

PELCO BioWave® Pro +

Trusted Technology, Enhanced Efficiency



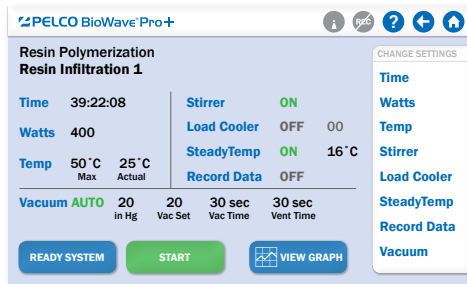
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Microscopy Products for Science and Industry

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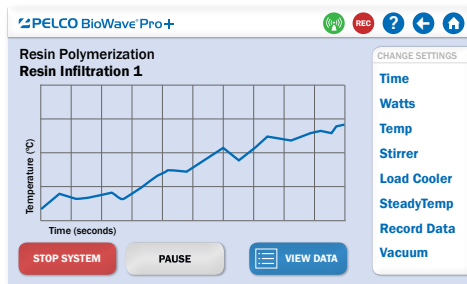
Redesigned with the User in Mind

PELCO BioWave® Pro+ features an easy-to-use touchscreen interface and an intuitive app for data and protocol transfer.



User-Friendly Run Screens

Intuitive functions in a simple, consistent format offer all setting controls within one screen.



Live Run-Time Graph

Quick and convenient view of the current protocol in real-time provides an active view of run progress.



Simplified Protocol Selection

Icon-driven interface allows users one-touch access to pre-loaded and customized protocols.

Report Protocol Manager App

Easily transfer data between the PELCO BioWave® Pro+ and laboratory computers; create and load custom protocols.



The design of the PELCO BioWave® Pro+ introduces features that improve efficiency and streamline functionality. It is built on trusted technology and adds enhancements for efficient laboratory processing.

The PELCO BioWave® Pro+ offers up-to-date technology to meet the current needs of the modern laboratory. With proven protocols for diagnostic and research TEM processing, immunofluorescence, decalcification, paraffin processing, serial blockface electron microscopy (SBEM) and FIB-SEM, the PELCO BioWave® Pro+ has become an essential part of any scientific laboratory. The laboratory can save on time and reagents while providing consistent and reliable results in every modality.

The new touchscreen interface improves usability for multiple functions. Clickable text navigation allows for simple and clear screen interaction. Live run-time graphs provide an easily accessible view of the current protocol in real-time. The simplified

protocol selection screen allows one-touch access to loaded and custom protocols.

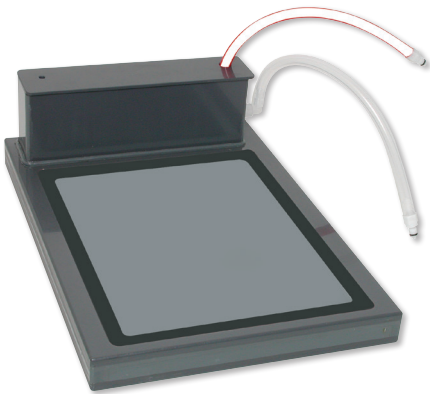
The improved design of the PELCO BioWave® Pro+ integrates into many laboratory environments. The data recording feature meets clinical requirements on sample processing. This same feature is a valuable tool in the research realm by providing a consistent record of any changes to a protocol, required when optimizing and validating any procedure. The live run-time graph is handy in any laboratory allowing personnel to step away from the instrument and maintain visibility of the process.

The PELCO BioWave® Pro+ is a complete system with tools and accessories that enable any lab to be efficient and reliable in sample preparation.



Built on Trusted Technology

Designed using over 25 years of proven experience in microwave tissue processing, the PELCO BioWave® Pro+ improves electron microscopy processing to be 95% faster than traditional bench processing.



Unmatched Control

The PELCO BioWave® Pro+ offers a unique and unparalleled level of control over microwave processes for reliable and reproducible results. By being designed to properly use microwave energy, the PELCO BioWave® Pro+ provides the tools for control of the environment at the specimen level and the internal chamber.



Variable Wattage & PELCO ColdSpot® Technology

Variable wattage provides an essential avenue of control for the PELCO BioWave® Pro+. As compared to “pulsed power” microwaves, variable wattage allows the user to limit the exposure of any specimen to the minimum energy necessary to process the specimen. The patented PELCO ColdSpot® technology alleviates inconsistent wattage delivery in the microwave cavity, guarding the specimens from excessive microwave energy.



Versatility & Reproducibility

The versatility of the PELCO BioWave® Pro+ is demonstrated through the diverse Application Kits available for various laboratory procedures. A diverse and well-thought out set of accessories offers a wide range of applications with just one instrument. Accessories designed specifically for each microwave application provide for easy reproducibility.



Internal Load Cooler & Vacuum

The PELCO BioWave® Pro+ is designed as a complete system. For control of the internal environment, the PELCO ColdSpot® technology is coupled with an internal Load Cooler and requires no outside instrumentation. By providing a built-in vacuum pump, no external connections or equipment are necessary.

PELCO BioWave® Pro+ Specifications

Dimensions	533mm x 514mm x 546mm (21.75" W x 20.25" D x 21.5" H)
Weight	37kg (83lb)
Microwave Power Range	Continuous power from 100 - 750 watts
Microwave Frequency	2.45 Ghz
User Interface	7" Touchscreen
Temperature Probe	±1°C
Magnetic Stirrer	Integrated, 0 - 3000rpm speed
Exhaust	110 cfm capacity
Vacuum System	20" Hg, 3 modes
Certification	ETL/CE
Power	36700: 120V, 15amp, 60Hz dedicated circuit
	36700-230: 230V, 10amp, 50Hz dedicated circuit



PELCO BioWave® Pro+ Report Protocol Manager App

The Report/Protocol Manager (RPM) app is the bridge from the laboratory computer to the PELCO BioWave® Pro+ that facilitates custom protocol creation and data transfer and review. Features of the RPM provide a valuable tool in the core facility or multi-user environment by providing options for data manipulation.

Individual users are able to create protocols and choose to upload and store them on the PELCO BioWave® Pro+ in a user-created folder or store them on a personal USB key. The PELCO BioWave® Pro+ is able to run any protocol directly from the USB key once inserted into the instrument.

Any recorded data is also able to be stored on the instrument in an individual

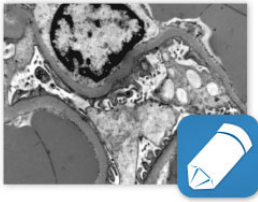
folder or loaded onto the USB key. For the data file to be reviewed, it must be accessed through the RPM app.

The PELCO BioWave® Pro+ is equipped with 2 USB ports for convenient data transfer of protocols and recorded run information.

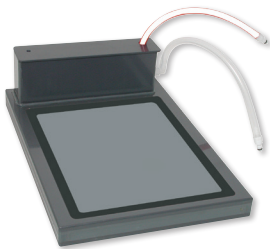
Minimum System Requirements

- 2.0 GB Processor / 2 GB RAM
- 100 GB free disk space
- Windows Version 7 or higher
- For initial installation, an internet connection is required
- USB 2.0 port (for loading software application and transmitting protocols)

Electron Microscopy Application Kit



This kit provides a full range of accessories designed for efficient EM processing in the microwave. The complete process from fixation to resin can be completed in less than 2 hours.



36116-10

The PELCO ColdSpot® Pro

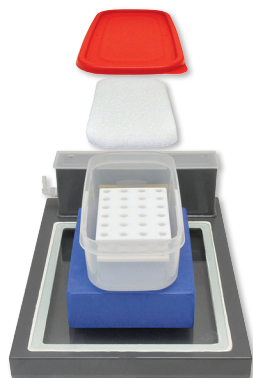
The PELCO ColdSpot® Pro is designed for control of the environment inside the PELCO BioWave® Pro and Pro+ microwave systems. The water within the PELCO ColdSpot® Pro circulates through the internal Load Cooler within the PELCO BioWave® Pro+ system or through the external PELCO SteadyTemp™ Pro chiller. This provides consistent temperature control at the specimen level as well as eliminating the standing wave pattern within the microwave cavity.



3536

PELCO® EM Pro Microwave Vacuum Chamber

The PELCO® EM Pro Vacuum Chamber is made from microwave-transparent polypropylene and designed to reach a maximum vacuum of 20" of Hg. The PELCO® EM Pro Vacuum Chamber works in conjunction with the internal vacuum pump in the PELCO BioWave® Pro and Pro+ microwave systems. The vacuum chamber can run a continuous vacuum or utilize a vacuum cycle, depending on the application and need of the user.



36133, 36133-20,
36131-2

Microwave Polymerization System

The Microwave Polymerization System contains all the components necessary for polymerization of resin within the BioWave® Pro and Pro+ microwave systems. The Microwave Polymerization System is compatible with epoxy and LR White resins.



36157

PELCO Prep-Eze™

The PELCO Prep-Eze™ specimen holders are designed for microwave processing. The sturdy PTFE design is offered in 6-well and 12-well configurations. Each kit contains a specimen holder, ID mat for each design, and a set of polypropylene petri dishes.

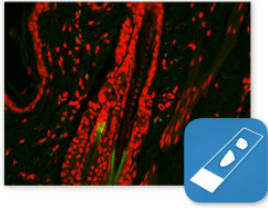


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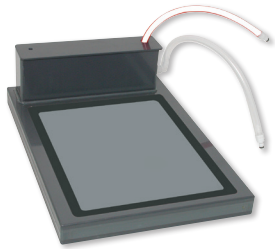
Capsule Preparation Station

The Capsule Preparation Station is designed for the size 00 embedding capsules as an aid for filling and orientation for polymerization. The prep station is made from polypropylene that allows for easy resin clean-up.

Immunolabeling/Confocal Microscopy Application Kit



The versatility of this kit equips the user for multiple types of staining protocols. All accessories are compatible with immunohistochemistry and immunofluorescence stains and reagents.



36116-10

The PELCO ColdSpot® Pro

The PELCO ColdSpot® Pro is designed for control of the environment inside the PELCO BioWave® Pro and Pro+ microwave systems. The water within the PELCO ColdSpot® Pro circulates through the internal Load Cooler within the BioWave® system or through the external PELCO SteadyTemp™ Pro chiller. This provides consistent temperature control at the specimen level as well as eliminating the standing wave pattern within the microwave cavity.



3536

PELCO® EM Pro Microwave Vacuum Chamber

The PELCO® EM Pro Vacuum Chamber is made from microwave-transparent polypropylene and designed to reach a maximum vacuum of 20" of Hg. The PELCO® EM Pro Vacuum Chamber works in conjunction with the internal vacuum pump in the PELCO BioWave® Pro and Pro+ microwave systems. The vacuum chamber can run a continuous vacuum or utilize a vacuum cycle, depending on the application and need of the user.



36105

Sequenza Slide Rack and Coverplate System

The Sequenza™ Slide Rack, holds 10 glass slides and Coverplates™, in a system designed for the immunolabeling of tissue on glass slides. The system is uniquely suited for microwave-assisted applications as well as standard bench-top use. The Rack and Coverplate System combination forms a capillary gap between the slide and the plate. Reagent volumes are greatly reduced using this versatile system. A reagent reservoir forms in the uppermost part of the plastic Coverplate™ allowing for easy dispensing of reagent into the capillary gap.



36107



36168

PELCO Prep-Eze™ Rectangular Wellplate Inserts

The rectangular polypropylene Wellplate Inserts have 6, 12, or 24 wells and will fit into the Corning Costar® Tissue Culture Plates of 6, 12, or 24 Wellplate design. A 420µm opening, polypropylene mesh is at the bottom of each of the insert wells.

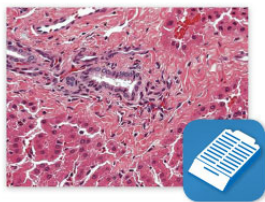


36170



36172

Paraffin Tissue Processing Application Kit



All the accessories needed for complete paraffin processing are included in this kit. Vacuum-assisted infiltration, along with microwave energy, enhances any standard protocol.



36116-20

The PELCO ColdSpot® Plus

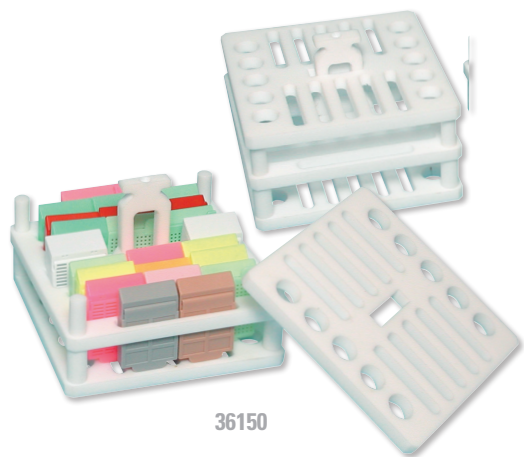
The PELCO ColdSpot® Plus is designed for use in the PELCO BioWave® Pro and Pro+ to allow for applications requiring higher temperatures while maintaining consistent microwave energy. The all-welded, solvent resistant polypropylene can withstand temperatures up to 100°C.



36160

PELCO TissueVac® Histology Vacuum Accessory

The PELCO TissueVac® is engineered specifically for use with the 58 cassette holder and utilizes an integrated temperature probe for consistent monitoring. A paraffin heating tile is included as a heat receptor for optimal infiltration.



36150

PELCO HistoWave® Cassette System

The PELCO HistoWave® Cassette System consists of a tank with a cassette rack for 26 standard cassettes for processing. The system allows for simple solution changes during processing and the ability for use in the PELCO TissueVac® chamber.

EDTA Decalcification/Formalin Fixation Application Kit



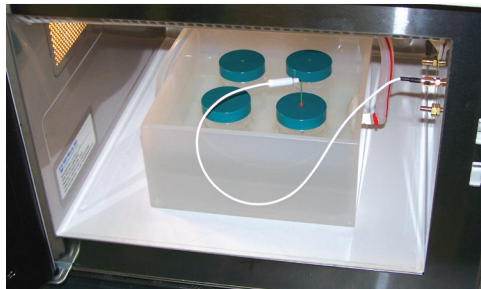
The unique components of this kit provide a true advantage to the decalcification process. Microwave technology provides notable savings of reagents and time, offsetting decalcification's most significant limitations.



36200

DFR Insert

The DFR Insert is a uniquely designed system for decalcification or formalin fixation within the PELCO BioWave® Pro and Pro+. The DFR Insert allows for complete circulation of fixative or EDTA decalcification solution to all specimens while providing consistent exposure to controlled microwave energy. A port in the lid provides access for the temperature probe for temperature monitoring. The DFR Insert system is used in conjunction with the PELCO SteadyTemp™ Pro Digital Chiller.



36124

Microwave Tissue Jars

The Microwave Tissue Jars are an economical alternative for EDTA decalcification. The jars allow for less reagent use while maintaining temperature regulation with circulating water through the DFR Insert. The jars are equipped with a port for the temperature probe for temperature monitoring. The Microwave Tissue Jars work within the DFR Insert system utilizing the PELCO SteadyTemp™ Pro Digital Chiller.



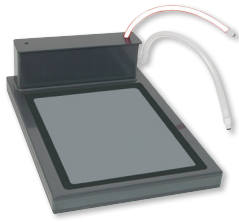
50062

PELCO SteadyTemp™ Pro Digital Chiller

The PELCO SteadyTemp™ Pro Digital Chiller provides precise, fully automatic temperature control for both decalcification and fixation applications within the PELCO BioWave® Pro and Pro+ microwave systems. The specially designed PELCO SteadyTemp™ Pro connects directly to the microwave and is monitored and controlled from the PELCO BioWave® Pro and Pro+ touchscreens.

Equipment, Accessories & Consumables

for the PELCO BioWave® Pro+ Microwave Processing System



36116-10

PELCO ColdSpot® Pro

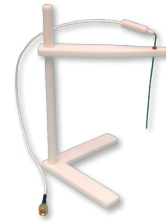
Designed as a temperature controlled surface and will enhance most tissue processing steps.



36116-20

PELCO ColdSpot® Plus

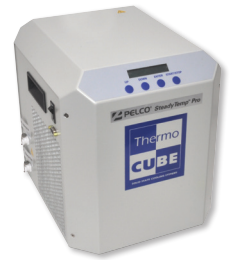
Designed for microwave processing techniques that benefit from retained heat and higher solution temperatures.



36145-T, 36138

Temperature Probe

Supplied with the PELCO BioWave® Pro+ and available as a replacement probe for all previous PELCO® microwave systems.



50062

PELCO SteadyTemp™ Pro Solid State Digital Chiller

Provides precise fully automatic temperature control for a variety of applications.



36135

Polypropylene Petri Dishes

Suitable for use in the Microwave Systems and conveniently hold the PELCO Prep-Eze™ Specimen Holders.



36157-1, 36158-1

PELCO Prep-Eze™ Specimen Holders

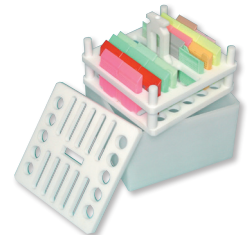
6 or 12 well holders take specimen batches from fixation through resin infiltration. Fit in the 36135 petri dishes.



36134

Microcentrifuge Tube Holder and Tubes

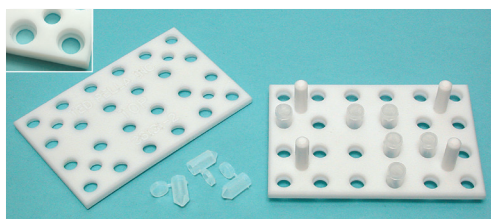
Firmly holds microcentrifuge tubes in water bath or on PELCO ColdSpot® Pro for processing.



36150

PELCO Histowave® Cassette System

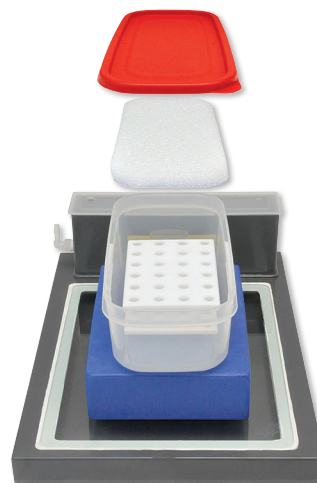
Can be used as a stand alone system or in the PELCO TissueVac™.



36131-2

PELCO® Microwave Capsule Holder with Lid & Microwave Flat Bottom Capsules

Flat Bottom Capsules or standard BEEM® Capsules. Firmly holds capsules for resin polymerization. "Stops" on the legs to keep the capsule base level during loading.



36133, 36133-20, 36131-2

Microwave Polymerization System & Stand

This system is used with the #36131-2 Capsule Holders. Water in the tray acts to equilibrate the temperature during curing of the resin.



36169, 36171, 36173

Individual Wells

Great for processing individual specimens or keeping specimens separate from others.



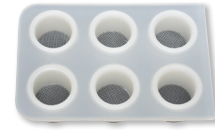
36107



36105

Sequenza™ Slide Rack & Coverplate™ Assemblies

Holds slides and Coverplate™ Assemblies, designed for immunolabeling of sections on slides.



36168



36172



36170

PELCO Prep-Eze™ Wellplate Inserts

The rectangular polypropylene Wellplate Inserts have 6, 12, or 24 wells and will fit into the Corning Costar® Tissue Culture Plates.



36160



36160-3

PELCO TissueVac® Histology Vacuum Accessory & Cassette Holder

Vacuum chamber and cassette holder for microwave processing. Container and lid are made from microwave-transparent polypropylene. The integrated temperature probe allows the use of temperature restriction control with vacuum.



3536

PELCO® EM Pro Vacuum Chamber

Sample preparation for improved fixation and resin infiltration. Designed either to run a continuous vacuum during microwave processing or a vacuum cycle.



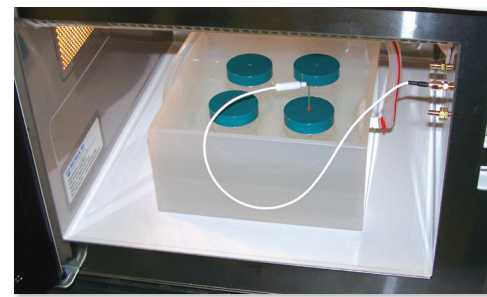
36200



36160-3

DFR Insert & PTFE Cassette Holder

Fixation or decalcification using standard cassettes. 36200 DFR Insert complete with Processing Container 36200-1, Lid 36200-2, DFR Safety Tray 36200-3 and Round PTFE Cassette Holder 36160-3.



36124

Microwave Tissue Jars for Decalcification

An economical alternative for EDTA decalcification. The jars allow for less reagent use while maintaining temperature regulation with circulating water through the DFR Insert.

PELCO BioWave® Pro +

Trusted Technology, Enhanced Efficiency

Here's what users are saying...



The BioWave® has enabled me to get back into the lab and process samples, since it only takes around 2 hours from first fixation of cells to resin polymerization, so I can squeeze this in between meetings. As well as being able to process faster, I have seen an improvement in preservation, especially in the cytoskeleton of cells grown on coverslips. We are now optimizing microwave processing for all our cell and tissue types, and training new users, for whom the system is simple and user-friendly.

Dr. Lucy Collinson, Head of Electron Microscopy, The Francis Crick Institute, London

The BioWave® Pro has been essential in the growing success of our electron microscopy lab. We provide fast turnaround time without compromising quality.

In the years prior to using the BioWave® Pro, the processing of cases took almost 72 hours and also required the use of a high volume of solutions, all of which is time consuming and costly. With the BioWave® Pro, we have been able to cut our processing time down to a fraction of that, 1 hour and 30 minutes at the most. Our use of solutions is also at a minimum and saves us not only money but it also lowers chances of human error because the processing of specimens is much more streamlined. The BioWave® Pro has allowed us to give the pathologists and researchers that use our services a next day turnaround time, something that is highly appreciated, especially for our clinical cases.

Daisy Ridings, Electron Microscopy Supervisor, Carolinas Health Care, North Carolina

The BioWave® has cut our time from 6+ hours over 2 days to about 1 hour in 1 day. We love our BioWave® so much we bought a SECOND one!! With the BioWave® we are able to do both pre and post embed labeling on the same tissue and have excellent preservation as well.

We have had the BioWave® for many years now and use it exclusively now to process tissue for electron microscopy and pre-embed immunohistochemical and immunocytochemical staining as well as post-fixation after rodent perfusions. It has been a tremendous tool in saving time in all of our procedures.

For fresh tissue, we are able to fix half a rodent brain for 90 minutes rather than overnight and have the preservation be sufficiently good for use in the electron microscope. For perfused brain tissue, 60 minutes, rather than overnight gives good preservation of structures. Immunocytochemical staining takes 50 minutes. Benchtop primary immunolabeling could take up to 4 hours... Routine electron microscopy tissue preparation, including OsO4, en bloc staining, dehydration and infiltration only takes 43 minutes.

Cindy Moore, Electron Microscopist, VA Medical Center, Oregon

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