  09:56             220 POKEX3.PCM
09/04/98  09:56             318 POKEX4.PCM
09/04/98  09:56             244 POKEX5.PCM
12/08/97  16:16             620 READCAL.PCM
06/02/95  11:49             734 REPORT.PCP
05/12/96  16:28              51 RS232.PCM
26/08/96  09:47           5,697 SERVICE.EXE
05/12/96  16:28              43 SIMULATE.PCM
17/03/99  17:24           5,508 SIZE.PCP
05/12/96  16:28              11 SIZEMODE.PCM
20/05/94  15:39           2,144 SIZEREP1.PCP
17/06/96  10:55          28,234 STORE.HEX
13/10/99  12:45              64 TConfig.pcm
13/10/99  12:45              97 TFlush.pcm
13/10/99  12:45             130 TMeasure.pcm
08/01/99  16:57             500 TSTMAC.PCM
13/10/99  12:43         181,738 Uninst.isu
05/12/96  16:28              82 VALVE.PCM
13/10/99  12:45          14,680 Z1000.INI
13/10/99  12:45          14,680 Z1000C.INI
13/10/99  12:45          14,677 Z1000HP.INI
13/10/99  12:45          14,677 Z1000HPC.INI
13/10/99  12:45          14,680 Z1000HS.INI
13/10/99  12:45          14,680 Z1000HSC.INI
13/10/99  12:45          14,179 Z2000.INI
13/10/99  12:45          14,179 Z2000C.INI
13/10/99  12:45          17,930 Z3000.INI
13/10/99  12:45          17,930 Z3000C.INI
13/10/99  12:45          17,930 Z3000HP.INI
13/10/99  12:45          17,930 Z3000HPC.INI
13/10/99  12:45          17,930 Z3000HS.INI
13/10/99  12:45          17,930 Z3000HSC.INI
13/10/99  12:43          13,560 Z4000.INI
13/10/99  12:43          13,560 Z4000C.INI
13/10/99  12:43          14,713 Z5000.INI
13/10/99  12:43          14,713 Z5000C.INI
13/10/99  12:43          14,349 ZETA.INI
08/03/99  13:47           6,454 ZETA.PCP
13/10/99  12:43          14,349 ZETAC.INI
22/02/93  15:26           2,234 ZETAMA.WMF
08/03/99  13:47           2,728 ZETAMAS1.PCP
05/12/96  16:28              11 ZETAMODE.PCM
08/03/99  13:47           2,696 ZETAREP1.PCP
12/03/97  17:03           3,004 ZETASIZE.WMF
13/10/99  12:43          13,195 ZETASO.INI
13/10/99  12:43          13,195 ZETASOC.INI
```

Dispersion Technology and Light Scattering Products (Autosizer, Lo-C, Zetamaster, Zetasizer)
version 1.41 DTS Application Software for use with (English) Microsoft Windows version 3.1,
Windows for Workgroups version 3.11, Windows95, Windows98 and WindowsNT 4.0

```
25/02/97  22:32                      3,536 ZIMMEX.INT
13/10/99  12:43                     13,266 ZMSTER.INI
13/10/99  12:43                     13,266 ZMSTERC.INI
13/10/99  12:43                     15,372 ZMSTERS.INI
13/10/99  12:43                     15,372 ZMSTERSC.INI
28/04/94  12:50                      1,134 ZSIZER.INT
16/09/99  14:29                     15,072 ZSIZER.SZ2
16/05/94  13:38                     27,738 ZSIZER.ZET
             110 File(s)         2,783,188 bytes


Directory of \BMP
13/10/99  12:45         <DIR>              .
13/10/99  12:45         <DIR>              ..
05/12/96  16:28                        654 CONC.BMP
05/12/96  16:28                        502 DOCUMENT.BMP
05/12/96  16:28                        502 EXIT.BMP
09/02/99  15:44                        502 Flush.bmp
05/12/96  16:28                        502 GO.BMP
09/02/99  17:08                        502 Go_MPT1.bmp
05/12/96  16:28                        502 GO12.BMP
05/12/96  16:28                        502 HELP.BMP
05/12/96  16:28                        502 INSPECT.BMP
05/12/96  16:28                        502 ISO4.BMP
05/12/96  16:28                        502 MIX.BMP
05/12/96  16:28                        502 OPENFIL2.BMP
05/12/96  16:28                        502 OPENFILE.BMP
05/12/96  16:28                        502 PRINT.BMP
05/12/96  16:28                        502 SETUP.BMP
07/11/96  16:44                      1,870 SIZEMODE.BMP
05/12/96  16:28                        502 SPACE.BMP
05/12/96  16:28                        502 STOP.BMP
05/12/96  16:28                        502 STOPLARG.BMP
05/12/96  16:28                        502 TEMPLATE.BMP
09/02/99  15:05                        502 Titrator.bmp
05/12/96  16:28                        502 WASH.BMP
05/12/96  16:28                        502 ZBUTTO10.BMP
07/11/96  16:42                      1,870 ZETAMODE.BMP
05/12/96  16:28                        502 ZMLEFT.BMP
05/12/96  16:28                        502 ZMRIGHT.BMP
              28 File(s)            15,940 bytes


       Total Files Listed:
             138 File(s)         2,799,128 bytes
```

12.2   MPT-1 Autotitrator Application Software PSW0058/1.00

Directory Structure C:\MPT-1 PCS for, Windows95, Windows98 and WindowsNT.

```
Directory of \

13/10/99  12:45         <DIR>              .
13/10/99  12:45         <DIR>              ..
13/10/99  12:45         <DIR>         BMP
24/06/99  17:09                        616 !Default.TOP
02/09/99  17:14                        722 autotitrator.CNT
```

Dispersion Technology and Light Scattering Products (Autosizer, Lo-C, Zetamaster, Zetasizer)
version 1.41 DTS Application Software for use with (English) Microsoft Windows version 3.1,
Windows for Workgroups version 3.11, Windows95, Windows98 and WindowsNT 4.0

```
02/09/99  17:14              416,244 AUTOTITRATOR.HLP
16/07/99  14:11                  720 Coffee_Mate.TOP
09/08/99  12:01                5,499 Int_titr.pcp
09/08/99  12:01                5,569 Sizetitr.pcp
06/09/99  09:49              909,312 Titrator.exe
13/10/99  12:45              100,555 Uninst.isu
06/08/99  16:10                8,046 Zetatitr.pcp
             12 File(s)    1,447,283 bytes


Directory of \BMP
13/10/99  12:45      <DIR>          .
13/10/99  12:45      <DIR>          ..
09/02/99  15:44                  502 Flush.bmp
09/02/99  17:08                  502 Go_MPT1.bmp
09/02/99  15:05                  502 Titrator.bmp
              5 File(s)        1,506 bytes


    Total Files Listed:
             17 File(s)    1,448,789 bytes
```