

NucleoCounter[®] NC-202[™]

Instrument User Guide

P/N 991-2020

Revision 1.4

August 2020



Caution!

This equipment must be operated as described in this user guide and documents referenced herein. Please read the entire guide and referenced documents before using the NucleoCounter® NC-202™. Gloves or protective clothing may not be shown in the pictures in this user guide; however, ChemoMetec recommends that the user wear suitable protective clothing.

Contacting Support

Technical information including product literature, answers to questions not covered in this document and referred documents regarding the operation of the NucleoCounter® NC-202™ is available from our support team:

- E-mail questions to support@chemometec.com
- To speak with a Technical Support Specialist, call (+45) 48 13 10 20

Please create support files in NC-View™ via Help → Create support files, before contacting us.

Sales and Ordering Information

To order the NucleoCounter® NC-202™, NC-View™ software and consumables, call (+45) 48 13 10 20, fax (+45) 48 13 10 21, or e-mail sales@chemometec.com.

Disclaimer Notices

The material in this document and referred documents is for information only and is subject to change without notice. While reasonable efforts have been made in preparation of these documents to ensure their accuracy, ChemoMetec assumes no liability resulting from errors or omissions in these documents, or from the use of the information contained herein.

ChemoMetec reserves the right to make changes in the product design without reservation and without notification to its users.

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Declaration of Conformity - *EXAMPLE*

Name of product: NucleoCounter® NC-202™
Type: Automated Cell Counter
Other identifying data: Part no. 900-2020

We declare under our sole responsibility that the products, to which this declaration relates, are in conformity with the Council Directives on the approximation of the laws of the EEC Member States relating to the following:

Directives	Electromagnetic Compatibility (2014/30/EU) EMC Low Voltage Directive (2014/35/EC) LVD Machinery Directive (2006/42/EC) MD
Standards EMC:	EN 61326-1:2013 Electrical equipment for laboratory use EN 61000-3-2: 2014 Limits for harmonic current emissions EN 61000-3-3: 1995 +A1 +A2: 2013 Limitation of voltage changes, voltage fluctuations and flicker
Standards MD:	EN 12100-1: 2003 Safety of machinery; Basic concepts, general principles for design — Part 1 EN 12100-2: 2003 Safety of machinery; Basic concepts, general principles for design — Part 2: EN ISO 14121-1:2007 Safety of machinery; risk assessment

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: i) this device may not cause harmful interference; and ii) this device must accept any interference received, including interference that may cause undesired operation.

Date & Signature will appear on the instrument's actual Declaration of Conformity statement, accompanying each new instrument order.

Name and address of manufacturer:

ChemoMetec A/S
Gydevang 43
DK-3450 Allerød
DENMARK
www.chemometec.com

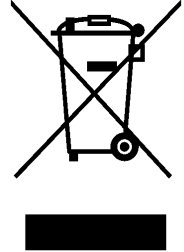
WEEE Directive Information – Europe Only

Correct Disposal of This Product (Waste Electrical & Electronic Equipment) - Europe only

This marking shown on the product or its literature, indicates that it should not be disposed of together with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

This information is listed in “Appendix A: WEEE Directive Information in More EU Languages”.



Introduction and Intended Use

The NucleoCounter® NC-202™ is a compact, automated cell counter intended for cell counting within the life science and pharmaceutical markets. The NucleoCounter® NC-202™ system is intended for research use only, not for diagnostic use. The NucleoCounter® NC-202™ uses disposable cassettes from ChemoMetec.


The NucleoCounter® NC-202™ is an advanced cell counter based on low magnification fluorescence microscopy using LED light and CMOS camera technology, combined with automated image analysis. Cells are analyzed using two fluorescence channels, where the spatial position is maintained between images, allowing direct comparison and quantification of parameters at single cell level. Low magnification ($\times 2.1$) and a large sensor area (2/3") facilitate a high volume of analytical samples, thereby providing great statistical performance. The NucleoCounter® NC-202™ light sources deliver homogeneous sample illumination, which reduces systematic errors in fluorescence signal intensities across the measurement area and increases the accuracy of cell counting values.

The NucleoCounter® NC-202™ requires NC-View™ software to operate. NC-View™ is distributed with a list of protocols employing two fluorescence channels to analyze cells. Instrument qualification protocols are included in the software.

The NucleoCounter® NC-202™ uses the Via2-Cassette™, which contain fluorescent dyes and allow the NucleoCounter® NC-202™ to detect cells. The NucleoCounter® NC-202™ is the third generation of NucleoCounter® cassette instruments, succeeding the NucleoCounter® NC-100 and NucleoCounter® NC-200™.

The NucleoCounter® NC-202™ ChemoMetec part number is 900-2020.

Warnings and Precautions

Whenever the  symbol appears on the NucleoCounter® NC-202™ instrument, it indicates that the manual must be consulted for precautions and warnings.

Power Supply and Cables

Use the shielded USB cable supplied with the NucleoCounter® NC-202™ to ensure that appropriate EMI classification is maintained for the intended environment.




 The USB interface connector must only be connected to SELV circuits. External computing devices connected to the USB interface connector of the NucleoCounter® NC-202™ must comply with standards UL 1950 and IEC/EN 60950.


Table 1: Description of the NucleoCounter® NC-202™ USB 3.0 micro interface connector


Pin	Pin Name	Pin Description	Maximum Voltage level ¹
1	VBUS	+5V	+5 VDC
2	USB D-	USB 2.0 differential pair	+3.5 VDC
3	USB D+	USB 2.0 differential pair	+3.5 VDC
4	OTG ID	USB OTG ID for identifying lines	
5	GND	Ground	0 VDC
6	USB3 SSTX-	USB 3.0 signal transmission line	
7	USB3 SSTX+	USB 3.0 signal transmission line	
8	GND	Ground	
9	USB3 SSRX-	USB 3.0 signal receiving line	
10	USB3 SSRX+	USB 3.0 signal receiving line	

The NucleoCounter® NC-202™ is powered by an external 24VDC power supply. For safe use, please follow the instructions for connecting the power supply.

 The NucleoCounter® NC-202™ should only be used with an external power supply purchased from ChemoMetec.

 The detachable DC power supply cable set and the appliance inlet of the external power supply are considered as the disconnecting device.

 The main supply cable and plug of the external power supply should comply with any national regulations.

 The user is made aware that if the NucleoCounter® NC-202™ and the external power supply are used in a manner not specified in this user guide, the protection may be impaired.

¹ In normal operation mode (refers to Pin no 5 and/or 8)

Electromagnetic Interference

NOTE: This equipment has been tested to meet the Class B digital device limits, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential 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. However, there is no guarantee that interference will not occur in any given installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment to an outlet on a circuit different from the receiver connection
- Consult the dealer or an experienced radio/TV technician for help

Caution! Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Cassettes, Reagents, Solutions and Dispensers

With respect to the use and handling of cassettes, reagents, solutions and dispensers, please refer to appropriate package inserts for these items.

Caution! Bottle-top dispenser: To protect against accidental spills, protective clothing, eye protection and gloves must be worn when using potentially hazardous liquids.

General Precautions

Any biological specimen should be handled as if capable of transmitting infectious diseases and disposed of with proper precautions according with national, federal, state and local regulations.

Avoid specimen contact with skin or mucous membranes.

Never pipette by mouth.

Avoid cross contamination of samples during preparation. This can compromise the quality of results.

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1 Inspection, Unpacking and Installation of Equipment

Upon receiving the order from ChemoMetec, the box or boxes should be carefully inspected for any damage that may have occurred during shipping. Any damage must be reported to the carrier and to ChemoMetec immediately.

Unpack the boxes, saving the packing materials for possible later use.

Verify that the ChemoMetec packing list received refers to the correct and ordered materials, and that nothing is missing.

If any part of the order was damaged during shipping, is missing or fails to operate, please contact ChemoMetec immediately.

1.1 Installation and Operation Qualification of NucleoCounter® NC-202™

The NucleoCounter® NC-202™ Installation Qualification (IQ) / Operational Qualification (OQ) / Zero Count Application Note (# 994-2022) describes the IQ/OQ/Zero Count protocol. Execution of the IQ protocol will ensure that the instrument is installed correctly. The Operational Qualification (OQ) protocol verifies that the instrument is operating correctly.

Once IQ, OQ and Zero Count protocols are finalized successfully, the NucleoCounter® NC-202™ is ready for use.

The application note for the IQ/OQ/Zero Count protocol is available at www.chemometec.com.

2 Cell Counting with NucleoCounter® NC-202™

The NucleoCounter® NC-202™ is a dual-color fluorescent cell counting instrument. The NucleoCounter® NC-202™ is simple to operate, requiring little user input to execute e.g. cell counting protocols.

The NucleoCounter® NC-202™ is operated by NC-View™ software.

2.1 The NucleoCounter® NC-202™ instrument

The NucleoCounter® NC-202™ instrument is shown below:



2.1.1 Fluorescence microscope

The NucleoCounter® NC-202™ is a fully automated fluorescent microscope with a $\times 2.1$ magnification. It is equipped with two light sources and a dual-band emission filter.

Together with the Via2-Cassette™ the NucleoCounter® NC-202™ provides a straight-forward set-up, performing advanced analysis in an easy-to-use manner, so that personnel training will be simple and variation between operators will be limited.

2.1.2 Protocols

The NucleoCounter® NC-202™ and NC-View™ software are delivered with a list of protocols to count cells and perform instrument validation. Currently, the protocols included are:

- Count & Viability
- NC-202 IQ/OQ

New protocols are developed at an on-going basis and an up-to-date list of available protocols can be found at www.chemometec.com.

2.1.3 The RUN button and LED indicator

On the front of the NucleoCounter® NC-202™ there is a RUN button. Activating this will run the selected type of analysis on the instrument. In this way, it is easy to perform several identical analyses in a routine manner.

2.1.4 Cassette fixture

The NucleoCounter® NC-202™ has a new cassette fixture design, allowing the Via2-Cassette™ to be inserted without any resistance. Executing a protocol will close the cassette fixture by electromagnetic force, ensuring perfect alignment of the cassette counting chamber with the focal plane. The electromagnetic force is caused by two electromagnetic actuators.

To ensure consistency during closing and positioning of the focal plane, these two electromagnetic actuators are operated with a small delay (0.1 sec). In some cases, this creates audible mechanical “double clicks”. However, an audible mechanical “single click” is also possible. Both audible patterns are normal.

Before closing the cassette fixture, a piston will press the Via2-Cassette™ plunger, driving the cells through the staining channels and into the counting chamber.

These two mechanisms promote data consistency by using identical loading and focus parameters between samples.

In rare cases, a Via2-Cassette™ is skew, and you may experience some resistance when placing the Via2-Cassette™ into the fixture. Ensure that the cassette is placed fully into the fixture and proceed as usual. A skew Via2-Cassette™ will not affect your results.

Refer to section “5.1 Cleaning” for guidelines on how to clean the fixture.

2.1.5 USB 3 connection

At the rear of the instrument, a USB data connection (rev 3.0 or higher), a DC power connection and a DC fuse holder can be found. Please always take care of these areas and keep them free of liquids and foreign objects.

2.2 The Via2-Cassette™



Figure 1: The Via2-Cassette™ contains two fluorescent dyes, AO (Acridine Orange) and DAPI (4',6-diamidino-2-phenylindole), deposited in the first part of the flow system

2.2.1 Loading the Via2-Cassette™ cassette

The Via2-Cassette™ is loaded by pressing the white piston down while the cassette tip is immersed in the cell sample (Figure 3). Pressing the piston creates a vacuum that draws approximately 60 µl cell sample into the cassette flow system. The Via2-Cassette™ is designed for microcentrifuge tubes and accepts a minimum sample volume of 100 µl.



Figure 2: Loading the Via2-Cassette™

After loading the Via2-Cassette™, the sample buffer dissolves the fluorescent dyes, AO (Acridine Orange) and DAPI (4',6-diamidino-2-phenylindole), deposited inside the flow channels. The dyes instantly dissolve and stain the loaded cell sample.

After loading the Via2-Cassette™, it is inserted into the NucleoCounter® NC-202™ instrument. Pressing the RUN button will execute the cell counting protocol, that directs the instrument to i) move the piston to drive the cell sample through the mixing channels and into the measurement chamber; ii) fixate the cassette in the slot; and iii) record the fluorescence images, analyze data and present the counting result.

Once analysis is complete, the sample and dyes are contained inside the cassette, which can be safely discarded. This offers unique and safe sample handling and disposal.

The NucleoCounter® NC-202™ does not need cleaning or maintenance, since the cell samples are not in direct contact with the instrument. The cell sample is contained within the Via2-Cassette™ and disposed of along with it. For regulated processes it is recommended to perform periodic validation checks to document nominal performance of the NucleoCounter® NC-202™ instrument and Via2-Cassette™.

2.2.2 Via2-Cassette™ volume calibration dot code

During Via2-Cassette™ production, the precise depth of the measurement chamber is measured for every individual cassette, and a dot code is printed on the cassette. This dot code is read by the NucleoCounter® NC-202™ instrument and used to convert the absolute cell number into a cell concentration.

2.2.3 Cassette handling

The image analysis method of the NC-View™ offers considerable stability and can handle minor scratches and fingerprints on the cassette windows. However, cell count quality is best assured by keeping the windows of the cassette as clean as possible. The image analysis will search for air bubbles, compensate the data, and flag the data point as containing a bubble.

Be careful when attempting to wipe foreign objects off the cassette surface since the plastic material of the cassette can be scratched. See how to place and remove the cassette in section 2.2.1 “Declaration of Conformity”.

3 NucleoCounter® NC-202™ – Instrument Controls

3.1 Interactive Controls



Figure 3: Front of the NucleoCounter® NC-202™

The NucleoCounter® NC-202™ has two operational areas:

- Cassette fixture covered by a yellow lid
- RUN button and tri-color LED status indicator

The lid is secured to the NucleoCounter® NC-202™ instrument with a magnet and can be either opened or removed entirely during operation, exposing the cassette fixture.

The cassette is placed in the cassette fixture and locked in position by an electromagnet when running a protocol. Fixing the cassette during acquisition ensures that the measurement chamber and, in turn, the cells are always at the best focal setting.

The RUN button and LED indicator are placed to the right of the lid. The RUN button is used to execute the protocol selected in the NC-View™ software.

The LED indicator shows the instrument status:

- Green - the NucleoCounter® NC-202™ is ready for the next operation
- Red - the NucleoCounter® NC-202™ is busy or not connected
- Orange - the NucleoCounter® NC-202™ has lost connection to NC-View™

3.2 NucleoCounter® NC-202™ Connections

Rear view of the instrument (Figure 5) features the DC power inlet, fuse holder (Figure 6) and a USB 3.0 socket (Figure 7). The NucleoCounter® NC-202™ is delivered with a region-specific power cable to connect the external power supply to the main power supply.



Figure 4: Rear view of the NucleoCounter® NC-202™

3.2.1 NC-202™ power connection

The NucleoCounter® NC-202™ is powered by a 24VDC external power supply (Figure 6), accepting between 100 - 240 V. It is not necessary to turn off the NucleoCounter® NC-202™ between uses. When idle (Ready mode) the NucleoCounter® NC-202™ uses only 7 W.





Figure 5: DC power socket

3.2.2 USB connection and initialization

The NucleoCounter® NC-202™ is connected using a USB 3.0 micro B – A or B – C cable. Only cables provided by ChemoMetec should be used with the instrument.



Figure 6: USB 3.0 port


Launching the NC-View™ software commences a short initialization sequence, which includes an instrument communication check and positioning of the piston motor. After initialization, the LED status indicator turns green and the NucleoCounter® NC-202™ is ready for operation. NC-View™ software connection is indicated by the changing color of the NC-View™ icon, and activation of the  *Run* and  *Eject* icons on the software main window.

4 Operation of NC-View™ Software and NucleoCounter® NC-202™ Instrument

4.1 NC-View™ Software

The NC-View™ software is used for data acquisition, image analysis and display of results. For further details regarding NC-View™, refer to the NC-View™ Software User Guide (#991-2022).

4.2 Protocol Execution

Once the NucleoCounter® NC-202™ and the NC-View™ software are connected, analysis can begin. In the main window, the  *Run* icon in the NC-View™ software or the RUN button on the instrument can be used to execute the protocol of interest.

A standard operating procedure for NucleoCounter® NC-202™ should include the following steps:

1. Select protocol
2. Enter sample ID
3. Mix the cell sample by inverting sample tube a few times
4. Load the Via2-Cassette™ with the cell sample
5. Place the cassette into the NC-202™ cassette fixture and close the lid (fig. 8)
6. Press RUN
7. Review the image data
8. View the displayed results

After analysis, the cassette is removed from the fixture and disposed of as biological waste according to national or regional regulations.



Figure 8: How to hold and place the Via2-Cassette™ in the fixture

4.2.1 *Piston movements*

When a cassette is analyzed, the piston motor will move the piston rod down through the cassette cylinder. Hereby, the sample is transported to the cassette's measurement chamber while sensors monitor the sample flow. When the sample has been loaded into the measurement chamber and reaches the end of the flow channel, the piston is stopped.

4.3 Protection of the Optical System

The lid covering the cassette fixture is designed to protect the analysis area from dust and other potential contaminants and keep external light from interfering with fluorescent image recording. The lid is mounted with a magnetic hinge.

The lid should always be closed to protect the instrument's optical system, except when inserting or removing a cassette, or cleaning the fixture.

5 Maintenance of NucleoCounter® NC-202™

5.1 Cleaning

5.1.1 Instrument cabinet

The NucleoCounter® NC-202™ cabinet should be cleaned at regular intervals by gently wiping the surface with a soft cloth and a mild detergent. Never use organic solvents or aggressive detergents to clean the exterior of the NucleoCounter® NC-202™ as this might damage the surface.

5.1.2 Cassette fixture

When cleaning the cassette fixture, take great care to avoid introducing any liquid or dust into the NucleoCounter® NC-202™. Any liquid entering the interior of the NucleoCounter® NC-202™ can damage the optical parts and compromise the quality of the cell count.

The black surface of the cassette fixture is anodized aluminum and can therefore be wiped off with a clean, dry, and dust free cloth, reducing fiber contamination of the cassette fixture.

5.1.3 Contamination of the optics

Foreign objects attached to the optical component can influence the collected image and may be visible as faint objects in the image.

Presence of a contaminant (e.g. dust particles) will normally not influence the counting of cells. The NucleoCounter® NC-202™ will distinguish between cells and contaminants.

If contamination is visible in every image acquired, it indicates that the optical parts are compromised. Compressed air (clean and dry) can be used to remove dust particles from the optical system by blowing air into the cassettes fixture. Do not use compressed air from a single use-can, since these contain chemicals that can reduce optical performance.

ChemoMetec's support should be contacted if the contaminant cannot be removed with compressed air.

5.1.4 Decontamination

If a complete decontamination of the NucleoCounter® NC-202™ is required, please contact ChemoMetec before taking action.

6 Troubleshooting for NucleoCounter® NC-202™

For support and troubleshooting regarding the NucleoCounter® NC-202™, please contact ChemoMetec at support@chemometec.com

Please create support files in NC-View™ via Help → Create support files, before contacting ChemoMetec for support.

6.1 Firmware and Software Version

The NucleoCounter® NC-202™ firmware version and NC-View™ software version is found by connecting the instrument to NC-View™ and navigating through Help → About.

6.2 Power-on Failure

If the NucleoCounter® NC-202™ does not turn on, please verify that the power supply is connected to the NucleoCounter® NC-202™ and a working power outlet.

If the NucleoCounter® NC-202™ still does not turn on, inspect and/or replace the fuse as described below. The fuse holder is located at the back of the instrument above the power socket (Figure 9).



Figure 9: Location and removal of the fuse

Disconnect the power supply from the NucleoCounter®. Then remove the fuse holder using a screwdriver as indicated in Figure 9 (turn counterclockwise). Inspect the fuse. If it needs replacement use one as described by ChemoMetec.

If the NucleoCounter® NC-202™ does not turn on after replacing the fuse, or if the fuse was not blown, please contact ChemoMetec or your local distributor for further instructions.

7 Technical Specifications

7.1 NucleoCounter® NC-202™

Optics	Lens with ×2.1 magnification, 2/3" CMOS
Sample device	Via2-Cassette™
Excitation (nm)	2 LED light sources with peak wavelengths at 365 nm and 505 nm
Emission (nm)	A single dual-band emission filter: 410-460 nm and 540-650 nm
Sample consumption	Approximately 60 µl
Analyzed volume	1.35 µl (individually volume-calibrated Via2-Cassette™)
Counting Range	5×10^4 - 1×10^7 cells/ml
Cell types	Mammalian cells
PC Platform	Microsoft Windows 10. See full details of PC specifications in the NC-View™ Software User Guide (doc. No. 991-2022)
Analysis time	25 - 40 seconds, depending on computer
Weight and Dimensions	4.9 kg, H 26 cm, W 38 cm, D 22 cm
Supply Voltage	24 VDC (100-240 V~ 50-60 Hz)
Power Consumption	7/20 W (Ready mode/peak)
Operation and storage conditions	Maximum relative humidity 80 percent for temperatures up to 31°C decreasing linearly to 65 percent relative humidity at maximum 35°C; minimum temperature 15°C

7.2 Sample Media

Storage and stability	Refer to package insert for the appropriate sample media type
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7.3 EU Standards

The NucleoCounter® NC-202™ complies with EU standards as follow:

Directives	Electromagnetic Compatibility (2014/30/EU) EMC Low Voltage Directive (2014/35/EC) LVD Machinery Directive (2006/42/EC) MD
Standards	EN 61326-1:2013 Electrical equipment for laboratory use
EMC:	EN 61000-3-2: 2014 Limits for harmonic current emissions EN 61000-3-3: 1995 +A1 +A2: 2013 Limitation of voltage changes, voltage fluctuations and flicker

Standards
LVD: EN 61010-1:2010 Safety requirements for electrical equipment for measurement, control, and laboratory use

Standards
MD: EN 12100-1: 2003 Safety of machinery; Basic concepts, general principles for design — Part 1
EN 12100-2: 2003 Safety of machinery; Basic concepts, general principles for design — Part 2
EN ISO 14121-1:2007 Safety of machinery; risk assessment

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: i) this device may not cause harmful interference; and ii) this device must accept any interference received, including interference that may cause undesired operation.

8 Equipment and Accessories

An updated list of equipment and accessories for the NucleoCounter® NC-202™ are available from www.chemometec.com.

9 Other Documentation

The table below shows a list of documents relevant for NucleoCounter® NC-202™ operations. These documents can be downloaded from www.chemometec.com.

Document	Document Type	Document number
Quick User Guide	Brochure	991-2023
Software User Guide	User Guide	991-2022
Security Mode User Guide	User Guide	991-2021
NC-202™ IQ/OQ	Application Note	994-2022
Count and Viability	Application Note	994-2026

10 General Disclaimer

The information contained herein is to the best of our knowledge accurate and complete. However, cell species and cell environments may vary in property. Therefore, systematic and/or random deviation between estimates obtained by the NucleoCounter® and other cell counting methods may occur. As such, nothing contained or stated herein including results obtained from use of NucleoCounter® NC-202™ or Via2-Cassette™ shall be construed to imply any warranty or guarantee. ChemoMetec and affiliated companies shall not be held liable for damages and customers shall indemnify ChemoMetec and affiliated companies against liability resulting from use of potentially inaccurate data generated by the NucleoCounter®. It is recommended that all results obtained using the NucleoCounter® NC-202™ are validated against appropriate reference methods and/or traditional laboratory methods at regular intervals.

Appendix A: Description of changes from latest revision

This chapter describes changes from latest version of this user guide.

A.1 New:

- N/A

A.1 Changes:

- Updated information on Windows operating system requirements.

A.2 Removed:

- N/A

Appendix B: WEEE Directive Information in More EU Languages

United Kingdom

Correct Disposal of This Product (Waste Electrical & Electronic Equipment) - Europe only



This marking shown on the product or its literature, indicates that it should not be disposed of together with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

Sweden

Korrekt avfallshantering av produkten (elektriska och elektroniska produkter) - Endast för Europa



Denna markering på produkten och i manualen anger att den inte bör sorteras tillsammans med annat hushållsavfall när dess livstid är över. Till förebyggande av skada på miljö och hälsa bör produkten hanteras separat för ändamålsenlig återvinning av dess beståndsdelar.

Företagsanvändare bör kontakta leverantören samt verifiera angivna villkor i köpekontraktet. Produkten bör inte hanteras tillsammans med annat kommersiellt avfall.

Slovenia

Ustrezno odstranjevanje tega izdelka (odpadna električna in elektronska oprema) - Samo Evropa



Oznaka na izdelku ali spremljevalni dokumentaciji pomeni, da ga na koncu uporabne dobe ne smemo odstranjevati skupaj z drugimi gospodinjskimi odpadki. Da bi preprečili morebitno tveganje za okolje ali zdravje človeka zaradi nenadzorovanega odstranjevanja odpadkov, izdelek ločite od drugih vrst odpadkov in ga odgovorno reciklirajte ter tako spodbudite trajnostno ponovno uporabo materialnih virov.

Podjetja naj pokličejo dobavitelja in preverijo pogoje nabavne pogodbe. Tega izdelka pri odstranjevanju ne smete mešati z drugimi gospodarskimi odpadki.

Slovakia

Správna likvidácia tohoto výrobku (Elektrotechnický a elektronický odpad) - Platí len pre Európu



Toto označenie na výrobku alebo v sprievodnej brožúre hovorí, že po skončení jeho životnosti by nemal byť likvidovaný s ostatným odpadom. Prípadnému poškodeniu životného prostredia alebo ľudského zdravia môžete predísť tým, že budete takéto typy výrobkov oddeľovať od ostatného odpadu a vrátite ich na recykláciu.

Priemyselní používatelia by mali kontaktovať svojho dodávateľa a overiť si podmienky kúpnej zmluvy. Tento výrobok by nemal byť likvidovaný spolu s ostatným priemyselným odpadom.

Portugal

Eliminação Correcta Deste Produto (Resíduo de Equipamentos Eléctricos e Electrónicos) - Apenas na Europa



Esta marca, apresentada no produto ou na sua literatura indica que ele não deverá ser eliminado juntamente com os resíduos domésticos indiferenciados no final do seu período de vida útil. Para impedir danos ao ambiente e à saúde humana causados pela eliminação incontrolada de resíduos deverá separar este equipamento de outros tipos de resíduos e reciclá-lo de forma responsável, para promover uma reutilização sustentável dos recursos materiais.

Os utilizadores profissionais deverão contactar o seu fornecedor e consultar os termos e condições do contrato de compra. Este produto não deverá ser misturado com outros resíduos comerciais para eliminação.

Poland

Prawidłowe usuwanie produktu (zużyty sprzęt elektryczny i elektroniczny) - Tylko obszar Europy



Oznaczenie umieszczone na produkcie lub w odnoszących się do niego tekstach wskazuje, że produktu po upływie okresu użytkowania nie należy usuwać z innymi odpadami pochodzącymi z gospodarstw domowych. Aby uniknąć szkodliwego wpływu na środowisko naturalne i zdrowie ludzi wskutek niekontrolowanego usuwania odpadów, prosimy o oddzielenie produktu od innego typu odpadów oraz odpowiedzialny recykling w celu promowania ponownego użycia zasobów materialnych jako stałej praktyki.

Użytkownicy w firmach powinni skontaktować się ze swoim dostawcą i sprawdzić warunki umowy zakupu. Produktu nie należy usuwać razem z innymi odpadami komercyjnymi.

Norway

**Korrekt avhending av dette produkt
(Avfall elektrisk og elektronisk utstyr) - Kun Europa**



Denne merkingen som vises på produktet eller dens dokumentasjon, indikerer at den ikke skal kastes sammen med annet husholdningsavfall ved slutten av sin levetid. For å hindre mulig skade på miljøet eller menneskelig helse fra ukontrollert avfallsavhending, vennligst atskill dette fra andre typer avfall og resirkuler det ansvarlig for å fremme bærekraftig gjenbruk av materielle ressurser.

Forretningsbrukere bør kontakte sin leverandør og undersøke vilkårene i kjøpekontrakten. Dette produktet skal ikke blandes med annet kommersielt avfall som skal kastes.

Netherlands

**Correcte verwijdering van dit product
(elektrische & elektronische afvalapparatuur) - Alleen Europa**



Dit merkteken op het product of het bijbehorende informatiemateriaal duidt erop dat het niet met ander huishoudelijk afval verwijderd moet worden aan het einde van zijn gebruiksduur. Om mogelijke schade aan het milieu of de menselijke gezondheid door ongecontroleerde afvalverwijdering te voorkomen, moet u dit product van andere soorten afval scheiden en op een verantwoorde manier recyclen, zodat het duurzame hergebruik van materiaalbronnen wordt bevordert.

Zakelijke gebruikers moeten contact opnemen met hun leverancier en de algemene voorwaarden van de koopovereenkomsten nalezen. Dit product moet niet worden gemengd met ander bedrijfsafval voor verwijdering.

Latvia

**Izstrādājuma pareiza likvidēšana
(nolietotas elektriskās un elektroniskās ierīces) - Tikai Eiropā**



Uz izstrādājuma vai tam pievienotajās instrukcijās dotais marķējums norāda, ka to nedrīkst likvidēt kopā ar citiem sadzīves atkritumiem pēc tā ekspluatācijas laika. Lai novērstu viedei un cilvēku veselībai iespējamo kaitējumu, kas ir saistīts ar nekontrolējamu atkritumu likvidēšanu, tas jānošķir no citiem atkritumiem un jāpārstrādā, lai sekmētu materiālo resursu atbildīgu atkārtotu lietošanu.

Rūpnieciskajiem lietotājiem jāsazinās ar piegādātāju un jāpārbauda pirkuma līguma nosacījumi. Šo izstrādājumu nedrīkst sajaukt ar citiem likvidējamiem rūpnieciskajiem atkritumiem.

Lithuania

**Tinkamas produkto atliekų tvarkymas
(atitarnavusi elektros ir elektronikos įranga) - Tik Europai**



Šis ženklas, pateikiamas ant produkto ar jo dokumentacijoje, nurodo, kad pasibaigus produkto tarnavimo laikui, jo negalima išmesti kartu su kitomis buitinėmis atliekomis. Kad būtų išvengta galimos nekontroliuojamo atliekų išmetimo žalos aplinkai arba žmonių sveikatai, ir siekiant skatinti aplinką tausojantį antrinių žaliavų panaudojimą, pašom atskirti jį nuo kitų rūšių atliekų ir atiduoti perdirbti.

Verslo vartotojai turėtų kreiptis į savo tiekėją ir peržiūrėti pirkimo sutarties sąlygas. Šis produkto tvarkant atliekas negali būti sumaišytas su kitomis atliekomis.

Italy

**Corretto smaltimento del prodotto
(rifiuti elettrici ed elettronici) - Solo Europa**



Il marchio riportato sul prodotto o sulla sua documentazione indica che il prodotto non deve essere smaltito con altri rifiuti domestici al termine del ciclo di vita. Per evitare eventuali danni all'ambiente o alla salute causati dall'inopportuno smaltimento dei rifiuti, si invita l'utente a separare questo prodotto da altri tipi di rifiuti e di riciclarlo in maniera responsabile per favorire il riutilizzo sostenibile delle risorse materiali.

Gli utenti aziendali sono invitati a contattare il proprio fornitore e verificare i termini e le condizioni del contratto di acquisto. Questo prodotto non deve essere smaltito unitamente ad altri rifiuti commerciali.

Hungary

**A termék megfelel leadása
(Elektromos és elektronikus készülékek hulladékkezelése) - Kizárólag Európa**



A terméken vagy a hozzá tartozó dokumentáción szerepl jelzés arra utal, hogy hasznos élettartama végén a terméket nem szabad háztartási hulladékkal együtt kidobni. Annak érdekében, hogy megel zhet legyen a szabálytalan hulladékleadás által okozott környezet- és egészségkárosodás, különítse ezt el a többi hulladéktól, és felel sségteljesen gondoskodjon a hulladék leadásáról, a hulladékanyagok fenntartható szint újrafelhasználása céljából.

Az üzleti felhasználók lépjenek kapcsolatba a forgalmazóval, és vizsgálják meg az adásvételi szerz dés feltételeit. A terméket nem szabad leadni kereskedelmi forgalomból származó egyéb hulladékkal együtt.

France

**Comment éliminer ce produit
(déchets d'équipements électriques et électroniques) - Europe uniquement**



Ce symbole sur le produit ou sa documentation indique qu'il ne doit pas être éliminé en fin de vie avec les autres déchets ménagers. L'élimination incontrôlée des déchets pouvant porter préjudice à l'environnement ou à la santé humaine, veuillez le séparer des autres types de déchets et le recycler de façon responsable. Vous favoriserez ainsi la réutilisation durable des ressources matérielles.

Les entreprises sont invitées à contacter leurs fournisseurs et à consulter les conditions de leur contrat de vente. Ce produit ne doit pas être éliminé avec les autres déchets commerciaux.

Finland

**Tämän tuotteen turvallinen hävittäminen
(elektroniikka ja sähkölaitteet) - Vain Eurooppa**

Oheinen merkintä tuotteessa tai tuotteen oheismateriaalissa merkitsee, että tätä tuotetta ei tule hävittää kotitalousjätteen mukana sen elinkaaren päätyttyä. Hallitsemattomasta jätteenkäsittelystä ympäristölle ja kanssaihminen terveydelle aiheutuvien vahinkojen välttämiseksi tuote tulee käsitellä muista jätteistä erillään. Jäte on hyvä kierrättää raaka-aineiksi kestävän ympäristökehityksen takia.

Yrityskäyttäjien tulisi ottaa yhteyttä tavarantoimittajaan ja selvittää hankintasopimuksen ehdot. Tätä tuotetta ei tule hävittää muun kaupallisen jätteen seassa.

Estonia

**Õige viis toote kasutusest kõrvaldamiseks
(elektriliste ja elektrooniliste seadmete jäätmed) - Ainult Euroopa**

Selline tähistus tootel või selle dokumentidel näitab, et toodet ei tohi kasutusaja lõppemisel kõrvaldada koos muude olmejäätmetega. Selleks, et vältida jäätmete kontrollimatu kõrvaldamisega seotud võimaliku kahju tekitamist keskkonnale või inimeste tervisele ning edendada materiaalsete vahendite säästvat taaskasutust, eraldage toode muudest jäätmetest ja suunake taasringluse.

Firmad peaksid võtma ühendust tarnijaga ning kontrollima ostulepingu tingimusi ja sätteid. Toodet ei tohi panna muude hävitamiseks mõeldud kaubandusjäätmete hulka.

Spain

**Eliminación correcta de este producto
(material eléctrico y electrónico de descarte) - Europa solamente**

La presencia de esta marca en el producto o en el material informativo que lo acompaña, indica que al finalizar su vida útil no deberá eliminarse junto con otros residuos domésticos. Para evitar los posibles daños al medio ambiente o a la salud humana que representa la eliminación incontrolada de residuos, separe este producto de otros tipos de residuos y reciclelo correctamente para promover la reutilización sostenible de recursos materiales.

Los usuarios comerciales pueden contactar con su proveedor y consultar las condiciones del contrato de compra. Este producto no debe eliminarse mezclado con otros residuos comerciales.

Greece

**Σωστή Διάθεση αυτού του Προϊόντος
(Απορρίμματα Ηλεκτρικού & Ηλεκτρονικού Εξοπλισμού) - Μόνον για την Ευρώπη**

Τα σήματα που εμφανίζονται επάνω στο προϊόν ή στα εγχειρίδια που το συνοδεύουν, υποδεικνύουν ότι δεν θα πρέπει να ρίπτεται μαζί με τα υπόλοιπα οικιακά απορρίμματα μετά το τέλος του κύκλου ζωής του. Προκειμένου να αποφευχθούν ενδεχόμενες βλαβερές συνέπειες στο περιβάλλον ή την υγεία εξαιτίας της ανεξέλεγκτης διάθεσης απορριμμάτων, σας παρακαλούμε να το διαχωρίσετε από άλλους τύπους απορριμμάτων και να το ανακυκλώσετε, ώστε να βοηθήσετε στην βιώσιμη επαναχρησιμοποίηση των υλικών πόρων.

Οι επιχειρήσεις-χρήστες θα πρέπει να έλθουν σε επαφή με τον προμηθευτή τους και να ελέγξουν τους όρους και τις προϋποθέσεις του συμβολαίου πώλησης. Το προϊόν αυτό δεν θα πρέπει να αναμειγνύεται με άλλα συνηθισμένα απορρίμματα προς διάθεση.

Germany

**Korrekte Entsorgung dieses Produkts
(Elektromüll) - Nur Europa**

Anzuwenden in den Ländern der Europäischen Union und anderen europäischen Ländern mit einem separaten Sammelsystem) Die Kennzeichnung auf dem Produkt bzw. auf der dazugehörigen Literatur gibt an, dass es nach seiner Lebensdauer nicht zusammen mit dem normalen Haushaltsmüll entsorgt werden darf. Entsorgen Sie dieses Gerät bitte getrennt von anderen Abfällen, um der Umwelt bzw. der menschlichen Gesundheit nicht durch unkontrollierte Müllbeseitigung zu schaden. Recyceln Sie das Gerät, um die nachhaltige Wiederverwertung von stofflichen Ressourcen zu fördern.

Gewerbliche Nutzer sollten sich an Ihren Lieferanten wenden und die Bedingungen des Verkaufsvertrags konsultieren. Dieses Produkt darf nicht zusammen mit anderem Gewerbemüll entsorgt werden.

Denmark

**Korrekt affaldsbortskaffelse af dette produkt
(elektrisk & elektronisk udstyr) - Kun Europa**

Mærket på dette produkt eller i den medfølgende dokumentation betyder, at produktet ikke må bortskaffes sammen med almindeligt husholdningsaffald efter endt levetid. For at undgå skadelige miljø- eller sundhedspåvirkninger på grund af ukontrolleret affaldsbortskaffelse skal dette produkt bortskaffes særskilt fra andet affald og indleveres behørigt til fremme for bæredygtig materialgenvinding.

Erhvervsbrugere bedes kontakte leverandøren og læse betingelserne og vilkårene i købekontrakten. Dette produkt bør ikke bortskaffes sammen med andet erhvervsaffald.

Czechoslovakia

**Správná likvidace tohoto produktu
(Zničení elektrického a elektronického zařízení) - Pouze Evropa**

Tato značka zobrazená na produktu nebo v dokumentaci znamená, že by neměl být používán s jinými domácími zařízeními po skončení svého funkčního období. Aby se zabránilo možnému znečištění životního prostředí nebo zranění člověka díky nekontrolovanému zničení, oddělte je prosíme od dalších typů odpadů a recyklujte je zodpovědně k podpoře opětovného využití hmotných zdrojů.

Obchodníci by měli kontaktovat své dodavatele a zkontrolovat všechny podmínky koupě. Tento výrobek by se neměl míchat s jinými komerčními produkty, určenými k likvidaci.