

A new era in surgical lights

Q-FLOW™



25.3.2017

Q-Flow Design Criteria

Stryker /
Berchtold



Dr. Mach



Steris



KLS
Martin



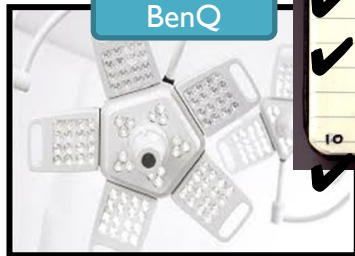
Simeon



Maquet



BenQ



Surgiris



- ✓ Color rendering - best in the market
- ✓ Very deep column of light
- ✓ Intuitive sterile controls for surgeon
- ✓ Adaptive features
- ✓ Improve hygienic conditions in OR
- ✓ Reinforce Merivaara OR concept

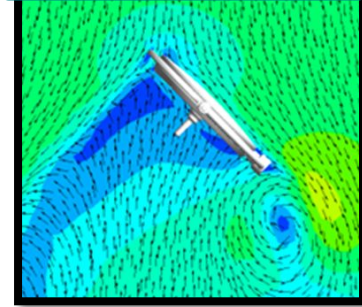
✓ Designed by Merivaara

Finnish design

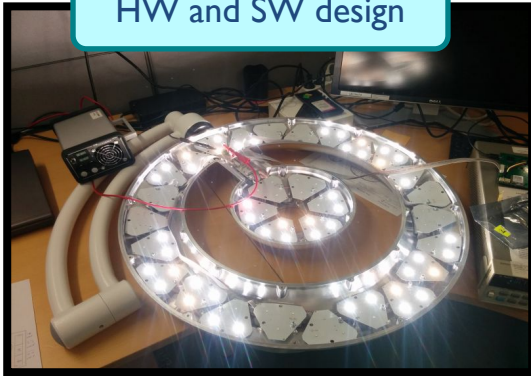
LED Optical design



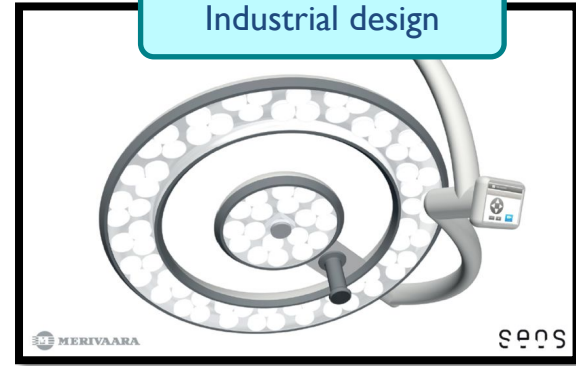
Aerodynamic design



HW and SW design



Industrial design



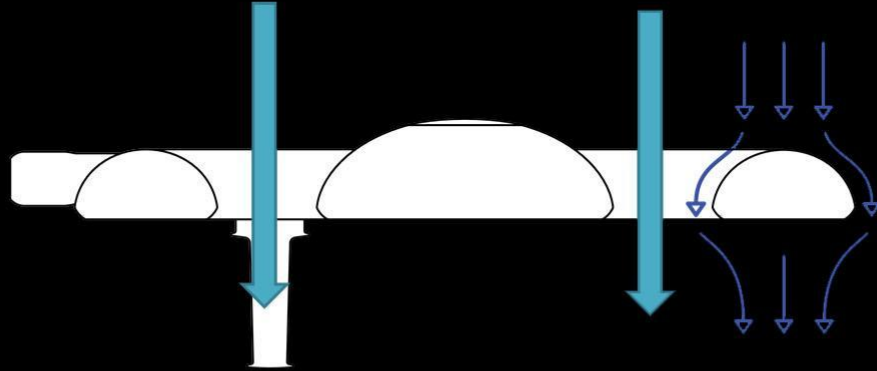


Q-OptiFlow™

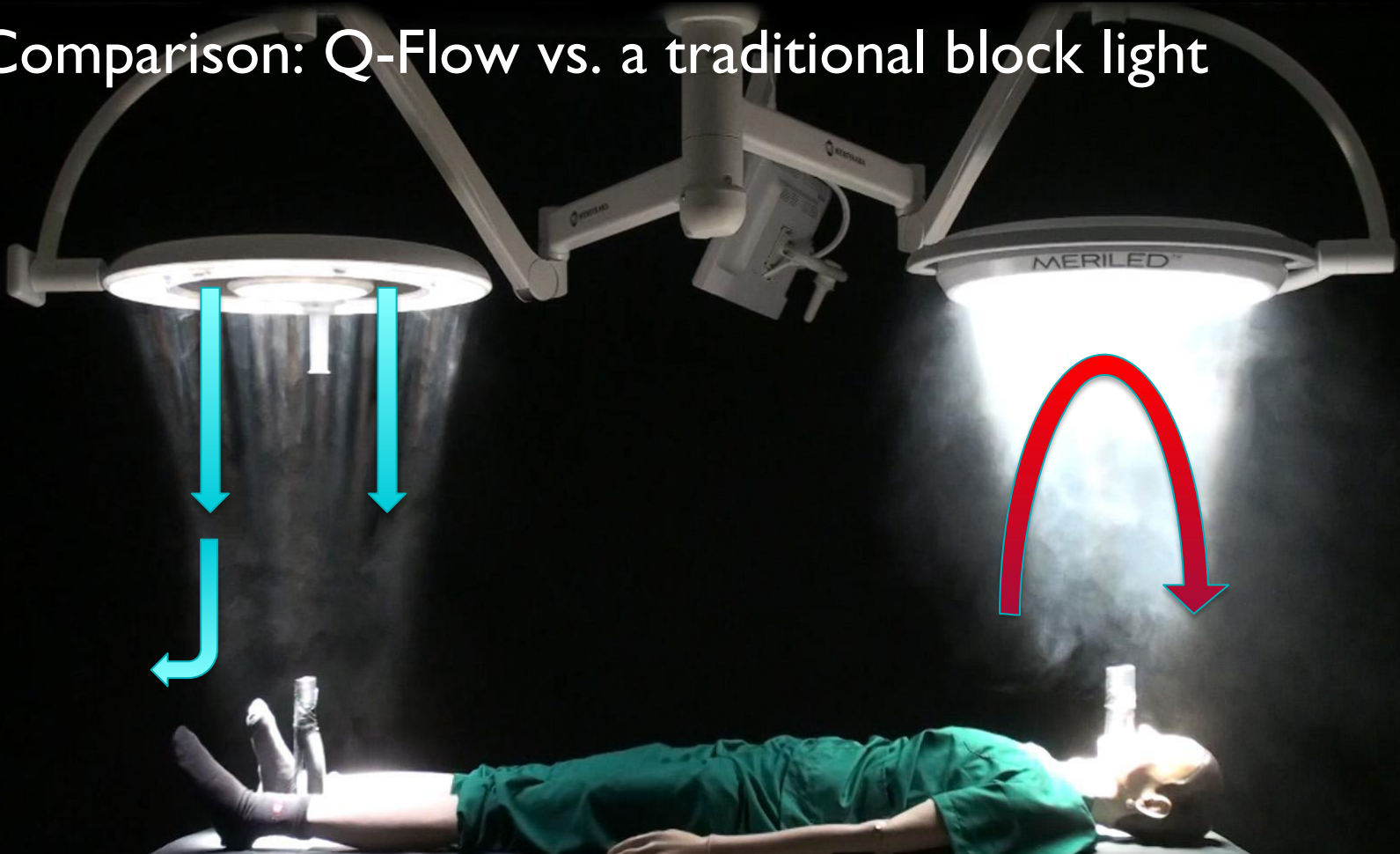
- Design optimized for an OR's air flow
- Air flows through the lamp and away from the operating area.
 - Reduces the potential for contamination

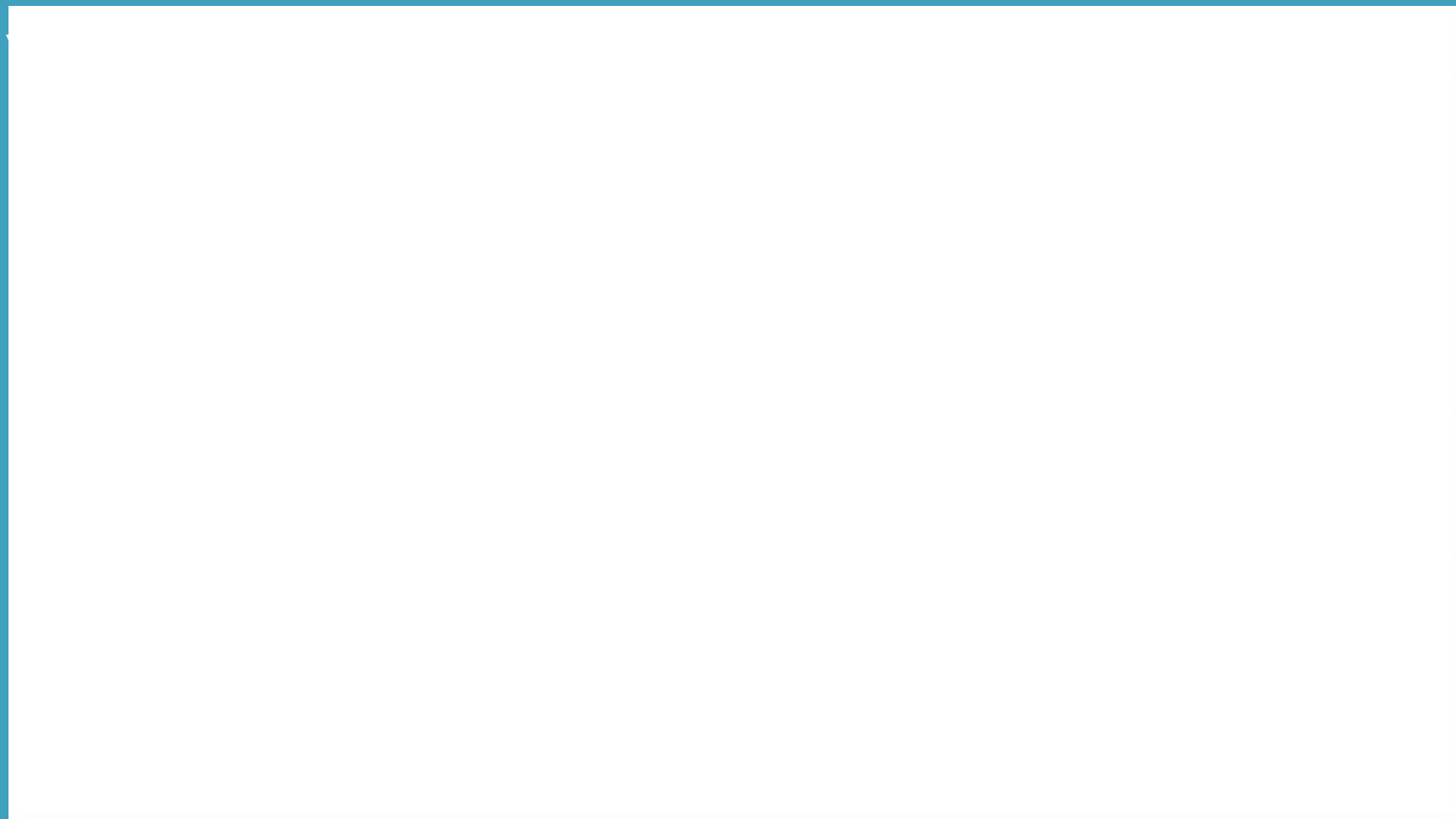
Air Flow

- Circular cross-section is optimal for laminar air flow



Comparison: Q-Flow vs. a traditional block light





Turbulence intensity

- Turbulence intensity should be below 37,5% according to the DIN 1946-4:2008 standard (*Ventilation in buildings and rooms of health care*)



**TURBULENCE
INTENSITY
15,9%**

Excellent colour rendering

- The best in the market
- Excellent colour rendering gives a perfect vision for OR staff



Excellent colour rendering

- Particularly important to define blood vessels and tissues



Excellent colour rendering

- Particularly important in plastic surgery
- Also important in other operations since most of the operations starts and finishes on the skin



Intueri™

- Intuitive Sterile Surgeon Control
- Allows the surgeon to adjust the dimming and light field size without the need to look up at the light head

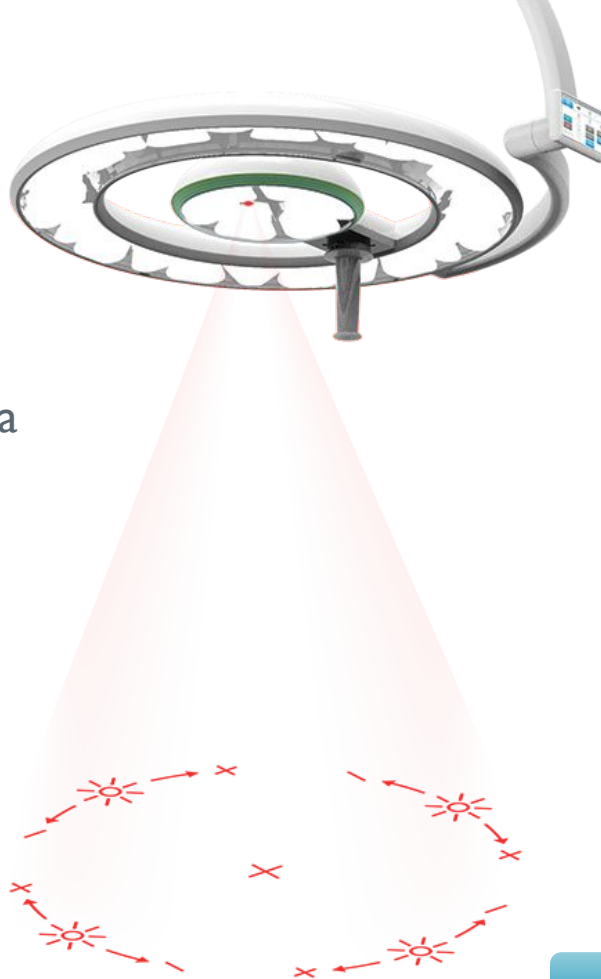


Unique

Available in i-models

Intueri™

- Intuitive Sterile Surgeon Control
- The interface will automatically appear around the operating area when the user grasps the handle



Unique

Available in i-models

Intueri™

- Intuitive Sterile Surgeon Control
- The interface will automatically appear around the operating area when the user grasps the handle



Unique

Available in i-models

Intueri™

- Functions also with "Covidien EZ Handle" disposable handle



DOC™

- Dynamic Obstacle Compensation
- Perfect light in all circumstances
- Even if the light beam is temporarily masked, the intensity of the remaining beams will increase and light in the operating area will be compensated



Available in i-models

DOC™

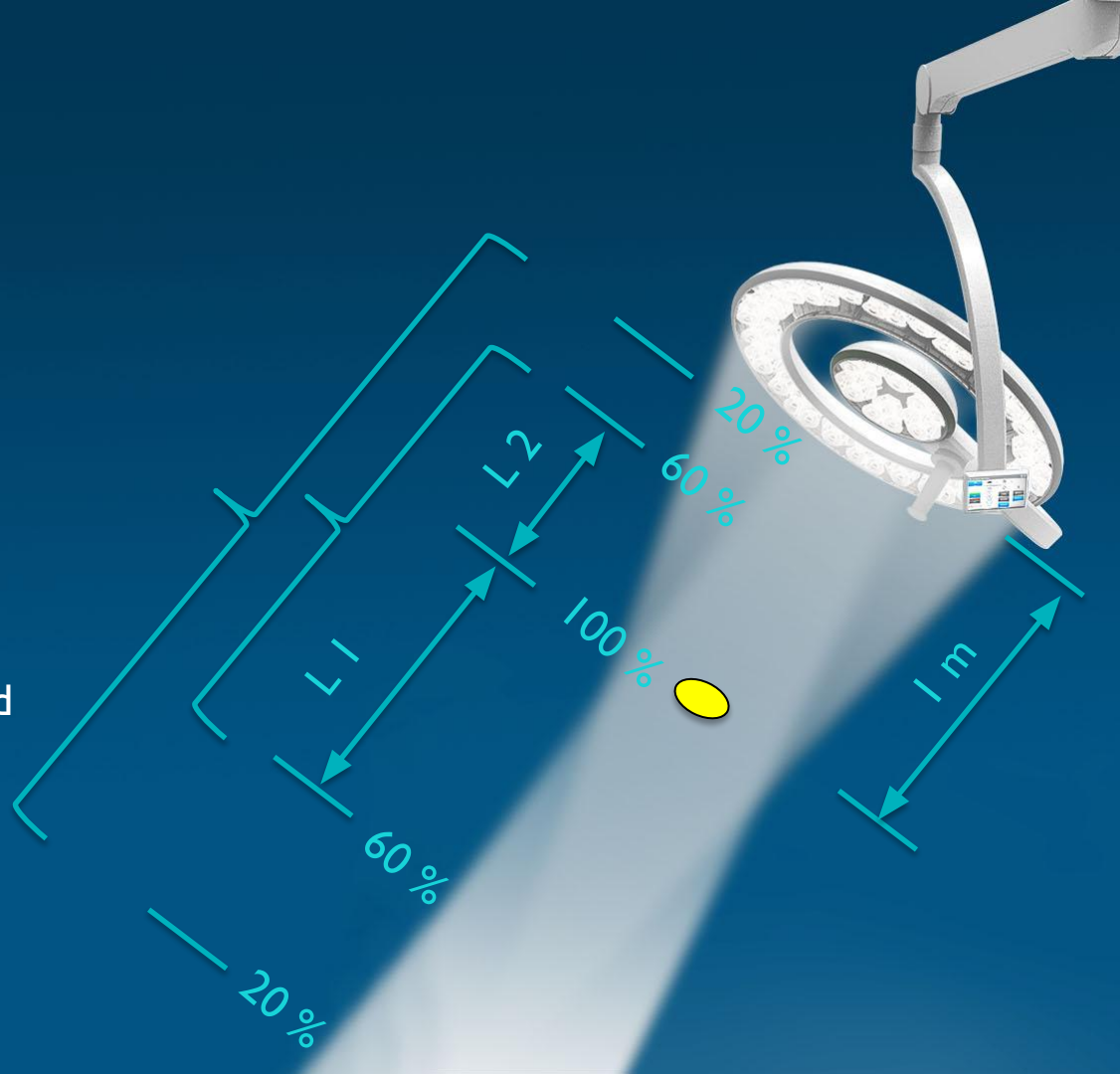
- Dynamic Obstacle Compensation
- Perfect light in all circumstances
- Even if the light beam is temporarily masked, the intensity of the remaining beams will increase and light in the operating area will be compensated



Available in i-models

Deep column of light

- Depth of illumination L1+L2 at 60%
 - 750 mm (Q-Flow 6)
 - 700 mm (Q-Flow 4)
- Depth of illumination L1+L2 at 20%
 - 1700 mm (Q-Flow 6)
 - 1400 mm (Q-Flow 4)
- These superb values decrease the need to adjust the light and thus improve efficiency in operating theatres.



Green Ambilite

- Provides a consistent light for seeing images and reading monitors better in OR



Green Ambilite



Intuitive User Interface

- The intuitive user interface helps the user to control the light and cameras
- Similar user interface is used in other control devices by Merivaara and thus it is easy to adapt



Improved hygienic conditions

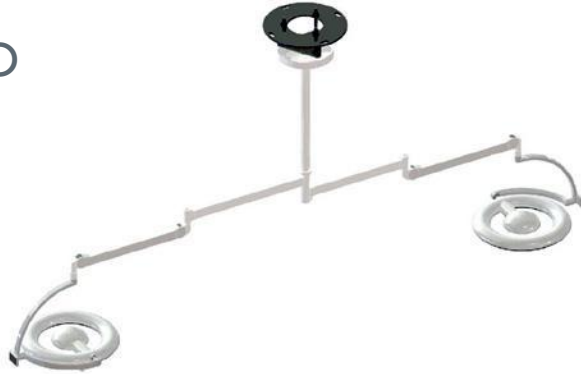


**Cleaning a light head has never
been this easy!**

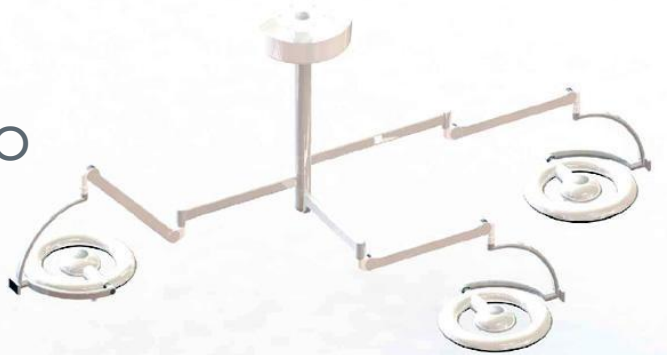
Set-up options

Low ceiling (LCH) versions

DUO



TRIO



SOLO



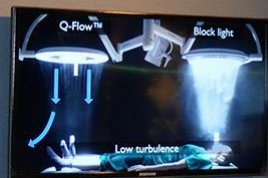
FEATURES



	Q-Flow™ 6i	Q-Flow™ 6	Q-Flow™ 4i	Q-Flow™ 4
Max illumination @ 1.0 m	160 klux	160 klux	140 klux	140 klux
Colour rendering index (Ra)	98	98	98	98
Red colour rendering index (R9)	99	99	99	99
"Skin colour" rendering index (R13)	99	99	99	99
Variable colour temperatures	3800 / 4500 K	3800 / 4500 K	3800 / 4500 K	3800 / 4500 K
Light field diameter	200–380 mm	200–380 mm	200–340 mm	200–340 mm
Turbulence intensity, DIN 1946	15.9 %	15.9 %	<35 %	<35 %
Green ambilight	✓	✓	✓	✓
Touch panel control	✓	✓	✓	✓
OpenOR compatible	✓	✓	✓	✓
MeriMote™ compatible	✓	✓	✓	✓
Integrated camera control unit	✓	✓	✓	✓
Wireless full HD camera ready (1080p60)	✓	✓	✓	✓
4K camera system (3840*2160p30)	○	○	○	○
Intuitive Sterile Surgeon Control (Intueri™)	✓	-	✓	-
Dynamic Obstacle Compensation (DOC™)	✓	-	✓	-
Disposable sterile handle system	○	○	○	○

✓ = included ○ = optional

FENNIapriize 17



FENNIapriize 17

GRAND PRIX

Come and join to see bright future with us!



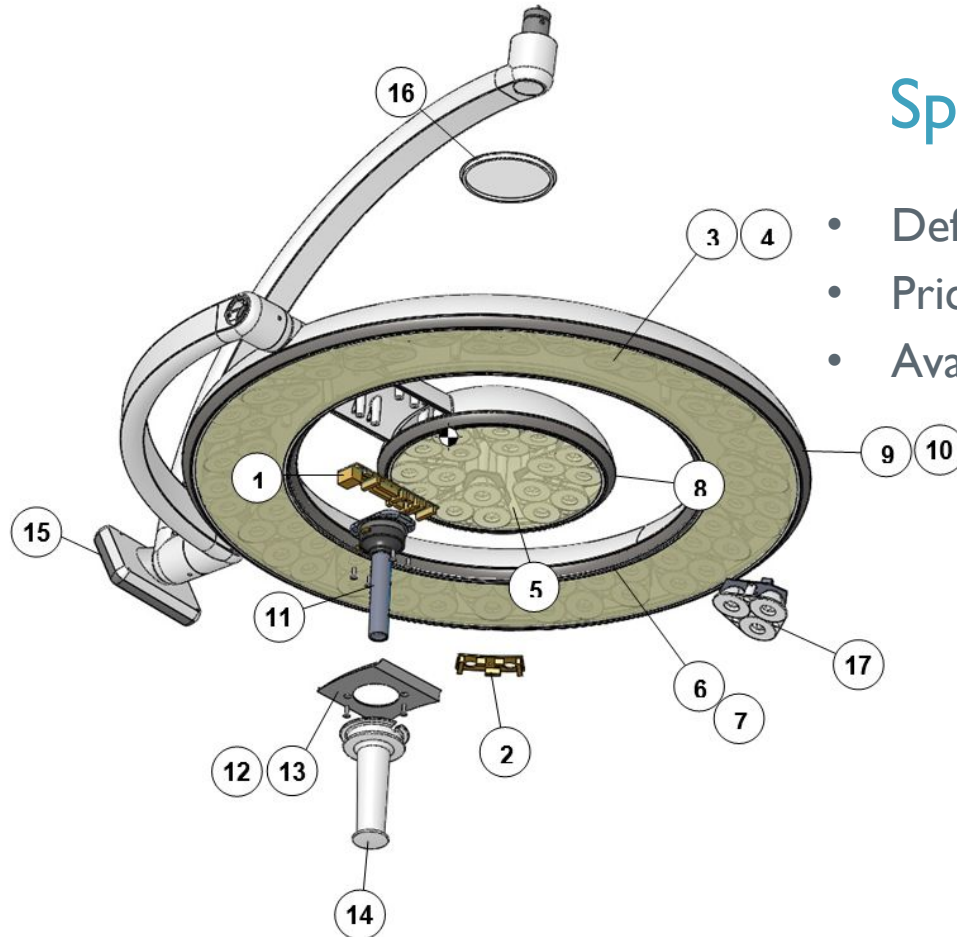
A serene winter landscape featuring a path of snow and ice leading through a forest of heavily snow-laden evergreen trees. The sun is low on the horizon, casting a warm, golden glow across the scene. The sky is filled with soft, wispy clouds. The path is marked with footprints and tire tracks, leading the viewer's eye into the distance. The overall atmosphere is peaceful and quiet.

Thank you
KIITOS

Spare parts & Installation kits



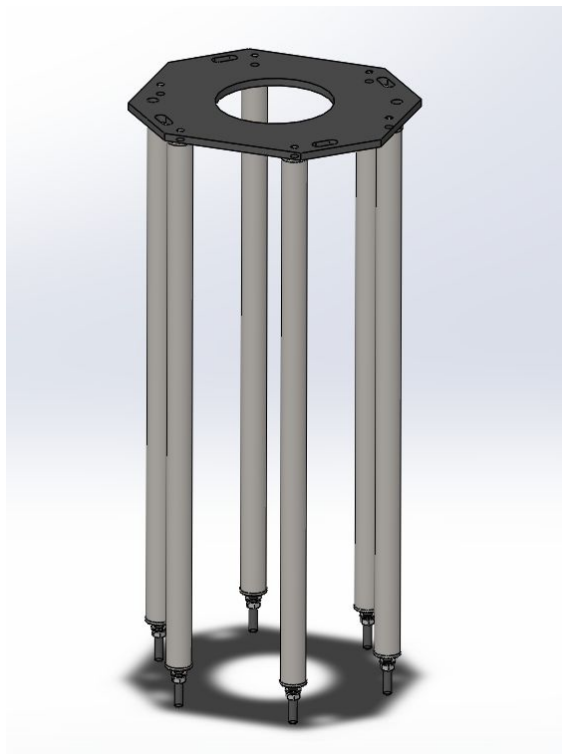
Spare part kits



- Defined in spare parts catalogue
- Pricing at extranet
- Available now!

A43405300

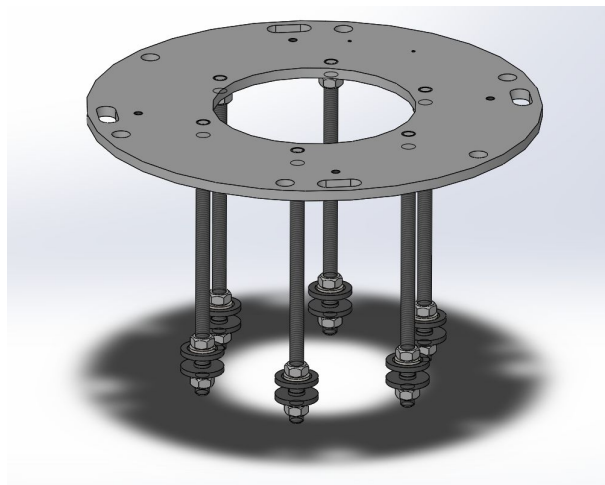
Intermediate ceiling set, 1m



Installation kits

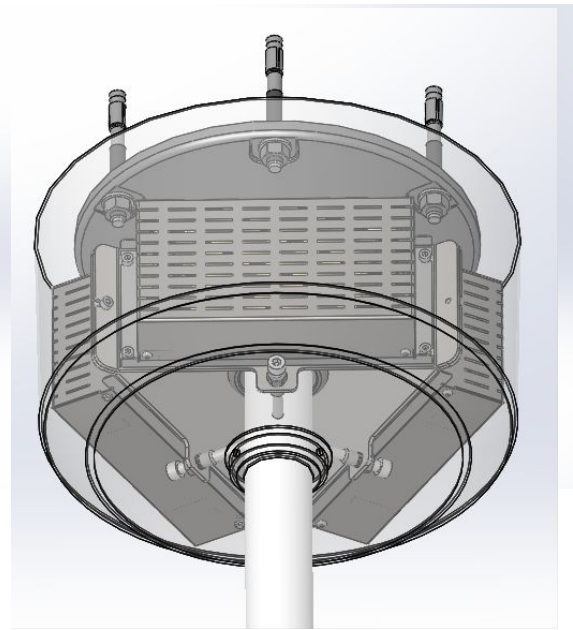
A43405900

Interface plate with screws



A43404700

Fixing bracket for 1-3 PSU
(Merivaara / FSN / Barco)



Installation,
maintenance &
training procedures



Installation inspection form - Q-Flow™ system

Product/system:	
Date of implementation:	
Serial number:	
Customer reference number:	

Location of installation:		Date of on-site verification:	
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Instructions

In this form is presented the inspection measures to be completed at installation stage of the system and can be used as well an annual maintenance check list to the Q-Flow™ system.

In order the safe use can be guaranteed, perform the necessary maintenance actions and possible follow-ups resulted before check out the box. The defective or incorrectly installed device must not be used! Note! column is for to clarify with words the details related to the measure.

Important information

- The inspection intervals must be observed
- This inspection plan is only valid when combined with the installation and operating Instructions which must be consulted as complementary reference documents during inspections.

The system must be inspected by operator or a company authorised by operator for the following points at the specified below:

	Checked and passed!		Note!
	Ok	No	
Visual inspection			
The parts of the Q-flow™ system are not deformed and are free from damage (scratches, cracks, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	
The system is free from defects in paintwork	<input type="checkbox"/>	<input type="checkbox"/>	
The plastic covers are supplied and correctly positioned	<input type="checkbox"/>	<input type="checkbox"/>	
All ID plates and labels are available and readable	<input type="checkbox"/>	<input type="checkbox"/>	
All the plastic screws and protective covers are available and properly installed	<input type="checkbox"/>	<input type="checkbox"/>	

Installation inspection form

properly; re-adjust them if required	<input type="checkbox"/>	<input type="checkbox"/>	
Limit stop (if existing) is properly in place and effective	<input type="checkbox"/>	<input type="checkbox"/>	
Load compensation/spring tension is correct, re-adjust it if required	<input type="checkbox"/>	<input type="checkbox"/>	
All sockets (if existing) have been properly mounted and function properly	<input type="checkbox"/>	<input type="checkbox"/>	
The screw type fixings and connections with the torques specified in the Installation Instructions are securely in place	<input type="checkbox"/>	<input type="checkbox"/>	
After 10 years in operation check the system for visual damage, and if signs of wear in insulation is observable in the cables and hoses, replacement is needed immediately	<input type="checkbox"/>	<input type="checkbox"/>	
Make sure the synchronised control feature of the Q-Flow™ does not control any other Q-Flow™ luminaire in the same building.	<input type="checkbox"/>	<input type="checkbox"/>	
Electrical inspections			
Protective conductor resistance and continuity checked (IEC/EN 62353)	<input type="checkbox"/>	<input type="checkbox"/>	
The compliance of the PSU installation must be verified against given instructions by the end user.	<input type="checkbox"/>	<input type="checkbox"/>	

Warranty

Merivaara Corporation ("Merivaara") hereby warrants this product (Q-Flow™) manufactured by Merivaara to be free from defects in material and workmanship for a period of twenty-four (24) months from the date of delivery from Merivaara to the distributor, or twelve (12) months from the date of delivery from the distributor to the customer, whichever is shorter.



WARNING! Disregarding these installation check points will void the warranty and may jeopardize the safety matters concerned which cannot be otherwise guaranteed.

I assure that the mentioned measures are completed in accordance with the requirements given:		
Date	Signature/Stamp	Name

Annual maintenance inspection form

Annual maintenance inspection form - Q-Flow™ luminaires

Product/system:	
Date of implementation:	
Serial number:	
Customer reference number:	

Location of installment:	
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Instructions

In this form is presented the annual inspection measures.

In order the safe use can be guaranteed, perform the measures listed before check out the box. The defective components must be replaced with words the details related to the measure and component.

Important information

- This inspection form is only valid when combined with the user manual which must be consulted as complementary reference.
- After 10 years in operation (end of the product service life) the inspection must be continued as guided. Perform a complete check of the luminaire intended.
- If one of the measures is found to be non-compliant the luminaire system must be placed out of operation immediately to persons and equipment.
- Damaged, deformed or missing components must be replaced.

Documentation

- Responsibility for these measures and maintaining the luminaire is the user's organization.
- Annually copy the plank form this form, fill in and keep it for the information available when ordering spare parts.

Visual inspection	Checked and passed!		Note!
	Ok	No	

The parts of the luminaire are not deformed and are free from damage (scratches, cracks, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	
All luminaires are free from defects in paintwork	<input type="checkbox"/>	<input type="checkbox"/>	
Protective covers are in place properly and any parts are not missing or come loose	<input type="checkbox"/>	<input type="checkbox"/>	
Identity plate and product labels are in place and readable	<input type="checkbox"/>	<input type="checkbox"/>	
All LED modules are fully functional and the light does not flicker	<input type="checkbox"/>	<input type="checkbox"/>	
Covering front glass is optically clear and free from disruptive scratches	<input type="checkbox"/>	<input type="checkbox"/>	
Check the integrity of the covering optical glass	<input type="checkbox"/>	<input type="checkbox"/>	
Check the luminaire housing is completely free from the visible flaking of the surface coating.	<input type="checkbox"/>	<input type="checkbox"/>	
Check the silicone edge trims are in place correctly and there is no visible flaking.	<input type="checkbox"/>	<input type="checkbox"/>	
Check the covering front glass is completely transparent without any milkiness in the optical opening.	<input type="checkbox"/>	<input type="checkbox"/>	
Check that there is no visible flaking on the touch screen panel housing and the seams caused by daily cleaning and disinfection.	<input type="checkbox"/>	<input type="checkbox"/>	

Functional check

Check the protective collar and wedge of the balance arm junction are in place.	<input type="checkbox"/>	<input type="checkbox"/>	
Check the luminaire remains in adjusted position and rotates smoothly in its adjustment range.	<input type="checkbox"/>	<input type="checkbox"/>	

Functional check

Check all mechanical functions as well as the adjustment features of the sterilizable handle works as intended.	<input type="checkbox"/>	<input type="checkbox"/>	
Check the touch screen panel responds correctly and the housing is not defected	<input type="checkbox"/>	<input type="checkbox"/>	
Check the luminaire is configured correctly.	<input type="checkbox"/>	<input type="checkbox"/>	
Make sure the synchronised control feature of the Q-Flow™ does not control any other Q-Flow™ luminaire in the same building.	<input type="checkbox"/>	<input type="checkbox"/>	

Electrical inspections

Protective conductor resistance and continuity checked (IEC/EN 62353)	<input type="checkbox"/>	<input type="checkbox"/>	
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WARNING! Disregarding these annual inspection check points will void the warranty and may jeopardize the safety matters concerned which cannot be otherwise guaranteed.

I assure that the mentioned inspection measures are completed in accordance with the requirements given:		
<div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </div>		
Indicate the number of inspection year in question; 1. 2. 3. 4. 5. 6. 7. 8. 9. 10.		
Date	Signature/Stamp	Name

User training guidelines

Product/system:	
Date of implementation:	
Serial number:	
Customer reference number:	

Location of installment:		Date of product training:	
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Scope

The end user (nurse, anesthetist nurse CRNA, medical doctor, surgeon etc. or other personnel who is involved using the product) must be trained by the person authorized and in charge of before use of the product (IEC 62366), including technical personnel training in the stage of installation.

Content of end user training

- Overview of the supplied system
- Intended use
- Complete adherence of the user manual
- Cleaning and disinfecting procedures
- Daily maintenance intervals
- Patient and personnel safety factors
- Emergency use and call of service in case of malfunction
- Rights and liabilities, and who is in charge of
- Warranty terms and conditions
- At the end of the training the participants take part in the test in order to verify the program consisted of understanding.

Documentation

- Responsibility for registration of the participants and maintaining records in the register lies on the end user's organization.

Duration

- The training should last approx. 1 hour; it is recommended for renewal at least once every 3 years.

User training guidelines

- Image transfer from the camera module
- Cleaning at stage of implementation and after service
- System maintenance program – Inspection form, maintenance intervals
- Troubleshooting
- System maintenance in practice, required tools etc.
- Replacing the damaged part of the system in place
- Support services, contact information and subscription content, list of spare parts available
- At the end of the training the participants take part in the test in order to verify the program consisted of understanding.

Documentation and maintenance of service history

- Responsibility for registration of the participants and maintaining records in the register lies on the end user's organization.

Duration

- The training should last approx. 2 hours; it is recommended for renewal at least once every 3 years.



WARNING! Disregarding these measures will void the warranty and may jeopardize the safety matters concerned which cannot be otherwise guaranteed.

I assure that the mentioned training measures are completed in accordance with the requirements given:

Count of participants: ____

Date

Signature/Stamp

Name of
instructor