

Prevention of endophthalmitis after intravitreal injections- Avoiding Complications of intravitreal injections

Operio mobile laminar air flow creates cleanroom conditions for intravitreal injections and cataract surgery. Operio generates on the instruments and in the operating field aseptic conditions that is up to 100 times higher than in a conventional operating room for eye surgery.

Operio mobile laminar air flow system is a very cost-effective system to obtain Cleanroom conditions for ophthalmic surgery without any construction work. Sterile air is an indispensable requirement for the smooth functioning of an ophthalmic operation theatre (OT). Unsterile air has been believed to be a major cause of outbreaks of post-surgical infections. Operio can be easily wheeled and quickly set up, turning any room into a cleanroom with sterile conditions like an ultramodern operating theatre. Operio is an ISO 5 class device; The Operio HEPA filters trap 99.97% of particulate of size 0.3 micron (μ). They achieve this by various mechanisms like direct impaction, sieving, interception and diffusion. Most microbes are in range of 0.5 to 5 μ in size. Operio provides unidirectional air flow towards OT table and instruments. The sterile air flow is directly directed to the instruments and the surgical field without any obstacles such as the surgical microscope or the surgical team and hence creates an extreme high level of asepsis which was so far hardly obtainable!



The sterile OP-Air Flow device Operio enables inexpensive aseptic conditions to be created for operations and intravitreal injections in eye surgery.

Operio works with high-purifying Hepa H 14 filters which purify the air in the operating room and on the instruments practically completely (99.995%) of bacteria and other microorganisms

Operio sterile Air Flow is perceived by the staff as very pleasant because it does not generate cold air.



Interested in free advice?
Scan the QR code and see
contact details

<https://www.normeditec.com>



Prevention of postoperative infections in ophthalmic surgery Operio sterile Laminar Air flow unit for Ophthalmic Operating Theatre eliminates over 99.9% of all bacteria's during surgery also Covid-19 and other microorganisms.

Postoperative endophthalmitis is typically caused by the perioperative introduction of microbial organisms during surgery. Operio sterile Air Flow: the device works with high-purifying Hepa H 14 filters which purify the air in the operating room and on the instruments practically completely (99.9%) of bacteria, viruses (also coronavirus SARS-CoV-2) and other microorganisms.

Eye surgery requires the greatest possible level of asepsis because the consequences of endophthalmitis are serious and often irreversible. Sterile air is an indispensable requirement for the smooth functioning of an ophthalmic operation theatre (OT). Unsterile air has been believed to be a major cause of outbreaks of post-surgical infections.

The mobility of the Operio devices and the affordable price makes it possible to upgrade existing and old operating theaters and intervention rooms quickly and inexpensively. Intravitreal injections, cataract surgeries and other ophthalmological surgeries can be performed under highly aseptic conditions that were previously only possible in a very expensive operating rooms.



Operio sterile Air Flow: the unit protects both operating field and instrument area.

Operio sterile Air Flow: the devices work with high-purifying Hepa H 14 filters which purify the air in the operating room and on the instruments practically completely (99.9%) of bacteria, viruses (also coronavirus SARS-CoV-2) and other microorganisms. With this principle, an extreme high level of antisepsis can be achieved in the operating theater and on the instruments, which was previously only possible in a very expensive and most modern operating rooms. **The device can be positioned in such a way that a "germ-free zone" is set up, which offers the greatest possible protection for both the surgical team and the patient.**

The devices filter 400 m3 of air per hour so that the microorganisms in the entire room can be reduced.



Areas of application: intravitreal injections, cataract surgeries, glaucoma surgeries, refractive surgery, laser surgery, etc. The devices are extremely efficient because they precisely protect the area of the surgical field and from bacteria and microorganisms without obstacles such as surgical microscope or O.R light. Furthermore, Operio can increase the personal protection of surgeons and operating room personnel during the Covid period.

Normeditec (**Nordic Medical Technology**) Germany Heilbronn Tel.: +49 (0) 7139/ 20 90 85 9
Fax: +49 (0) 7139/ 59 34 98 6 Email: info@normeditec.de www.normeditec.com
Italy Parma Tel +39 348 730 24 45 info@normeditec.com

<https://www.normeditec.com> (with Video)

Application



Traditional air flow ceilings only work very limited

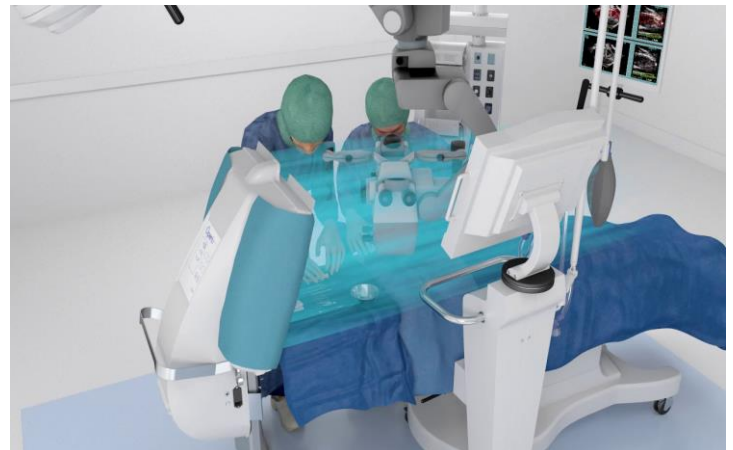


Operio: prepare the instruments protected



With Operio, the instruments and implants can always be prepared in the protected area with the sterile Air Flow device. Then the operating instrument table is simply moved to the operating area and the protection area is then expanded to include also the operating area. An ultra-clean airflow from the ceiling downward may convey airborne particles from the surgical team into the wound, thus increasing the risk of infection. The mobile clean air zone unit ensures that the surgical site and instruments kept nearby on trays remain sterile during the entire surgical procedure. (An individual emits and sheds about 10,000 skin cells per minute, and about 10% of those particles carry bacteria).

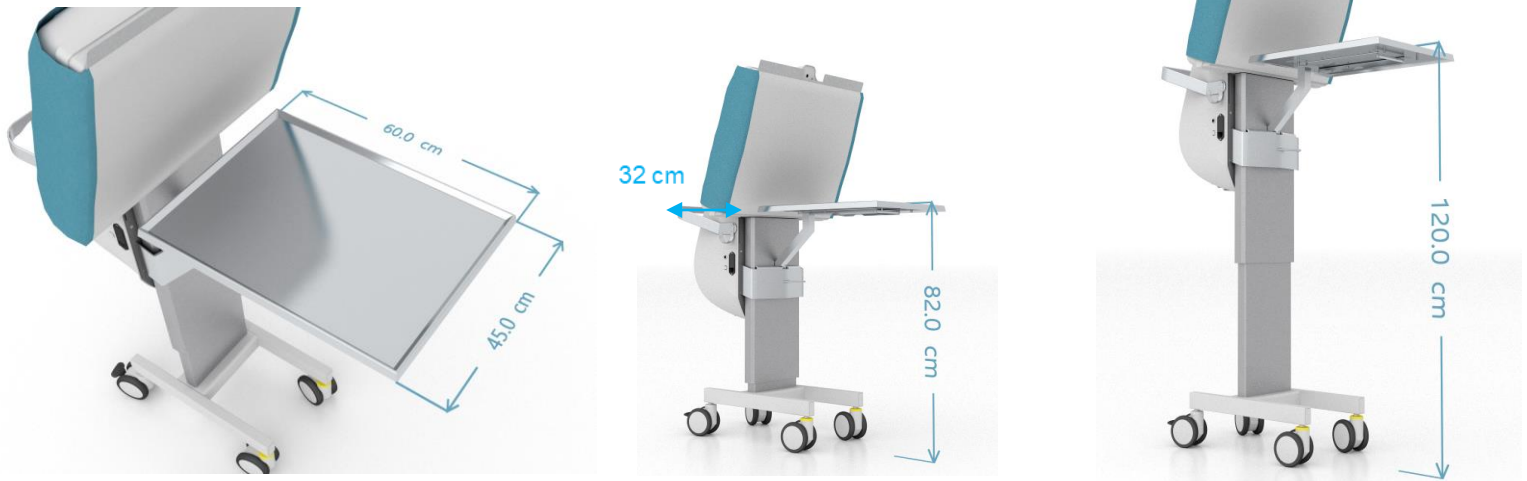
Cataract surgery, glaucoma surgery, refractive surgery, etc.



The sterility of the surgical field and the instruments is not restricted by the horizontal flow, neither by the surgical microscope nor by the surgical team. Turbulence and germs are largely excluded. This principle achieves up to 95% more "sterility" than with conventional air supply ceilings in the operating theater and on the instruments (see studies). Eye surgery requires the greatest possible level of asepsis because the consequences of endophthalmitis are serious and often irreversible. The mobility of the Operio devices and the affordable price makes it possible to upgrade existing operating theaters and intervention rooms quickly and inexpensively. Intravitreal injections, cataract surgeries and other ophthalmological surgeries can be performed under highly aseptic conditions that were previously only possible in a very expensive operating room.

The devices have a 2-stage filtering (F7 and H14 Hepa filter). In the area of instruments and the surgical field, ISO 5 is achieved. (Data on the infectiological significance of ventilation and air conditioning systems in operation and intervention rooms 2010 Kramer¹, R. K lpmann², F.Wille³, B. Christiansen⁴, M. Exner⁵, and Koll. Zentralbl Chir 2010; 135 (1): 11-17

Technical specifications



The Operio devices are extremely small and handy and can also be used in very small rooms. The removable instrument table from Operio is available in various lengths of 45 cm (for intravitreal injections), 60 cm (for ophthalmic operations and intravitreal injections) and 75 cm (for operations that require a lot of instruments). The electrical height adjustment can be carried out by the sterile OR staff (using a sterile covered display) as well as by the other OR staff using a separate display. There is no need to purchase a separate instrument table for storing the instruments. By constantly cleaning the air with Hepa filters, the germ level in the entire OR can be reduced.

The devices have the CE mark and meet the requirements for medical devices 93/42 EEC / Class I, 2007/47 EEC, as well as the guidelines 2004/108 / CE, EN 60601-1-2: 2014, EN 60601-1: 2006 , EN ISO 14971: 2012 and EN ISO 13485: 2012. The protective effect according to DIN 1946-4 is fulfilled

Studies

Mobile ultra clean unidirectional airflow screen reduces air contamination in a simulated setting for intra vitreal injection Int Ophthalmol. 2017; 37(1): 131–137. Published 2016 Apr 30. doi: 10.1007/s10792-016-0236-1 PMCID: PMC5306071 PMID: 27138593 Ruth Lapid-Gortzak, 1,2 Roberto Traversari, 3 Jan Willem van der Linden, 2 Sarit Y. Lesnik Oberstein,1 Oren Lapid,4 and Reinier O. Schlingemann1

Infectiological significance of ventilation and air conditioning systems in operating and intervention rooms 2010 Kramer1, R. Külpmann2, F.Wille3, B. Christiansen4, M. Exner5, and Koll. Zentralbl Chir 2010; 135 (1): 11-17

A study by the University of Greifswald showed a 1000-fold reduction in the particles in the surgical field. The colony-forming units in the OR field were reduced by 250 times in simulated OR operations (Prof. Dr. med.Axel Kramer, Institute for Hygiene and Environmental Medicine, Greifswald).

Purifying air over the operating field with anew mobile laminar airflow device to reduce the possibility of airborne contamination 2021

J Cataract Refract Surg 2021; 47:1327–1332 Copyright © 2021 Published by Wolters Kluwer on behalf of ASCRS and ESCRS: Robert H. Osher, MD, Gabriel B. Figueiredo, MD, Julia G. Schneider, MD, Jens Kratholm, MD

Intravitreal Injections during the COVID19 Outbreak in Northern Italy: An Innovative Approach for a High Quality and Safe Treatment 2022

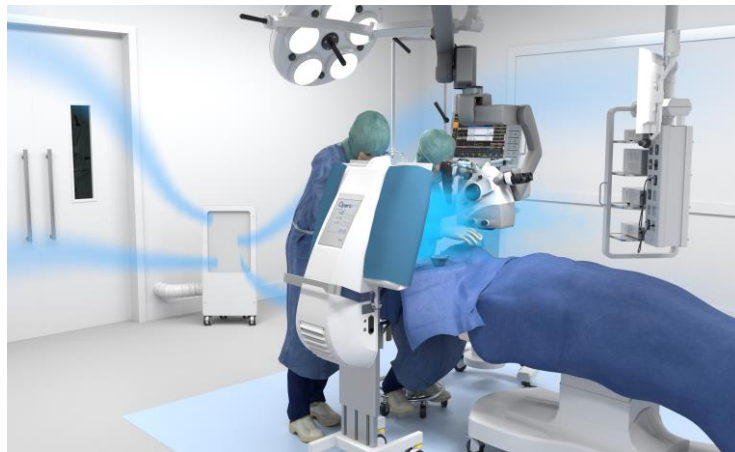
European Journal of Ophthalmology 1–7 © 2022 DOI: 10.1177/11206721221078554

Giuseppe Scarpa1 , Francesca Urban1, Margherita Scarpa1,Stefano Formentini1 and Andrea Beccastrini

Operio CLINIC

AIR HYGIENE WITH OR STANDARD

eliminates Covid-19 up to 99,9%



Don't rely on just any device for air purification, but pay attention to binding standards, such as those met by the Operio® Clinic:

- 99.9% efficiency against bacteria, spores, pollen, aerosols and microorganisms
- With highly cleaning F7 pre-filter and HEPA H 14 according to OR standard
- With integrated UV lamp to eliminate viruses (also Covid-19)
- Connection to outside air possible
- Variable volume setting (200 m3, 300 m3 or 480 m3 air per hour)



Interested in free advice?
Scan the QR code and see
contact details
WhatsApp +39 348 730 24 45

<https://www.normeditec.com>

