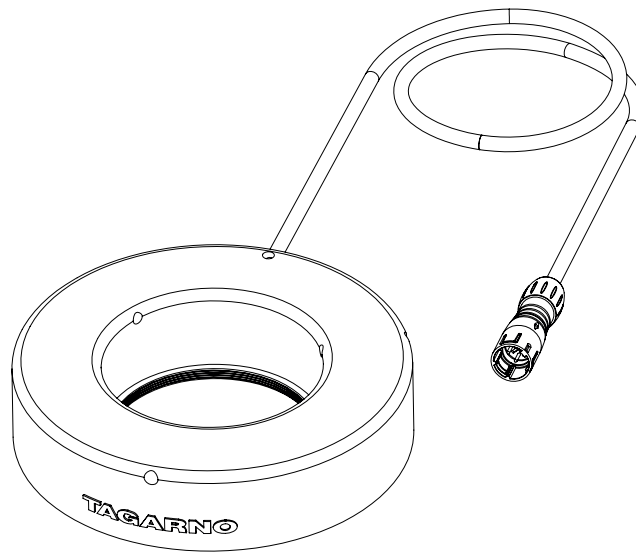


MANUAL | TAGARNO RING LIGHT

VERSION: 1.2 | FIRMWARE 5.20 | 2020-09-15



CONTENTS

1.	INTENDED USE	2
2.	WARNINGS	2
3.	WARNING LABEL	2
4.	REQUIRED AND OPTIONAL PRODUCTS	3
5.	ASSEMBLING	4
6.	CONNECTING	5
7.	OPERATION	6
8.	TECHNICAL SPECIFICATIONS	7
9.	PRODUCT LABELS	8
10.	DECLARATION OF CONFORMITY	9
11.	COMPLIANCE STATEMENTS	10

Go to tagarno.com/productmanuals to find manuals and tutorial videos.

TAGARNO

1. INTENDED USE

This product, consisting of a circular light source, a controller and power supply is intended as an add-on to existing magnifying solutions to provide high quality shadowless illumination.

2. WARNINGS



Read all safety information before you use the product.
Please pay attention when you see a warning label on the product.



This product is for indoor use only.

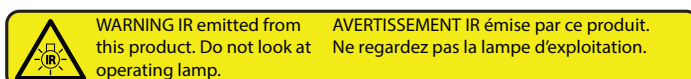
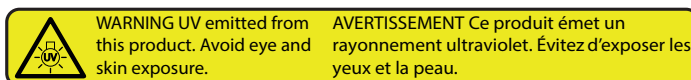
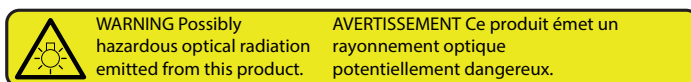


You must not discard this electrical/electronic product in domestic household waste.
Please dispose at your local recycling centre.

1. Read the manual before you use the product
2. Use the product only as specified, or the protection supplied by the product can be compromised
3. Do not position the equipment so that it is difficult to operate the disconnecting device (appliance inlet of external power supply, equipment input connector)
4. If fluids are spilled on the product, turn the system off immediately by pulling the power supply out of the electrical outlet
5. Please do not connect the product, if visible damages appear
6. Do not dismantle any parts of the product, except where noted in the manual
7. Use only the power supply provided from TAGARNO
8. Do not look directly into the light source
9. Please note that UV lamps degrade over time. Within 2000 hours of use the intensity is reduced to 80%
10. When using the UV ring light, be aware that the UV LEDs when in operation emit invisible ultraviolet radiation, which may be harmful to eyes and skin, even for brief periods. Do NOT look directly into the UV LED during operation. Be sure that you and all persons in the vicinity wear adequate UV Safety protection for eyes and skin.

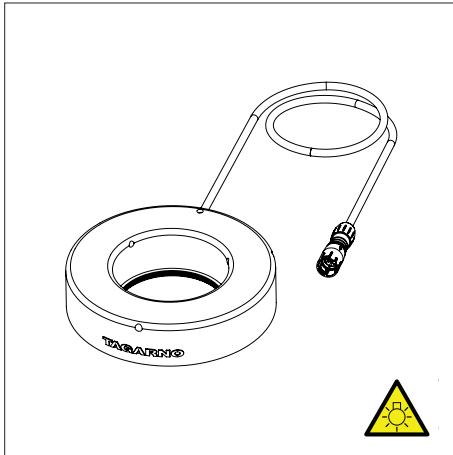
3. WARNING LABEL

This following label is placed visibly on the product:

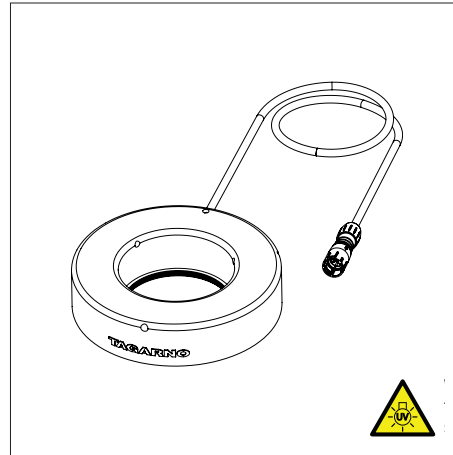


4. REQUIRED AND OPTIONAL PRODUCTS

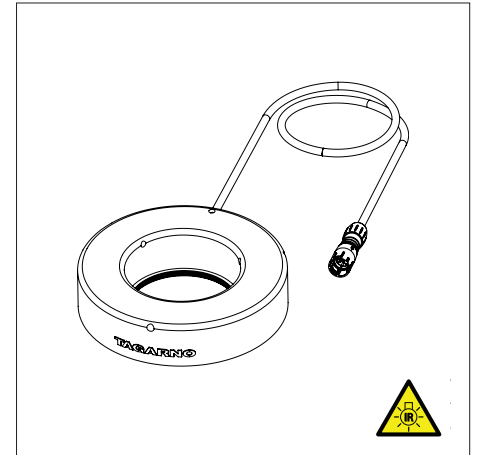
LIGHT OPTIONS



Ring light White



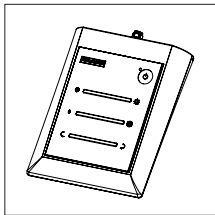
Ring light UV



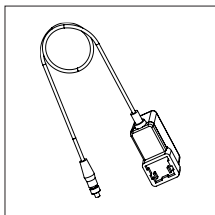
Ring light IR

REQUIRED PRODUCTS FOR FULL USAGE

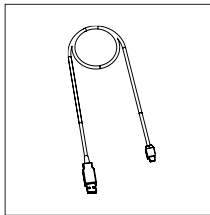
Ringlight White, Ring light UV and Ring light IR



Lights control box



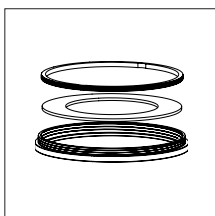
Power supply



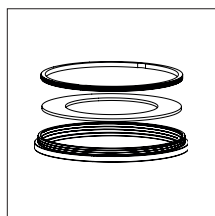
USB cable

OPTIONAL PRODUCTS FOR ADDITIONAL USAGE

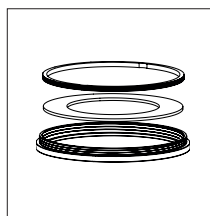
Ring light White



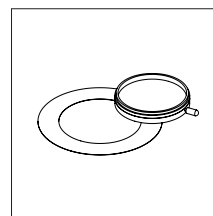
Fresnel lens kit
(100 mm for Lens 1x Plan)



Fresnel lens kit
(40 mm for Lens +25 and +50)



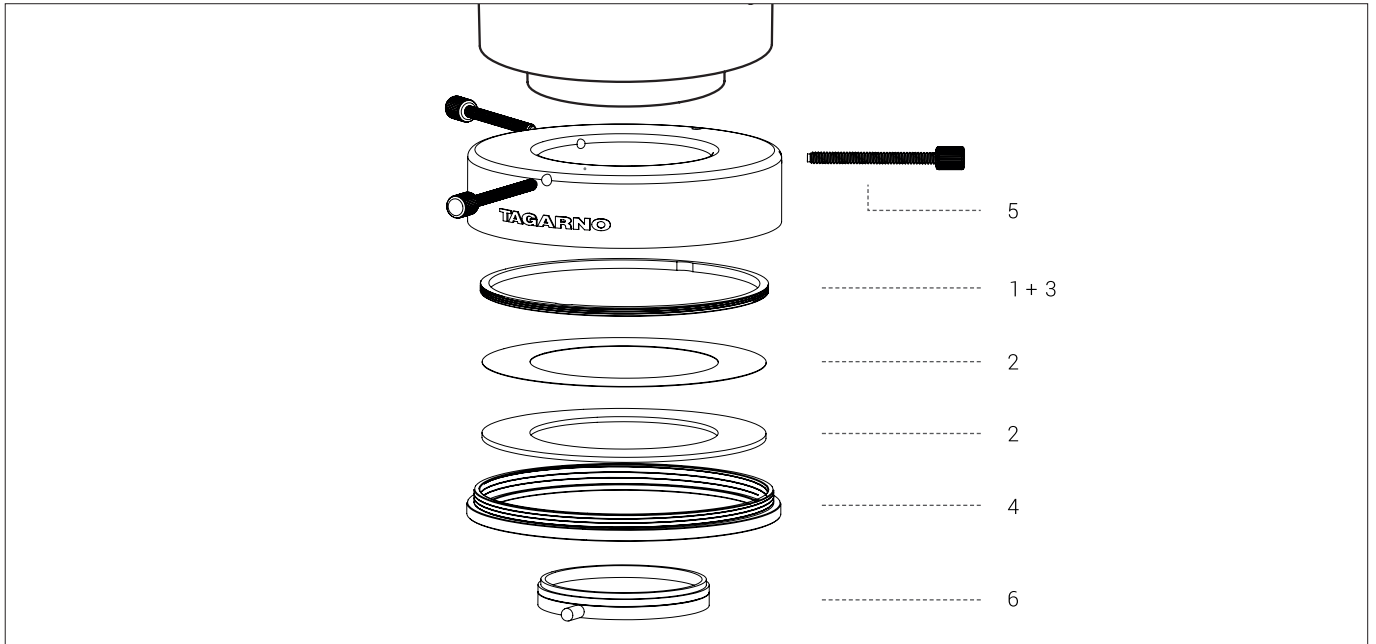
Diffusor lens kit



Polarizer kit

5. ASSEMBLING

ASSEMBLING

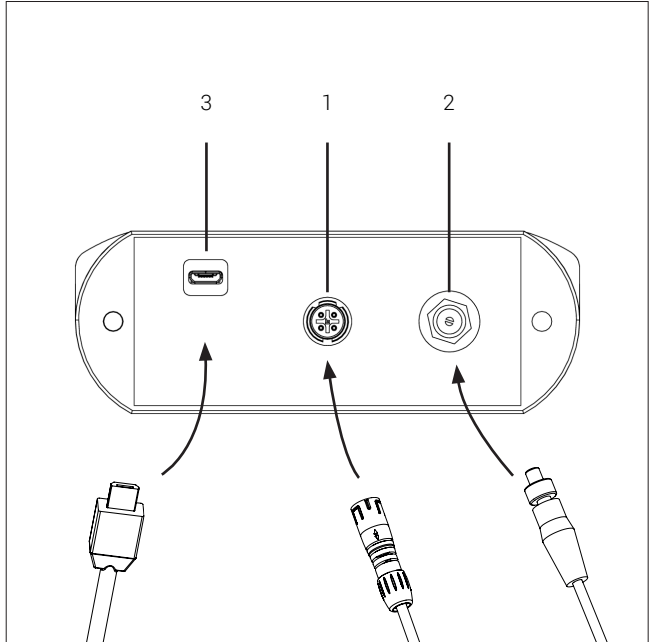
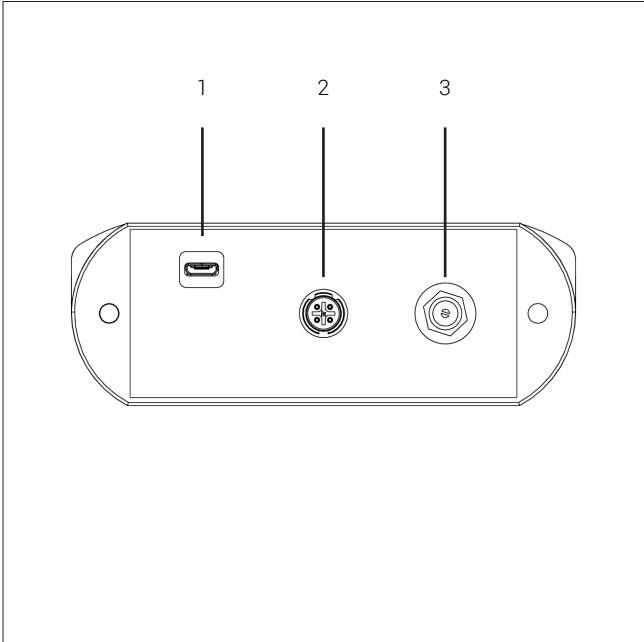


To attach accessories to the TAGARNO Ring light before mounting, follow the order below. If you want to mount the ring light with no accessories, go directly to step 5.

1. Remove the lock ring
2. Stack filters in the following order, if needed:
 - Polarizer filter
 - Lens Frensel (with lens ridges towards the camera) or Optical diffusor
3. Place lock ring on top of filters and turn to fasten
4. Assemble lens holder and ring light
5. Attach the ring light on the camera head with the screws
6. If needed, attach optical analyzer filter

6. CONNECTING

CONNECTING



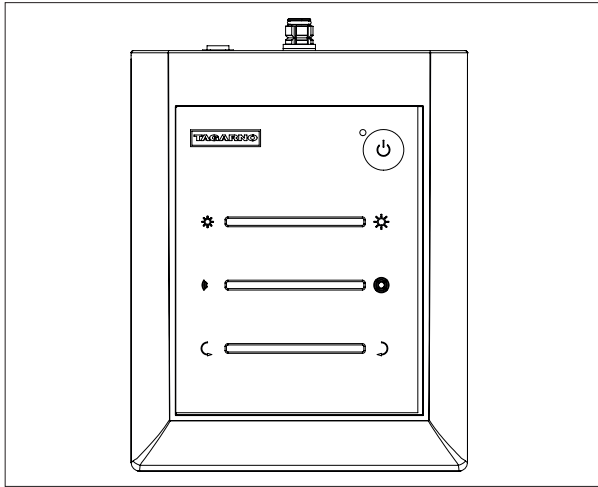
1. Remote control
2. Ring light interface
3. Power supply

Connect the control box in the order shown above.

Connector	Description	Type	Connect to	Specification
1	Remote control	USB 2.0 Micro-B female	Microscope	USB 2.0 Device, Self-powered. Cable length < 3 m
2	Ring Light interface	Four pole Circular Connector	Ring light	Output: 12V \Rightarrow 1.5A Max ⚠ Use only Light sources provided by TAGARNO
3	Power supply	DC Jack female	Power socket	Input: 12V \Rightarrow 0.4A ⚠ Use only the power supply provided by TAGARNO: Brand/Model: Mean Well/GEM1812 Protection class II Overvoltage category II Input: 100-240V \sim 0.45-0.2A, 50/60Hz Output: 12V \Rightarrow 1.5A Max





7. OPERATION

LIGHTS CONTROL BOX



The control box uses finger touch. It contains a touch button with LED indicator and these touch sliders:

Power/LED indicator

-  Touch the button for half a second to switch between power on and off
-  LED green = ON
-  LED off = OFF
-  LED blinking red = No ring light detected

Intensity

Use the sliders to decrease or increase the light intensity, respectively, or press on the slider to choose light intensity level.



Segmentation

Select the number of active LED segments from 1 to 16

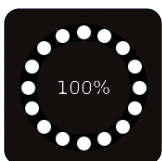


Rotation

Rotate the active segments from 0 – 360°



An indicator in the top left corner of the monitor will show the current settings of the ring light as they are being changed.



NB: When turning the microscope off, the ring light will also switch off. The settings used at its last use will be recalled once the microscope is turned back on.

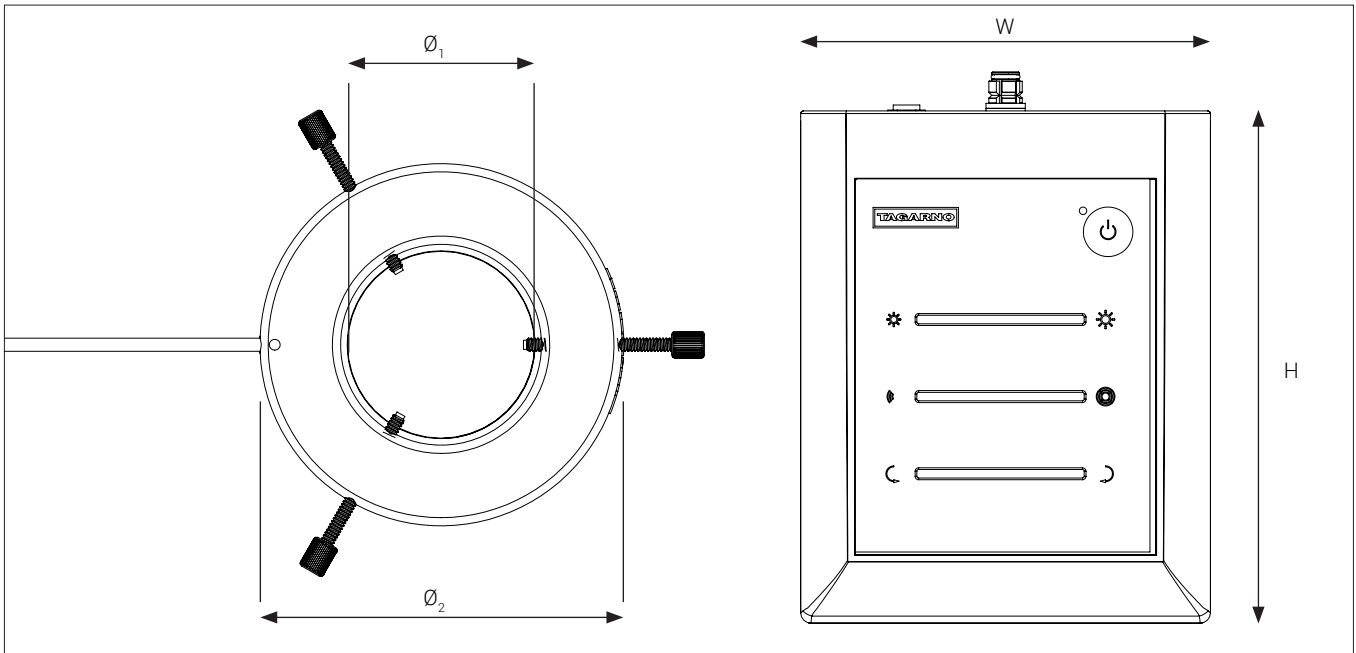
SOFTWARE ADAPTION FOR IR RING LIGHT



When using the IR Ring light, the IR filter must be deactivated in the Set up menu of the microscope.

Click this icon to disable/enable the IR filter.

8. TECHNICAL SPECIFICATIONS




Dimensions	Ø1: 32-60mm/1.26-2.36"	Adjust using screws.
	Ø2: 110mm/4.33"	
	H: 150mm/5.91"	
	W: 120mm/4.72"	
Weight	Lights control box	340g/0.75lbs
	Ring light	280g/0.62lbs
Lighting	LED count	48
	Segmentation	16 segments of 3 LEDs each
	White	Color temperature: 6500K Color rendering index: 85 Life expectancy for LED bulbs: approx. 35000 hours Lux at 250 mm distance (no Fresnel lens mounted): 6500 Lux at 70 mm distance (100 mm Fresnel lens mounted): 30000 $\lambda_{peak} = 460 \text{ nm}$
	IR	$\lambda = 830 \text{ nm}$
	UV	$\lambda = 385 \text{ nm}$
Power requirements	Line voltage	100 – 240V ~ ±10%
	Line frequency	50/60Hz
	AC current consumption (typ.)	50mA/100V ~ 20mA/240V ~
	DC current consumption (typ.)	0.4A/12V ~
Environmental conditions	Temperature	Storage: -5 to 60°C / 23 to 140°F
		Operation: 5 to 40°C / 41 to 104°F
	Humidity range	Storage: 20 to 90% RH non-condensing
		Operation: 30 to 80% RH non-condensing
	Altitude	0 to 2000m / 0 to 6500ft above sea level
Pollution degree	2	

9. PRODUCT LABELS

These labels are placed on the product:

Lights control box, black

CONTROL BOX, ART. NO.: 303053
Version: 1.04
Supply: 12V \approx 400mA




This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation

TAGARNO AS – Sandøvej 4, DK-8700 Horsens, Denmark. yyyy-mm-dd

Lights control box, white

CONTROL BOX, ART. NO.: 303058
Version: 1.04
Supply: 12V \approx 400mA



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation

TAGARNO AS – Sandøvej 4, DK-8700 Horsens, Denmark. yyyy-mm-dd

10. DECLARATION OF CONFORMITY

PRODUCT

MODEL TAGARNO LIGHTS CONTROL BOX | Product no.: 303053/303058
TAGARNO RING LIGHT, WHITE | Product no.: 303050
TAGARNO RING LIGHT, UV | Product no.: 303051
TAGARNO RING LIGHT, IR | Product no.: 303052
ART Ring Light for visual inspection units

MANUFACTURER

NAME TAGARNO A/S
ADDRESS Sandøvej 4
ZIPCODE/CITY 8700 Horsens
COUNTRY Denmark
PHONE +45 76251111



DESCRIPTION

TAGARNO A/S hereby declares that the product listed above, consisting of control box, ring light(s) and a 12V power supply, is in compliance with the following European directives:

2006/25/EU **Artificial Optical Radiation**
2014/30/EU **Electromagnetic Compatibility**
2014/35/EU **Low Voltage Directive**

By conforming to the following harmonized standard:

IEC 61326-1:2012 **Class B / Basic Electromagnetic Environment**
IEC 61010-1:2010/AMD1:2016 **Cat II, Pollution degree 2**
IECEE CB Scheme **DK-06840-FC**

The declaration is issued by:

MANUFACTURER TAGARNO A/S

TAGARNO

TAGARNO A/S
Sandøvej 4
8700 Horsens
Denmark

+45 76251111
mail@tagarno.com

www.tagarno.com

11. COMPLIANCE STATEMENTS

SAFETY

This product is designed to meet the requirements of the following electrical equipment safety standards for measurement, control, and laboratory use:

IEC 61010-1

UL 61010-1

CSA C22.2 No. 61010-1

INDUSTRY CANADA COMPLIANCE STATEMENT

CAN ICES-3 (B)/NMB-3(B)

This Class B digital apparatus meets the requirements of the Canadian Interference Causing Equipment Regulations.

Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.

FCC COMPLIANCE STATEMENT (UNITED STATES)

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, 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 a particular 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 into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help