

# RIMSA

brightening ideas



D400 - D600 - TRIS - SATURNO



# ENGINEERING **IN SAFETY**

**What happens if the smallest part of your medical device isn't be reliable and consequently compromises the whole product?**

RIMSA engineers focused on safety to develop innovative, original and efficient surgical lights. Every mechanical and electrical components have been tested for several years before to being installed on OT lamps. Experience, reliability, and research enabled RIMSA to develop OT surgical lights, achieving prestigious and incomparable results: excellent lighting performances, cold light

shadowless, personalized design, deep lighting, focal column to avoid re-focussing of the light, easy manoeuvrability and soft positioning, sterilizable handle, unlimited rotation, anti-dust round shape reflector, hygienic requirements, in compliance with international rule IEC 60601-2-41, CE mark in accordance to Medical Device Directive 93/42/CEE.



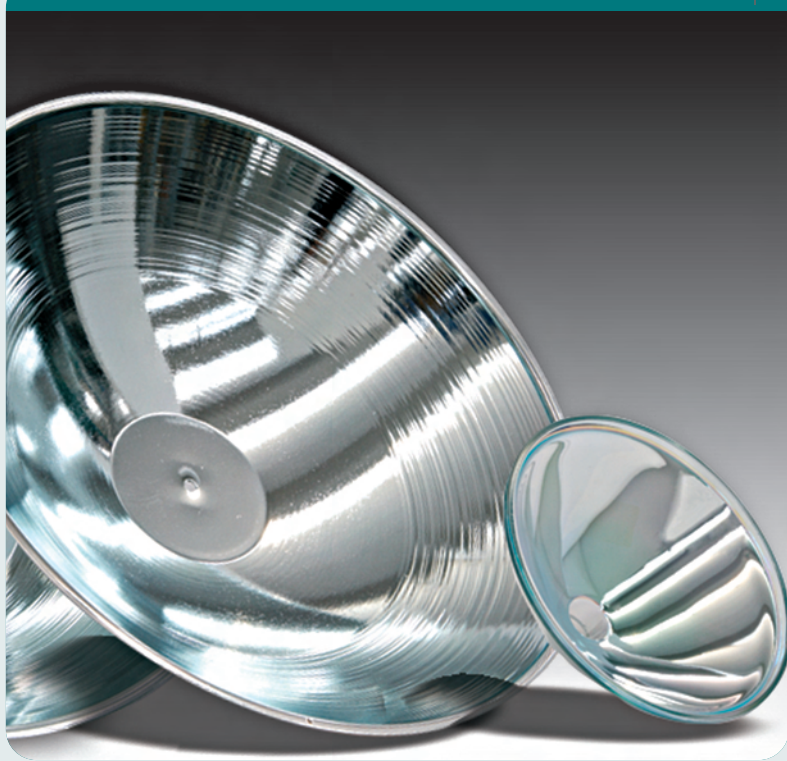
## RIMSA, **QUALITY LIGHT**

**The correct illumination of the operating field requires "quality light".**

Quality referred to the luminous intensity, the exact reproduction of colours, the removal of shadows, the colour temperature, depth and cold light.

The RIMSA lamps satisfy these requirements. The RIMSA series is a high technology apparatus designed to guarantee technical-illumination performance, unique of its kind. All of these are devices conforming to the 93/42 CE Medical Devices directive and marked CE as a Class I medical device.





## LIGHT INTENSITY

The threshold of intense luminosity tolerated by each individual is subjective and depends upon the predisposition of the eye to luminous display. Generally high luminous intensity provokes dazzle phenomena in the eye, stimulates the musculature of the pupil with consequent sight fatigue, and disturbs the surgeon's vision during the rapid succession of images from the operating field to the surrounding environment. This is why we advise a luminous intensity between 100,000-130,000 lux for surgical operations, while a luminous intensity of 50,000 lux is suitable for small surgery and observations. Complex mathematical calculations have allowed the creation of original and revolutionary reflectors in our lamps: multi-elliptical (D400) and parabolic (Saturno and Tris). These technologies allow obtaining an intense, stratified, deep and shadowless light.



## FAITHFULL COLOURS REPRODUCTION

The exact reproduction of CRI colours (colour rendering index) is the ability of a luminous source to restore the different colours of the visible spectrum without modifying the tints. The "sunlight" treatment of the Rimsa lamp applied to the reflecting body allows having a chromatic yield index (CRI) equal to 94 Ra.



## SHADOWSLESS LIGHT

The shadowless (from the Greek skià = shadow and lyticós = dissolvent) optical effect, hence the name 'shadowless lamp', consists of the total elimination of the shadows in the operating field. The structures of the ellipse (D400) and the parabola (Saturno and Tris) are designed especially to reflection thousands of dot-like luminous rays indirectly upon the operating field, allowing the removal of any form of shadow.

## COLOUR TEMPERATURE

Where visual work is critical, precision and productivity are important and an artificial light must be very "white", similar to the light of the day between 4.000/4.500 °K to give the surgeon a relaxing and concentrating effect as well. The "sunlight" treatments, applied to the ellipse and "dichroic" to the parabola, increase the colour temperature to 4.200 °K, guaranteeing white light similar to sunlight.



### DEEP LIGHT

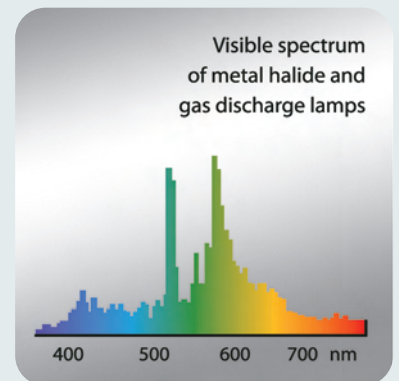
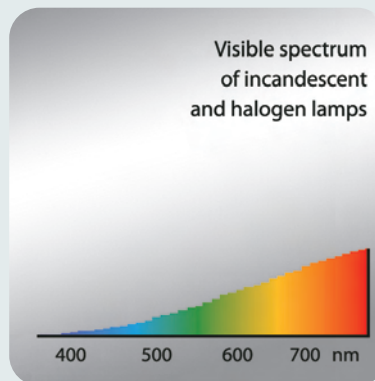
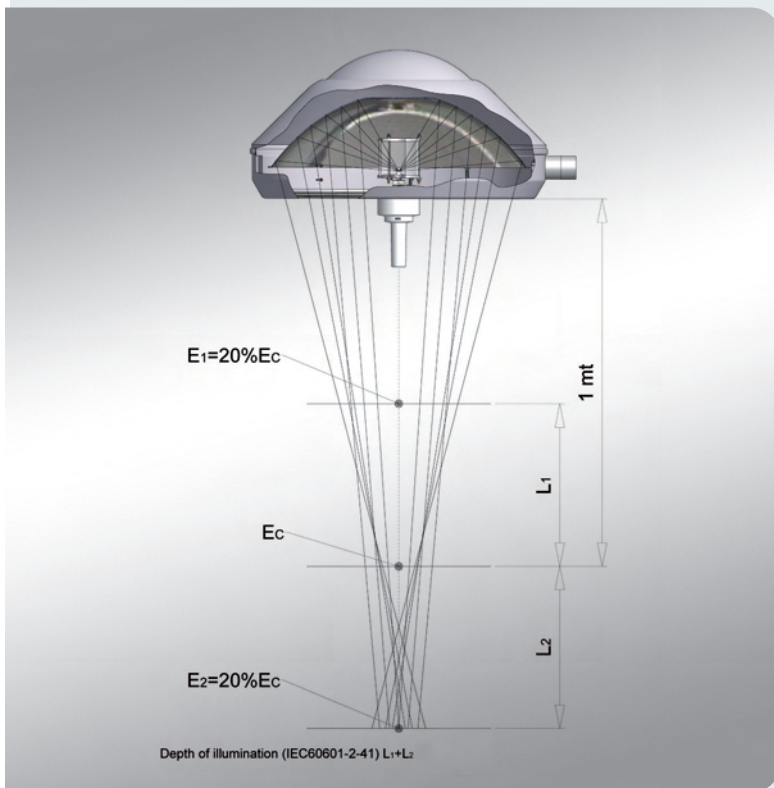
The depth of light illuminates the cavity three-dimensionally, also helping to highlight the smallest details. The geometry of tens of connected ellipsoids directs the luminous rays into a cone of light, illuminating in depth.

### COLD LIGHT

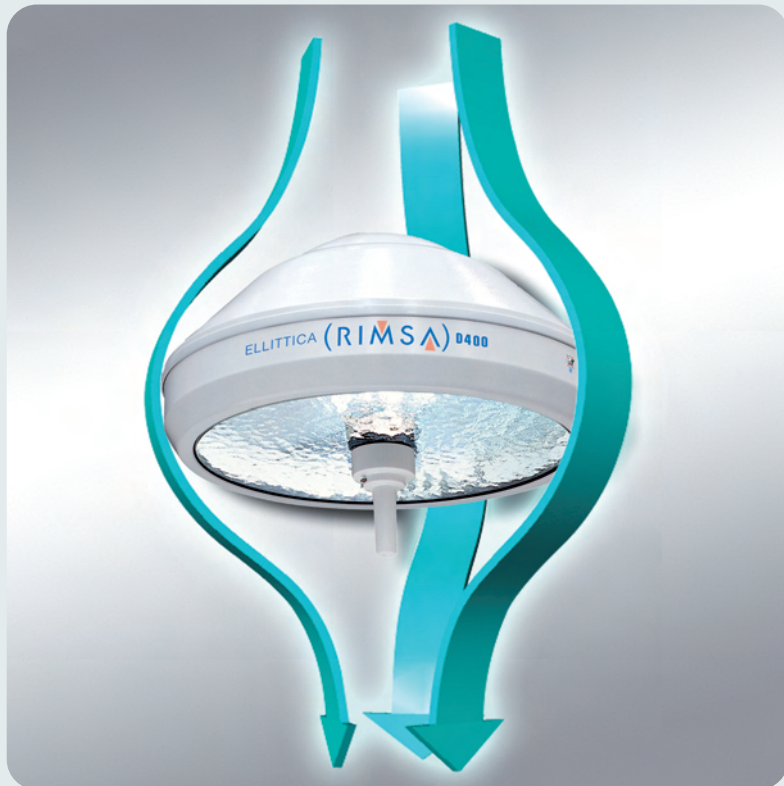
The fundamental prerogative of an excellent shadowless lamp is its "cold" light, avoiding dehydration of the tissues during the operation and rendering the surgeon's work comfortable. Special "RMS97 filters" (D400) and the "Dichroic treatment" (Saturno and Tris) eliminate the infrared rays generated by the halogen lamp, guaranteeing cold light.

### VISIBLE WAVELENGTH

The wavelength of the halogen lamp is uniform in the visible spectrum and is not subject to continuous bands of radiation. On the other hand, gas discharge lamps emit a luminous spectrum formed by multiple lines or bands of radiations, a phenomenon caused by the interval between continuous electric discharges inside the cylindrical quartz tube (bulb of the lamp). RIMSA uses halogen lamps because the visible emission spectrum is the closest to the sun light.







### LAMINAR FLOW

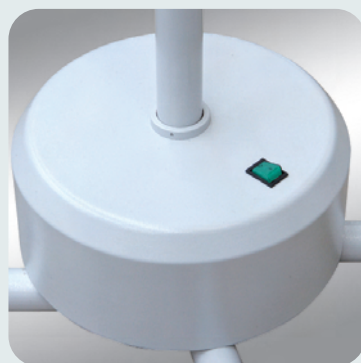
The two-satellite solution is particularly advised for operating theatres with laminar flow. In this case the reduced dimensions of the cupolas does not interfere with the laminar flow.

### ELLIPTIC REFLECTOR

In aluminium, consisting of tens of conneted ellipsoids joined together. The "elliptic" form allows obtaining excellent luminous intensity with a low energy halogen lamp and the reflected light is always in focus. The elliptic reflector has a treatment "mirror" to increase reflection and a treatment "sun-light" to raise the colour temperature to 4200K with an index of chromatic yield equal to 94.

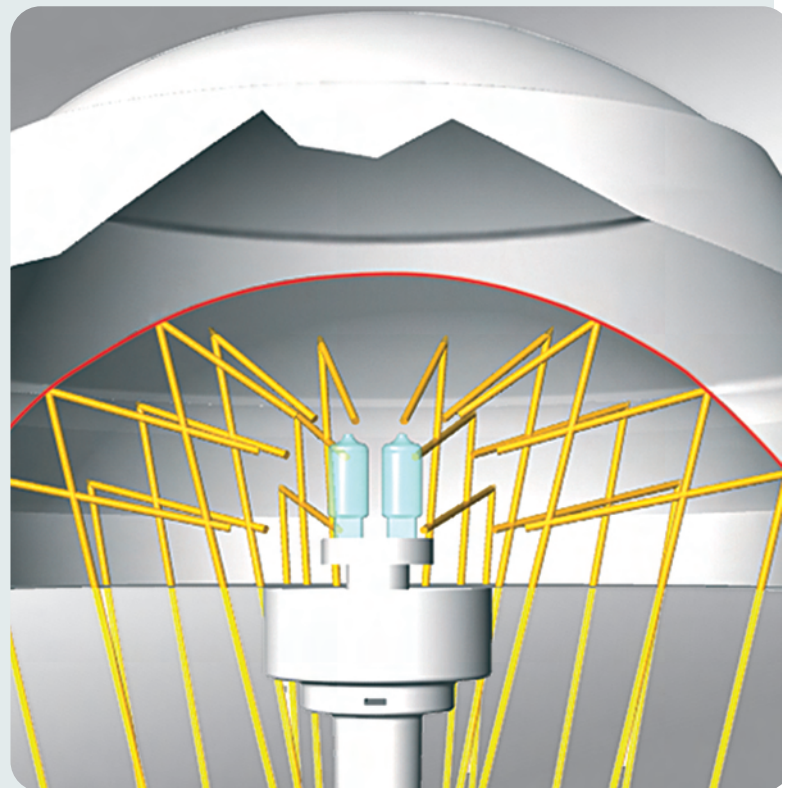
### SUPPORT BATTERY

Every lamp can be equipped with a support unit consisting of batteries, battery charger and electric circuit. It has an autonomy of 1 hour and recharging time of 6 hours. The battery unit is supplied in a 24x18x37H cm container, the batteries are lead, hermetically sealed and do not require maintenance. In the mobile lamp version the battery is built in the base of the lamp.



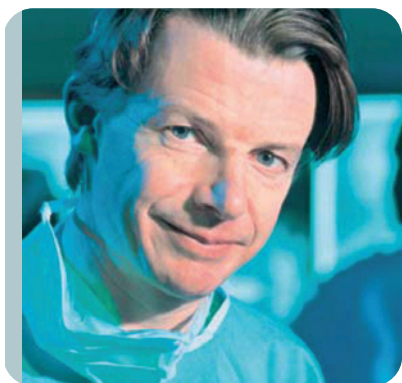
### DLE DEVICE

On request it is possible to fit the DLE device, consisting of an electronic commutation card and reserve lamp. In case of damage to the main lamp, the electronic card instantaneously commutes the switching of the reserve lamp on and an intermittent green telltale led switches on to signal the damage and request the substitution of the burnt-out lamp.





D400 ceiling



The D400 series is a high technology apparatus designed to guarantee technical-illumination performance, unique of its kind. The reduced dimensions and the lightness of the reflector give the product stability and make it extremely easy to handle. The luminous beam is always in focus, starting from a minimum distance of 60 cm. The diameter of the field illuminated is regulated manually by rotating the handle, which can be sterilised, at the centre of the reflector. The luminous intensity can be adjusted electronically. The D400 series is a secondary lamp advised for surgery. In the two-satellite version the continuity of light is guaranteed by the satellite in case of damage to the bulb. A diffusion screen in tempered glass protects the luminous source.

They are apparatuses conforming to the 93/42 CEE Medical Devices directive and marked CE as a Class I medical device.





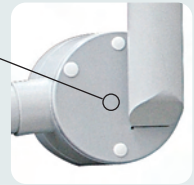
D400x2

### ROTATION WITHOUT STOPPING

The central and lateral rotations are at 360° without stopping. Transmission of current takes place through sliding contacts produced in RIMSA.

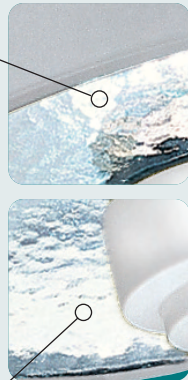
### VERTICAL MOVEMENT

The vertical arm has 97° dispersal and a 1455 mm range. Balance takes place with a compression spring and can be adjusted if this becomes necessary over time. It is light and special bronze bearings render it stable in every position.



### DEPTH

The "elliptic" reflector reflects the luminous rays generated by the bulb over the operating field in dotted form to guarantee constant focus and three-dimensional light. Thanks to this principle the light is always in focus starting from a distance of 60 cm from the reflector.

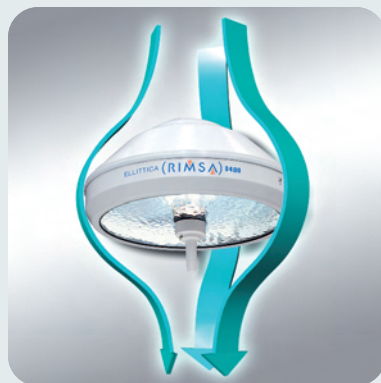
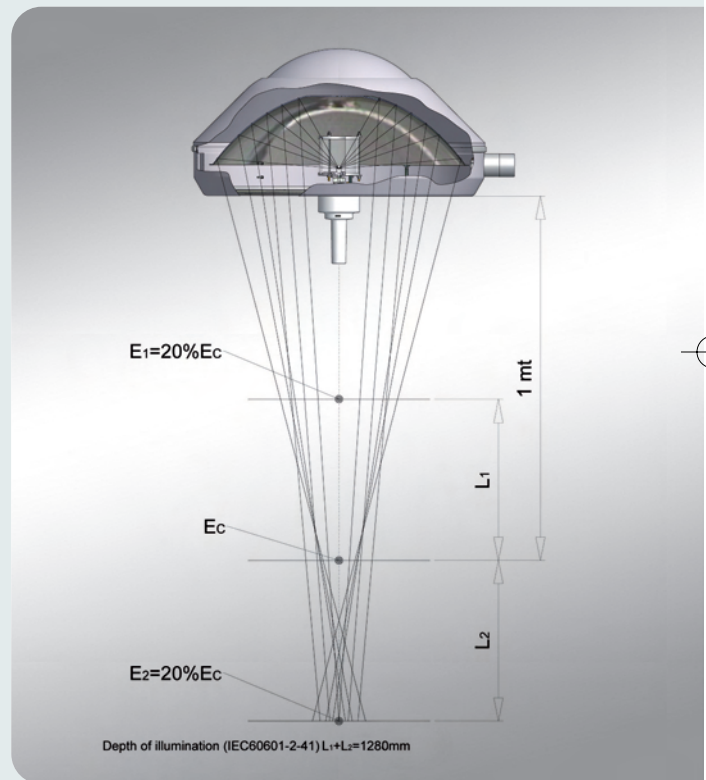


### COLD LIGHT

Special "RMS97" filters eliminate the infrared rays generated by the halogen lamp, avoiding dehydration of the tissues during the operation and rendering the surgeon's work comfortable.

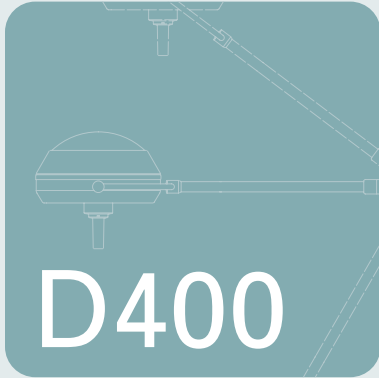
### ELLIPTIC REFLECTOR

In aluminium, consisting of tens of connected ellipsoids. The "elliptic" form allows obtaining excellent luminous intensity with a low energy halogen lamp and the reflected light is always in focus. The elliptic reflector has a treatment "mirror" to increase reflection and a treatment "sun-light" to raise the colour temperature to 4.200K with an index of chromatic yield equal to 94.



### LAMINAR FLOW

The two-satellite solution is particularly advised for operating theatres with laminar flow. In this case the reduced dimensions of the cupolas does not interfere with the laminar flow.



# D400



D400  
for wall



### STRUCTURE IN

### ALUMINIUM

The load-bearing "light-struct" structure of the lamp is in aluminium tubing with a diameter of 45 mm. This detail facilitates installation without the aid of mechanical lifts, making the product suitable for any type of ceiling and easy to manoeuvre, facilitating the dispersion of heat.



### LUMINOSITY ADJUSTOR

The luminous intensity is adjusted electronically by 20,000 lux at maximum intensity. The surgeon can set the luminous intensity desired in relation to the type of operation.







### DLE DEVICE

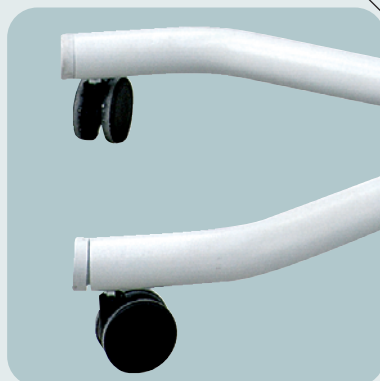
On request it is possible to fit the DLE device, consisting of an electronic commutation card and reserve lamp. In case of damage to the main lamp, the electronic card instantaneously commutes the switching of the reserve lamp on and an intermittent green telltale led switches on to signal the damage and request the substitution of the burnt-out lamp.



D400  
mobile

### ROTATION AT 10°

The floor lamp version has been designed to be rotated 10° on the vertical stand without needing to rotate the base. This technical solution makes it particularly indicated for places where for logistic reasons it is difficult to move the base with wheels.



### ANTI-STATIC WHEELS WITH BRAKE

The mobile floor lamp version is equipped with standard equipment with four anti-static wheels of which two with brake.



**RIMSA shadowless lamps satisfy the requisites of “quality light”**

The D600 series is a high technology apparatus designed to guarantee technical-illumination performance, unique of its kind. Complex mathematical calculations have allowed the creation of the original and revolutionary stratified and in-depth multi-elliptical reflector for intense light without shadows.

The reduced dimensions and the lightness of the reflector give the product stability and make it extremely easy to handle. Special RMS97 filters eliminate the infrared rays generated by the halogen lamp, guaranteeing cold light.

The luminous beam is always in focus, starting from a minimum distance of 60 cm.

The diameter of the field illuminated is regulated manually by rotating the handle, which can be sterilised, at the centre of the reflector. The luminous intensity can be adjusted electronically. The D600 series is supplied with a switchover reserve bulb in case the main bulb breaks.

The reserve bulb, with the identical characteristics of the main bulb, allows continuing the operation without diminution in luminous intensity.

In the two-satellite version D600 is classified as a system. Rapid engagement handle able to be sterilised at 134°C. A diffusion screen in tempered glass protects the luminous source. Rotation at 360° without stopping on the central and lateral axes with the transmission of current through sliding contact tracks.

They are apparatuses conforming to the 93/42 CE Medical Devices directive and marked CE as a Class I medical device.



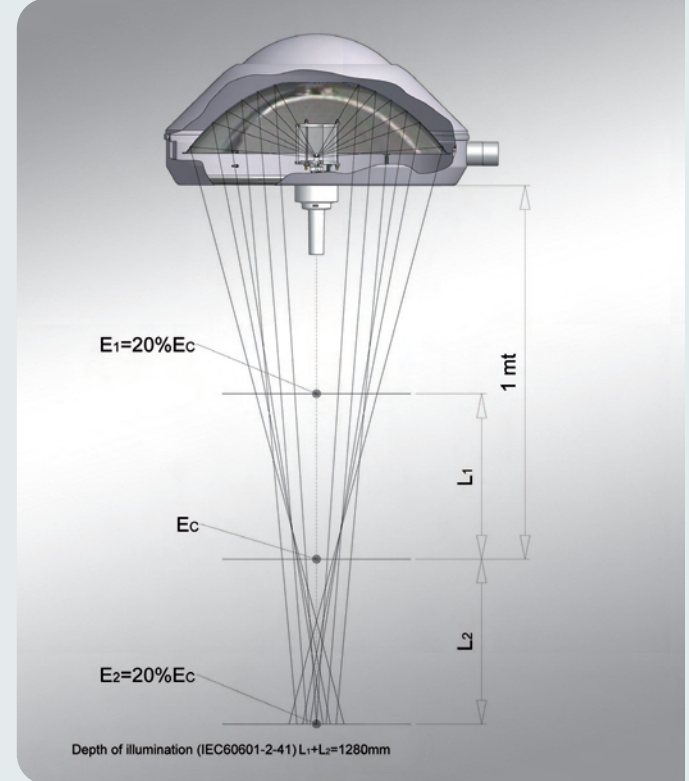


**COLD LIGHT**  
Special "RMS97" filters eliminate the infrared rays generated by the halogen lamp, avoiding dehydration of the tissues during the operation and rendering the surgeon's work comfortable.



**DEPTH**

The "elliptic" reflector reflects the luminous rays generated by the bulb over the operating field in dotted form to guarantee constant focus and three-dimensional light. Thanks to this principle the light is always in focus starting from a distance of 60 cm from the reflector.



**LAMINAR FLOW**  
The two-satellite solution is particularly advised for operating theatres with laminar flow. In this case the reduced dimensions of the cupolas does not interfere with the laminar flow.

**LUMINOSITY ADJUSTOR**

The luminous intensity is adjusted electronically by 40,000 lux at maximum intensity. The surgeon can set the luminous intensity desired in relation to the type of operation.

**STRUCTURE IN ALUMINIUM**  
The load-bearing "light-struct" structure of the lamp is in aluminium tubing with a diameter of 60 mm. This detail facilitates installation without the aid of mechanical lifts, making the product suitable for any type of ceiling and easy to manoeuvre, facilitating the dispersion of heat.

**ELLIPTIC REFLECTOR**  
In aluminium, consisting of tens of connected ellipsoids joined together. The "elliptic" form allows obtaining excellent luminous intensity with a low energy halogen lamp and the reflected light is always in focus. The elliptic reflector has a treatment "mirror" to increase reflection and a treatment "sunlight" to raise the colour temperature to 4300K with an index of chromatic yield equal to 94.

**SUPPORT BATTERY**

Every lamp can be equipped with a support unit consisting of batteries, battery charger and electric circuit. It has an autonomy of 1 hour and recharging time of 6 hours. The battery unit is supplied in a 60x40x85H cm container, the batteries are lead, hermetically sealed and do not require maintenance. Support units with different autonomies can be supplied on request.

**DLE DEVICE**

The DLE device consists of the electronic switchover circuit card and the reserve bulb. In the case of damage to the main lamp, the electronic circuit card switches the reserve bulb on instantly and a visual telltale signals the damage to request the substitution of the burnt out lamp.

**VERTICAL MOVEMENT**

The vertical arm has 95° dispersal and a 1400 mm range. Balance takes place with a compression spring and can be adjusted if this becomes necessary over time. It is light and special bronze bearings render it stable in every position. **ROTATION WITHOUT STOPPING**  
The central and lateral rotations are at 360° without stopping. Transmission of current takes place through sliding contacts produced in RIMS.A.



D1200

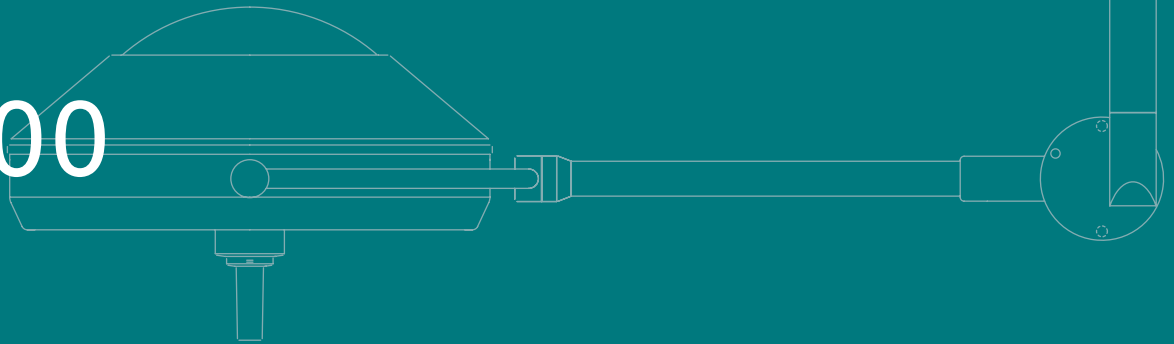


Illumination for operating theatre with reflected optics system "SHADOWLESS" double floodlight

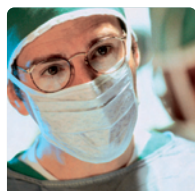
RIMSA,  
quality light

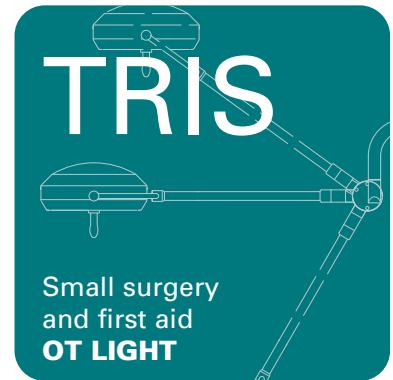


# D1000



Illumination for operating theatre  
with reflected optics system  
"SHADOWLESS" double floodlight





TRIS  
mobile



This is a shadowless lamp with exceptional technical performance and excellent flexibility of use, particularly indicated for small surgery, gynaecological and first aid surgeries. The cupola is of reduced dimensions with three internal parabolae in optical glass with a parabolic arc that allows suppressing the shadows and obtaining in-depth light. Extremely easy to handle and stable in position. Focusing and adjusting the diameter of the illuminated area takes place by rotating the handle, which can be sterilised, at the centre of the reflector. Adjustable friction bearings are mounted on every articulation of the lamp. In the case of damage to a bulb, the other two parabolae always assure illumination. The bulb is easy to change even by non-specialised personnel. On request it can be supplied with a support unit consisting of batteries and battery charger with 1-hour autonomy.

Class I medical device, marked CE in conformity with medical devices 93/42 CEE directive.





TRIS  
for ceiling

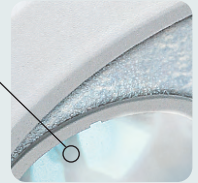
### COLD LIGHT

The parabolas in optical glass are vacuum treated with deposit of thin layers to filter the infrared rays (heat) and allow issuing cold light onto the operative field, to avoid dehydration of the tissues during the operation and to render the work of the surgeon comfortable.



### CONTINUITY OF LIGHT

In the case of a bulb burning out, the other two parabolas guarantee the light.



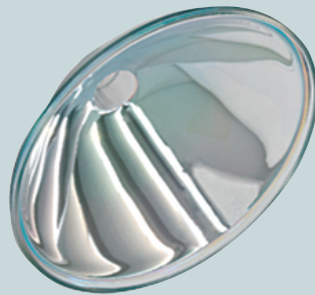
### DEPTH

The luminous rays generated by the bulb are reflected from the parabola in dotted form to suppress the shadows and obtain a three-dimensional depth of light.



### ROTATION AT 10°

The floor lamp version has been designed to be rotated 10° on the vertical stand without needing to rotate the base. This technical solution makes it particularly indicated for places where for logistic reasons it is difficult to move the base with wheels.



### ANTI-STATIC WHEELS WITH BRAKE

The mobile floor lamp version is equipped with standard equipment with four anti-static wheels of which two with brake.

### STRUCTURE IN ALUMINIUM

The load-bearing "light-struct" structure of the lamp is in aluminium tubing with a diameter of 45 mm. This detail facilitates installation without the aid of mechanical lifts, making the product suitable for any type of ceiling and easy to manoeuvre, facilitating the dispersion of heat.



TRIS  
for wall



### VERTICAL MOVEMENT

The vertical arm has 97° dispersal and a 1455 mm range. Balance takes place with a compression spring and can be adjusted if this becomes necessary over time. It is light and special bronze bearings render it stable in every position.



SATURNO  
ceiling



This is a shadowless type lamp indicated for small surgery, gynaecological and first aid surgeries. An aluminium reflector dissipates the filtered heat externally. A filter protects the parabola assuring a colour temperature of 3.500K. The luminous intensity is 40.000 lux at a distance of a metre, while the diameter of the illuminated field is about 15 cm. The parabolic arc allows suppressing the shadows and obtaining in-depth light. It does not need to be focused. Extremely easy to handle and stable in position. Adjustable friction bearings are mounted on every articulation of the lamp. The bulb is easy to change even by non-specialised personnel. For environments where continuity of electric power is not guaranteed, we advise purchasing the battery unit with automatic recharge, autonomy 1 hour and recharging time 6 hours.

IEC 60601-2-41 regulations, class I medical device, marked CE in conformity with medical devices 93/42 CEE directive.





**SATURNO**  
for wall

**STRUCTURE IN ALUMINIUM**

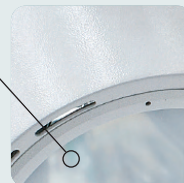
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**COLD LIGHT**

The parabola in optical glass is vacuum treated with deposit of thin layers to filter the infrared rays (heat) and allow issuing cold light onto the operative field, to avoid dehydration of the tissues during the operation and to render the work of the surgeon comfortable.

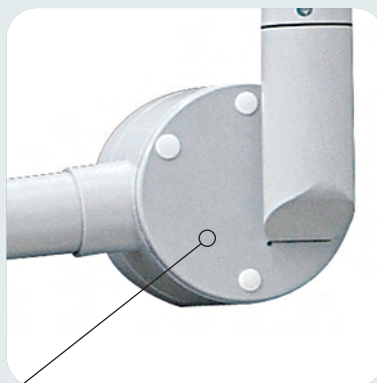
**DEPTH**

The luminous rays generated by the bulb are reflected from the parabola in dotted form to suppress the shadows and obtain a three-dimensional depth of light.



**ROTATION WITHOUT STOPPING**

The central and lateral rotations are at 360° without stopping. Transmission of current takes place through sliding contacts produced in RIMSA.



**VERTICAL MOVEMENT**

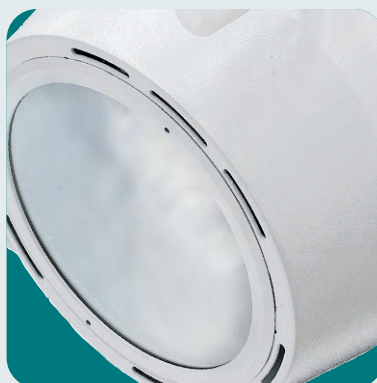
The vertical arm has 97° dispersal and a 1455 mm range. Balance takes place with a compression spring and can be adjusted if this becomes necessary over time. It is light and special bronze bearings render it stable in every position.

**ROTATION AT 10°**

The floor lamp version has been designed to be rotated 10° on the vertical stand without needing to rotate the base. This technical solution makes it particularly indicated for places where for logistic reasons it is difficult to move the base with wheels.



**SATURNO**  
mobile

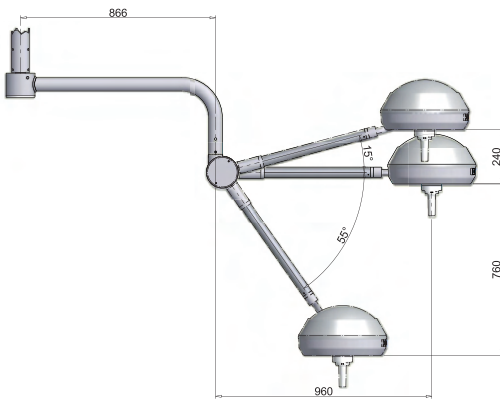


**ANTI-STATIC WHEELS WITH BRAKE**

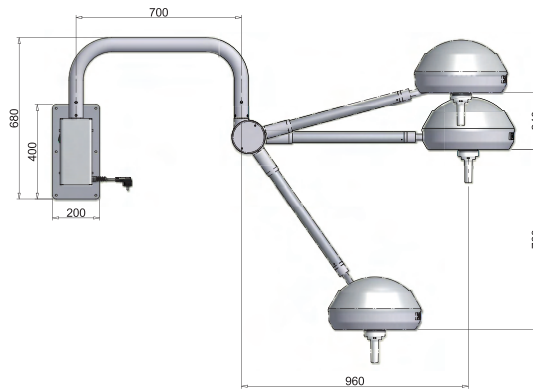
The mobile floor lamp version is equipped with standard equipment with four anti-static wheels of which two with brake.

D400 / Tris / Saturno

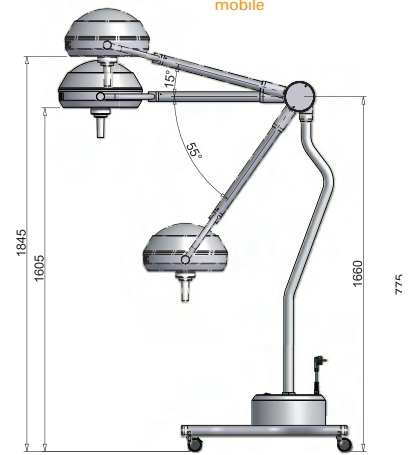
ceiling



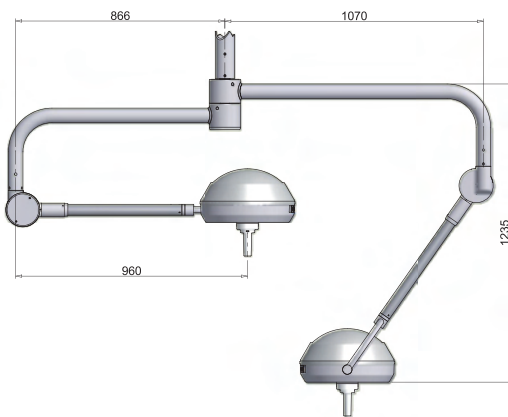
wall



mobile



D400x2 main+satellite



Technical Data

PERFORMANCES

Light intensity at 1 m distance (Ec)	Klx	1
Color temperature of radiated energy	°K	4
Color rendering Index (CRI)	Ra	9
Light field diameter where the illuminance reaches 50% of Ec (d50)	mm	9
Light field diameter where the illuminance reaches 10% of Ec (d10)	mm	1
Depth of illumination IEC 60601-2-41 (L1+L2) at 20%	mm	1
Total radiated energy Ee where the illuminance reaches max level	W/m <sup>2</sup>	2
Ratio between radiated energy Ee and illuminance Ec	mW/m <sup>2</sup> -lx	2
Radiated UV energy with wavelength less than 400nm	W/m <sup>2</sup>	5

ELECTRICAL DATA

Power transformer a.c. 50/60Hz	VA	2
Electrical absorption	VA	1
Lamp tipe	V-W	2
Average lamp life <sup>1</sup>	h	2
Control of the illuminance		d

GENERAL DATA

Color		F
Minimum height of the room	cm	2
Directive		9
Norms		II
Classification of product		n

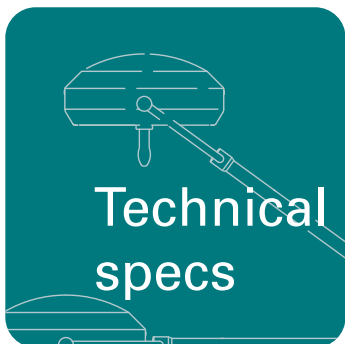
DIMENSIONS

Out reflector diameter	cm	4
Elliptic reflector diameter	cm	3
Useful lighting surface	cm <sup>2</sup>	7
Weight (Ceiling/Wall/Mobile)	Kg	3

OPTIONAL

DLE device:		0
commutation with reserve bulb when main bulb is damaged		0
Battery group with automatic charger,		0
free maintenance battery		0
TVCC camera arm		0
Power transformer for different voltage		0

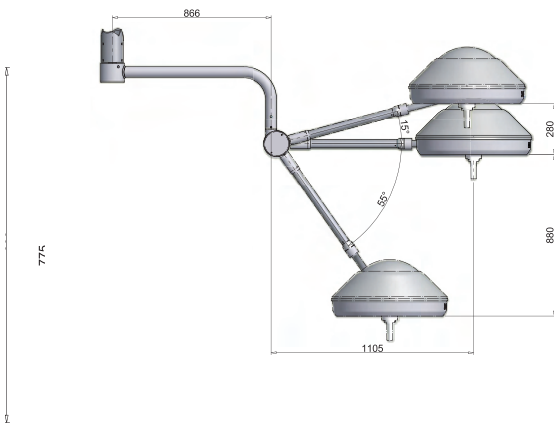
1. the average lamp life could change in consideration of different suggested voltage, peak of tension and frequency of utilization.



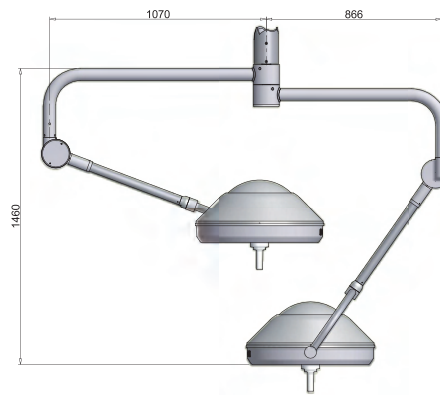


D600 / D1200 / D1000

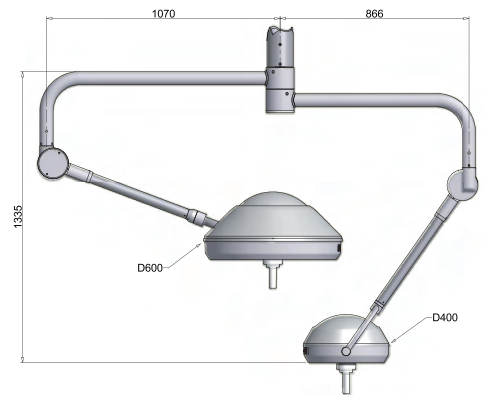
D600



D1200



D1000



	D400	D400x2	D600	D1200 D600+D600	D1000 D600+D400	TRIS	SATURNO
	100	100+100	150	150+150	150+100	50	40
	4200	4200	4200	4200	4200	4000	3500
	94	94	94	94	94	94	94
	94	94	110	110+110	110+94	84	78
	180	180	230	230+230	230+180	160	150
	1145	1145	1280	1280+1280	1280+1145	1350	1280
	230	230+230	490	490+490	490+230	170	190
	2,3	2,3+2,3	3,7	3,7+3,7	3,7+2,3	3,4	4,75
	5,2	5,2+5,2	7,2	7,2+7,2	7,2+5,2	2,3	1,9
	200	2x200	230	230+230	230+200	100	100
	120	120+120	190	190+190	190+120	90	90
	24 - 100	24 - 2x100	24 - 150	24 - 150+150	24 - 150+100	12 - 25	12 - 75
	2000	2000+2000	2000	2000+2000	2000+2000	3000	1500
	digital	digital	digital	digital	digital	—	—
	RAL 9003	RAL 9003	RAL 9003	RAL 9003	RAL 9003	RAL 9003	RAL 9003
	270	270	299	289	279	270	270
	93/42/EEC	93/42/EEC	93/42/EEC	93/42/EEC	93/42/EEC	93/42/EEC	93/42/EEC
	IEC60601-2-41	IEC60601-2-41	IEC60601-2-41	IEC60601-2-41	IEC60601-2-41	IEC60601-2-41	IEC60601-2-41
	med. dev. Class I	med. dev. Class I	med. dev. Class I	med. dev. Class I	med. dev. Class I	med. dev. Class I	med. dev. Class I
	40	40+40	63	63+63	63+40	40	23
	34	34+34	56	56+56	56+34	3x12	16
	740	740+740	2310	2310+2310	2310+740	340	200
	35/28/38	56	45	45+45	45+35	34/27/37	26/22/31
	on demand	on demand	equipped	equipped	equipped (op. D400)	—	—
	on demand	on demand	on demand	on demand	on demand	on demand	on demand
	on demand	on demand	on demand	on demand	on demand	—	—
	on demand	on demand	on demand	on demand	on demand	on demand	on demand

All lighting performances ± 10%

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