



Operation
Maintenance
Troubleshooting

Version 1.1, Jan/11



ViuluxLED

INDEX

Dear Customer	3
Product Description	3
Important Information	4
General Data	7
Technical Specifications	10
Special Care or Particular Conditions for Installation	10
Transportation and Storage Conditions	11
Packing Environment Conditions	11
Operation Environment Conditions	11
Product Symbols	12
Packing Symbols	12
Dimensions	13
Operation	16
Activating the Light	16
Programming the Light	16
Head Movement	17
Cleaning	18
Cleaning the Shield and LEDs	18
Cleaning the Equipment	18
Maintenance	19
Recommendations for the Dental Equipment Maintenance	19
Precautions	19
Warranty	20
Troubleshooting	21
Final Considerations	21

DEAR CUSTOMER

Congratulations! All of us at Summit Dental Systems want you to know that your Viulux LED operating light has been built with the finest materials available. The assembly and testing was completed by technicians devoted to making Summit Dental Systems products perform to all prescribed specifications. We appreciate your support and look forward to meeting your future professional needs through our expanding product line.

This manual is a general presentation of your product and it will give you important details to help you solve possible problems. Please read this manual thoroughly and store it for future reference.

PRODUCT DESCRIPTION

This light was designed for dental use. Standard features include intensity adjustments up to 30,000 Lux, smooth movements, and in a standard white color that is compatible with all environments.

The head is made of a resistant material. It swivels 620° providing lightness, durability and wide mobility in all the positions.

The activation of the light is performed through a wave of the hand under the sensor, located below the head. The light can also be activated through the foot control if it is mounted onto the Biscayne E.L. Dental Chair. The Wall Mounted, Ceiling Mounted, and Chair Mounted models are activated through the sensor on the head.

The Viulux LED is composed by a new light emission system, using LED technology. This abbreviation is the acronym for Light Emitting Diode, a completely different form of emitting light, when compared to conventional devices with halogen light. Apart from being longer lasting (more than 50,000 hours) and with low electrical consumption, the LEDs have become the most compact ergonomic devices, with easy installation and transportation.

The light comes with bilateral handles that allow for isolation to avoid the risk of cross contamination. The LED's shield is made of resistant transparent material to protect it from aerosol sprays. The steel arm provides vertical and horizontal movements and has rounded corners. It is coated with a highly smooth finish and is easily cleaned and disinfected.

The structure is made out of steel that is surface treated with nanotechnology and painted in a highly smooth paint with an epoxy base. The high gloss paint is based on epoxy, cured in an oven at 482°F (250°C) with phosphate treatment making it resistant to corrosion and cleaning materials.

IMPORTANT:

- This equipment is for dental use only. It must be operated and utilized by a specialized professional (certified professional, according to the legislation of the country) and following the instructions of the manual.
- It is the user's responsibility to only use instruments that are in perfect condition and to protect themselves, the patients, and others from dangerous situations.
- After the equipment has completed its life-cycle, this equipment must be disposed of in an appropriate area (according to the legislation of the country).
- To guarantee the safe functioning of your equipment, use only the Summit Dental Systems assembly configurations (Dental Chair, Delivery Units, Assistant's Instrumentation, and Dental Light) supplied by Summit Dental Systems authorized dealers/technicians.

IMPORTANT INFORMATION

Guidance and manufacturer's declaration – electromagnetic emissions

The Viulux LED light is intended for use in the electromagnetic environment specified below. The customer or the user of the Viulux LED light should assure that it is used in such an environment.

EMISSION TEST	COMPLIANCE	ELECTROMAGNETIC ENVIRONMENT GUIDANCE
RF Emissions CISPR 11	Group 1	The Viulux LED light uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF Emissions CISPR 11	Class B	The Viulux LED light is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic Emissions IEC 61000-3-2	Class A	
Voltage Fluctuations/ flicker emissions IEC 61000-3-3	Complies	


Guidance and manufacturer's declaration – electromagnetic immunity

Viulux LED light is intended for use in the electromagnetic environment specified below. The customer or the user of the Viulux LED light should assure that it is used in such an environment.

IMMUNITY TEST	IEC 60601 TEST LEVEL	COMPLIANCE LEVEL	ELECTROMAGNETIC ENVIRONMENT GUIDANCE
Electrostatic Discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines ± 1 kV for input/output lines	Main power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	± 1 kV differential mode ± 2 kV common mode	Main power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5% U_T (> 95% dip in U_T) for 0,5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles < 5% U_T (> 95% dip in U_T) for 5 sec	< 5% U_T (> 95% dip in U_T) for 0,5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles < 5% U_T (> 95% dip in U_T) for 5 sec	Main power quality should be that of a typical commercial or hospital environment. If the user of the Viulux LED light requires continued operation during power mains interruptions, it is recommended that the Biscayne Chair be powered from an uninterrupted power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE: U_T is the a.c. mains voltage prior to application of that test level.

IMPORTANT INFORMATION

Guidance and manufacturer's declaration – electromagnetic immunity			
The Viulux LED light is intended for use in the electromagnetic environment specified below. The customer or the user of the Viulux LED light should assure that it is used in such an environment.			
IMMUNITY TEST	IEC 60601 TEST LEVEL	COMPLIANCE LEVEL	ELECTROMAGNETIC ENVIRONMENT GUIDANCE
<p>Conducted RF IEC 61000-4-6</p> <p>Radiated RF IEC 61000-4-3</p>	<p>3 Vrms 150 kHz to 80 MHz</p> <p>3 V/m 80 MHz to 2,5 GHz</p>	<p>3 Vrms</p> <p>3 V/m</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the Viulux LED light, including cables, than the recommended separation distance calculated from equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = 1.2 \sqrt{P}$ $d = 1.2 \sqrt{P} \text{ 80 MHz to 800 MHz}$ $d = 2.3 \sqrt{P} \text{ 800 MHz to 2,5 GHz}$ <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters as determined by an electromagnetic site survey^a should be less than the compliance level in each frequency range^b.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol</p> 
<p>NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.</p> <p>NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and peoples.</p>			
<p>^a Fields strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateurs radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To access the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Viulux LED light is used exceeds the applicable RF compliance level above, the Viulux LED light should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Viulux LED light.</p> <p>^b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.</p>			

IMPORTANT INFORMATION

Recommended separation distance between portable and mobile RF communications equipment and the Viulux LED light

The Viulux LED light is intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Viulux LED light can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Viulux LED light as recommended below, according to the maximum output power of the communications equipment.

RATED MAXIMUM OUTPUT POWER OF TRANSMITTER W	SEPARATION DISTANCE ACCORDING TO FREQUENCY OF TRANSMITTER m		
	150 kHz to 80 MHz $d = 1.2 \sqrt{P}$	80 MHz to 800 MHz $d = 1.2 \sqrt{P}$	800 MHz to 2,5 GHz $d = 2.3 \sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

GENERAL DATA

Equipment Maintenance

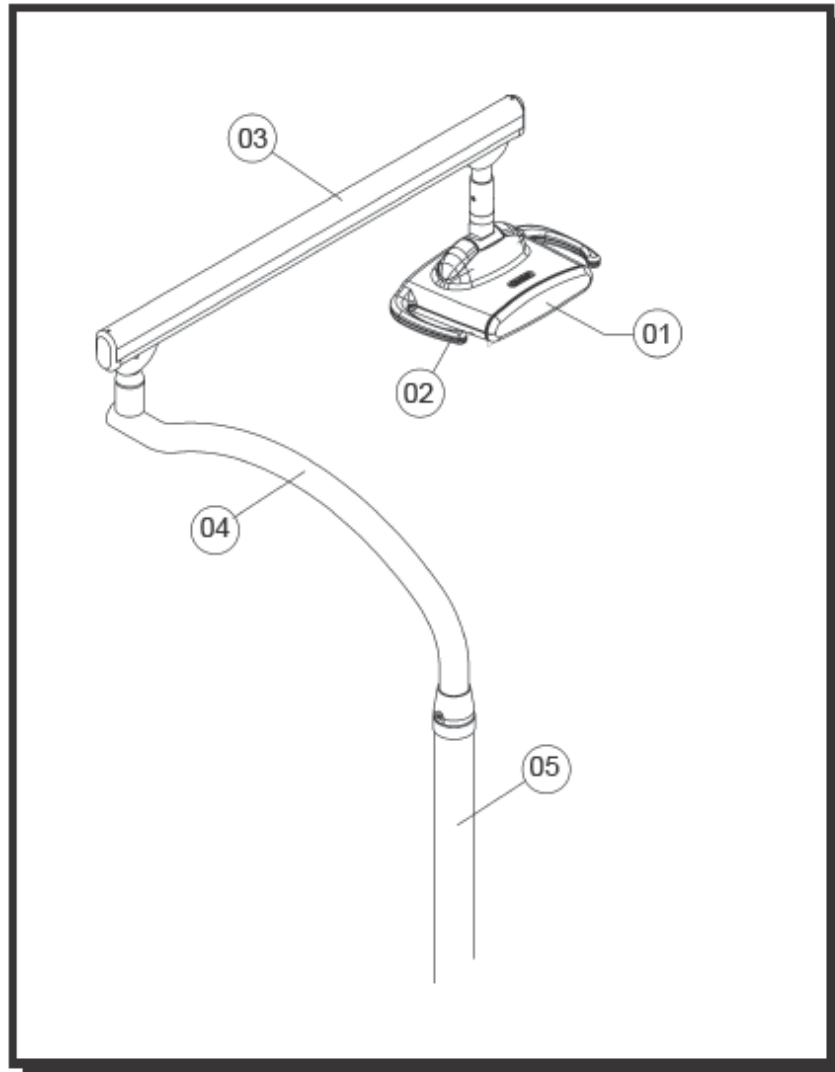
The unit requires no preventive maintenance, but in the occurrence of any problem that cannot be solved with the information in this manual, request the presence of an authorized Summit Dental Systems technician.

Parts Lists and Circuit Diagrams

Summit Dental Systems declares that the provision of circuit diagrams, parts list, or any other information that provide technical assistance to the user, may be requested, provided that it's previously agreed between the User and Summit Dental Systems.

GENERAL DATA

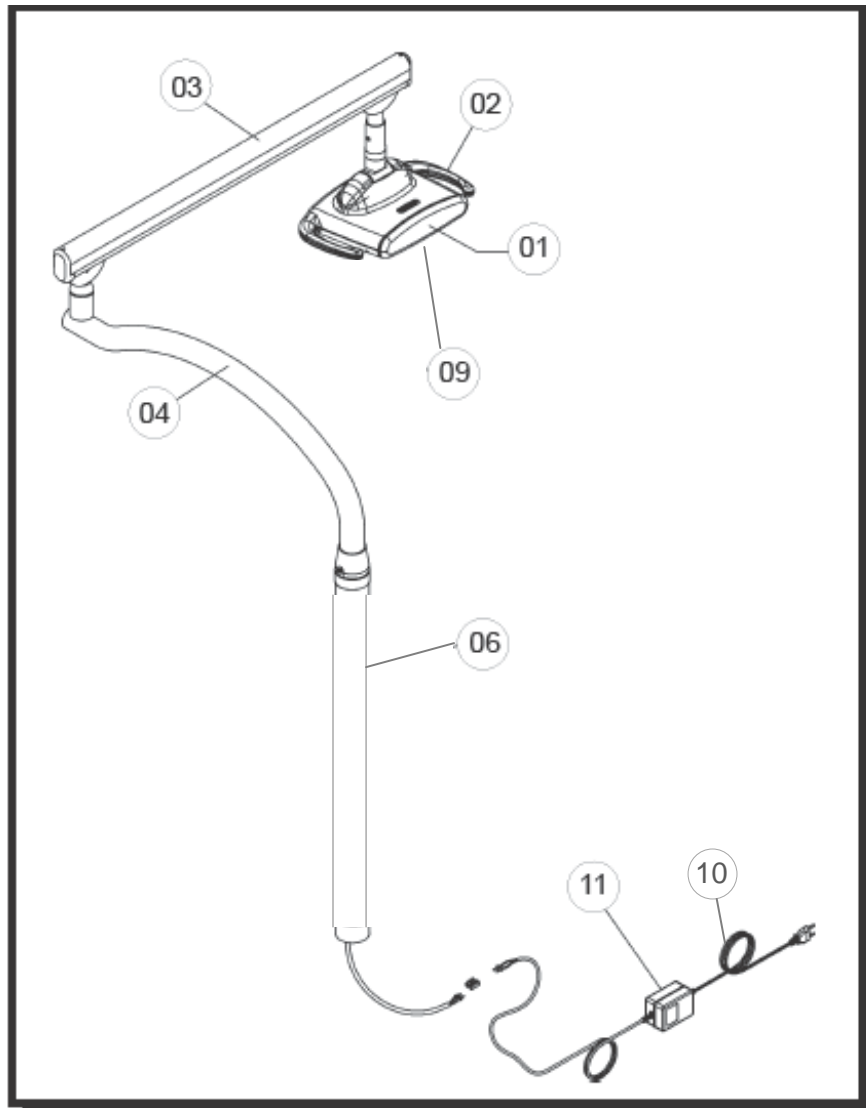
Viulux LED Light – 5 LEDs



- 01) Shield
- 02) Handle
- 03) Articulated Arm
- 04) Rigid Arm
- 05) Column

GENERAL DATA

Viulux LED Light – 5 LEDs (Mounted to the Dental Set)



01) Shield

02) Handle

03) Articulated Arm

04) Rigid Arm

06) Post

09) On/Off Sensor

10) I-Sheng IS-14 10A 125V 18awgx3c Power Cable

11) Astrodyne Switching Power Supply

P/N: AMP5001-08

TECHNICAL SPECIFICATIONS

- **Type of protection against electric shocks**
Class I Equipment
- **Operation mode**
Continuous
- **Protection against harmful water penetration**
IPX 0
- **Degree of protection against electric shocks**
Type B part applied
- **Power Supply Voltage:**
11.5 V~ and 14.5 V~ (coming from the electronic board of the dental set)
Ceiling, Wall, and Chair Mounted
24 Vdc x 1.5A (5 LEDs)
(coming from the power supply source)
- **Feed**
115 V~
- **Frequency**
60 Hz
- **Input power**
60VA
- **Protection Fuses**
(deriving from the dentist's chair)
 - **Biscayne**
F1 and F2 = 8A – retarded action Nominal current: 8A
Operating voltage : 250V~
Opening time: T
Breaking capacity: 35A
 - **Daytona**
F1 and F2 = 5A – retarded action Nominal current: 5A
Operating voltage : 250V~
Opening time: T
Breaking capacity: 35A
- **Activation Mounted on a Biscayne E.L. Chair**
Through the Biscayne E.L. Chair's foot control.
- **Activation Ceiling, Wall, and Chair Mounted**
Through the on/off sensor located on the head.
- **Brightness**
Minimum 10klux (± 20%),
Maximum 30klux (± 20%)
Note: Measured value on the operative area 23.6in (60cm) from the dental light
- **Net Weight**
19.2lb (8.70Kg)
- **Gross Weight**
26.5lb (12Kg)
- **Net Weight Mounted to the Dental Set**
18.7lb (8.5Kg)
- **Gross Weight Mounted to the Dental Set**
25.4lb (11.5Kg)
- **Distance between the head and the operative field**
27.6in (70cm)
- **Light Source**
LEDs

Special Care or Particular Conditions for Installation

- Check the electrical net, it must be compatible with the specified one in the equipment.
- Verify if the outlet is grounded; it must be turned off correctly.

Note: This information is also available in the Manual of Installation and Maintenance of the equipment that can be found with an authorized Summit Dental Systems technician.

TECHNICAL SPECIFICATIONS

Transportation and Storage Conditions

The equipment must be transported and stored with the following observations:

- Fragile! Should not suffer drop or receive impact.
- With the side of the arrow pointing upward.
- Keep it dry. Not to be exposed to rain, water drops, or wet floor.
- Keep it away from water and direct sunlight, and in its original wrapping.
- Do not transport on irregular surfaces.
- Observe the maximum stack quantity specified on the packaging.
- Transportation and storage temperature range: 10.4°F (-12°C) to 131°F (55°C).
- Transportation and storage relative humidity range: 32°F (0°C) to 194°F (90°C).
- Atmospheric pressure range: 500hPa to 1060hPa (375 mmHg to 795 mmHg).

Packing Environment Conditions

- Environment temperature range: 41°F (5°C) to 113°F (45°C)
- Environment temperature range recommended by Summit Dental Systems: 59°F (15°C) to 86°F (30°C)
- Relative humidity range: 30% to 75% (non-condensing)
- Atmospheric pressure range: 700hPa to 1060hPa (525 mmHg to 795 mmHg)

Operation Environment Conditions

- Environment temperature range: 50°F (10°C) to 95°F (35°C)
- Environment temperature range recommended by Summit Dental Systems: 69.8°F (21°C) to 78.8°F (26°C)
- Relative humidity range: 30% to 75% (non-condensing)
- Atmospheric pressure range: 700hPa to 1060hPa (525 mmHg to 795 mmHg)

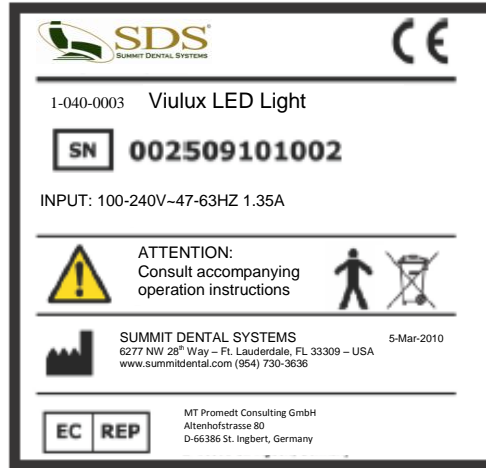


WARNING:

Do not try to repair or assemble defective or inoperative parts, nor replace original parts with another manufacturer parts. Summit Dental Systems does not supply other manufacturer's electrical and mechanical parts. Only Summit Dental Systems or an authorized technician can repair this equipment using original spare parts. The operation safety and the technical specifications shall be valid only if original spare parts were used.

According to law, the manufacturer shall be held responsible for the equipment's safety only if the maintenance, repairs and changes were carried out by Summit Dental Systems or by an authorized technician, provided that the latter followed the directions specified by Summit Dental Systems.

TECHNICAL SPECIFICATIONS



Viulux LED Light

Product Symbols



Warning



Ground (in various parts of equipment) indicates the condition of being grounded



B Type Equipment

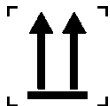
Packing Symbols



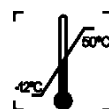
The equipment must be protected from exposure to direct sun light during storage and transportation.



Equipment must not get wet, rained on, or placed on a wet floor during transportation or storage.



Package to be transported and stored with the arrows up.



Temperature limit for storing and transportation of package



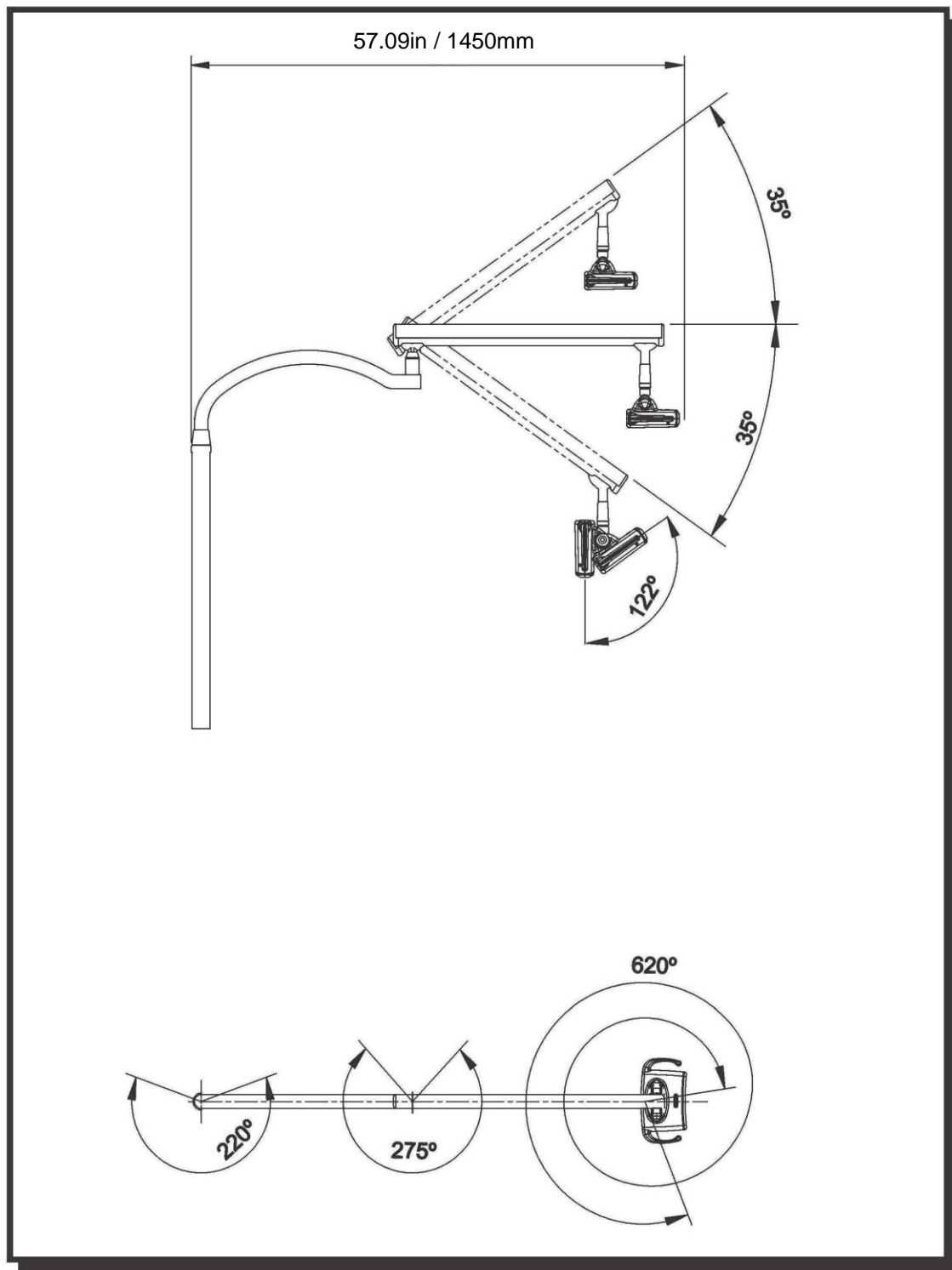
Maximum stacking determines the maximum number of boxes that can be stacked during transportation and storage. Do not double stack.



Package to be transported and stored with care (fragile! Should not suffer drops or receive impact).

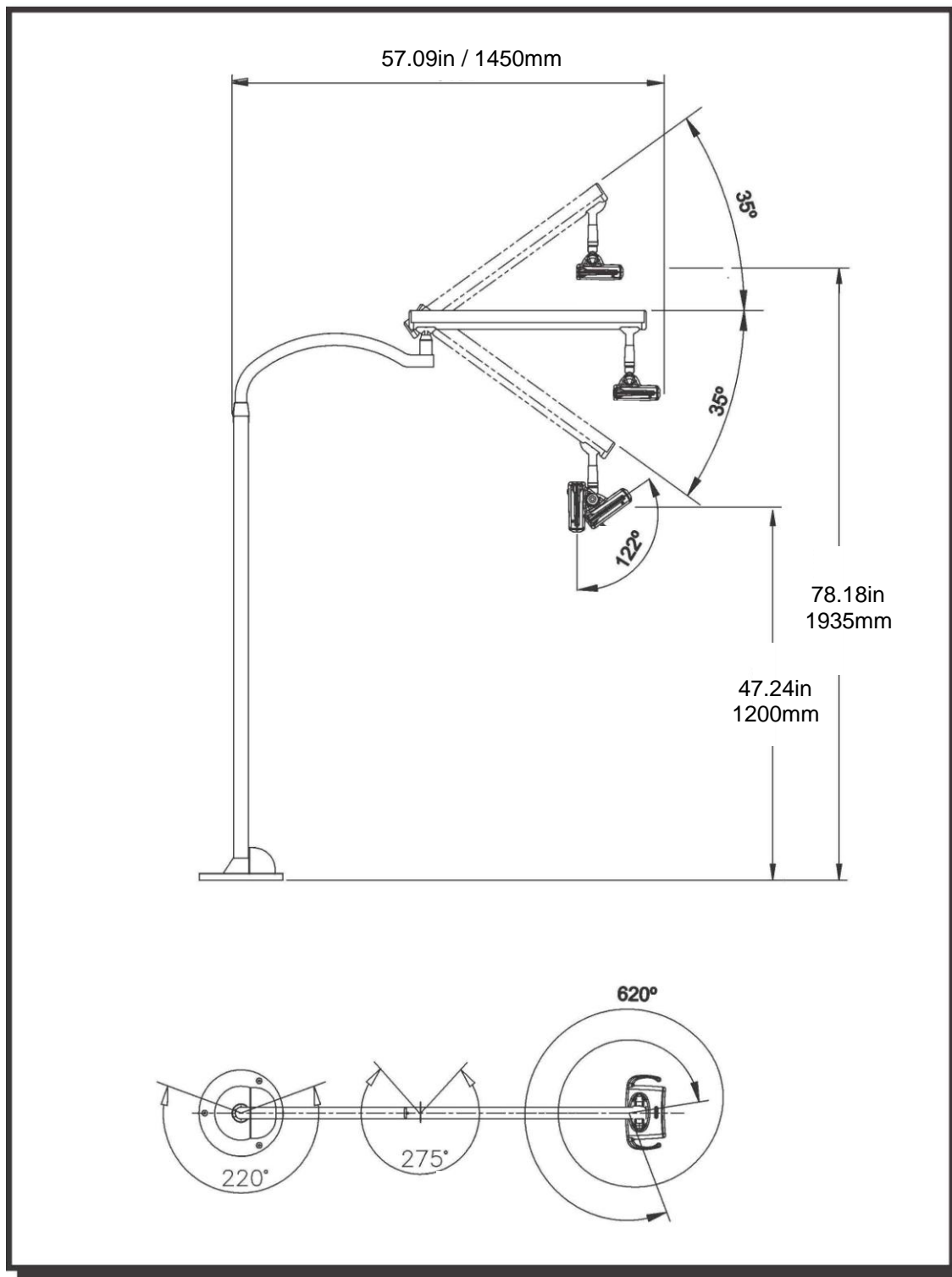
TECHNICAL SPECIFICATIONS

Dimensions (inches /mm)



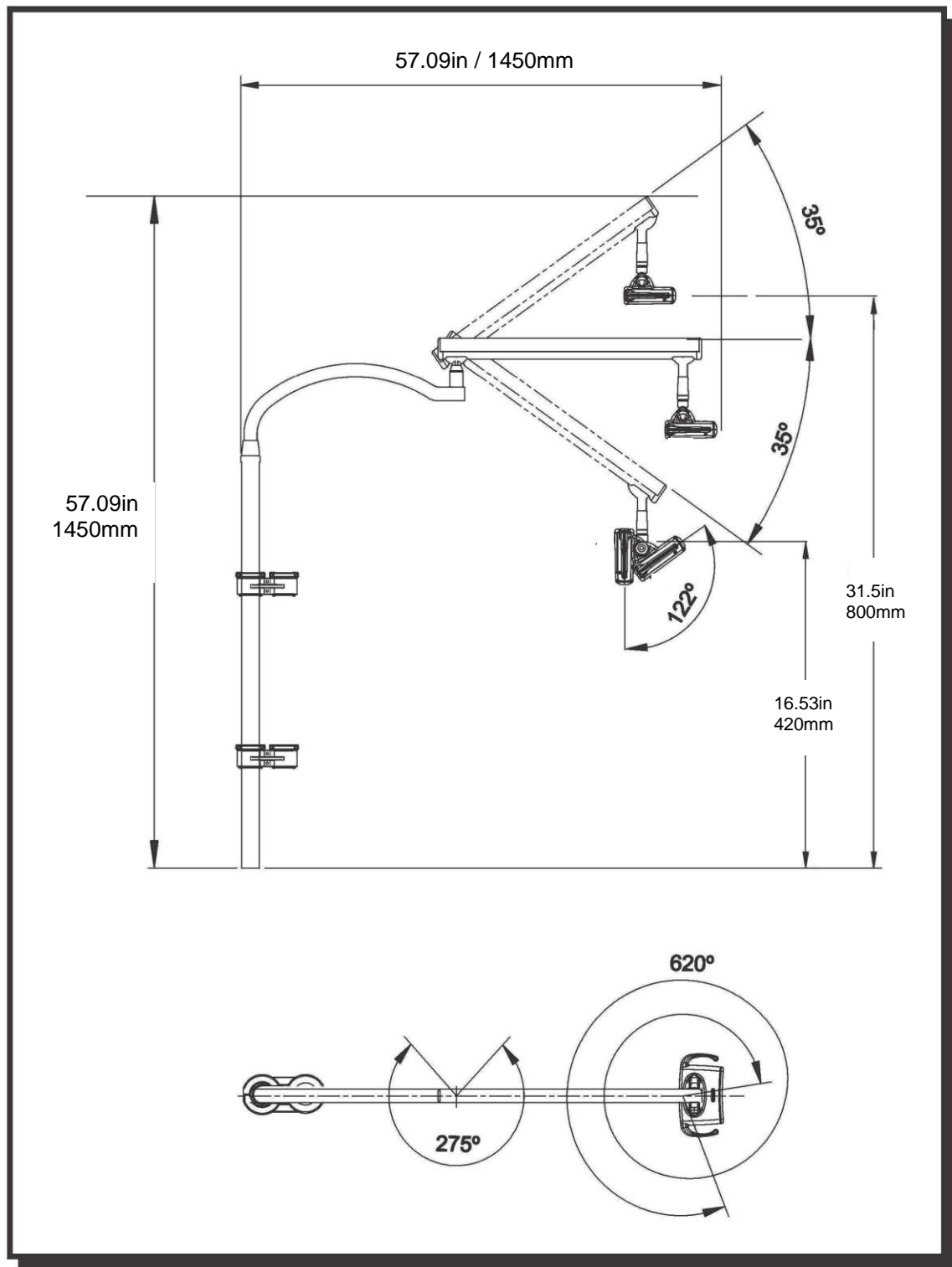
TECHNICAL SPECIFICATIONS

Dimensions (inches/mm)



TECHNICAL SPECIFICATIONS

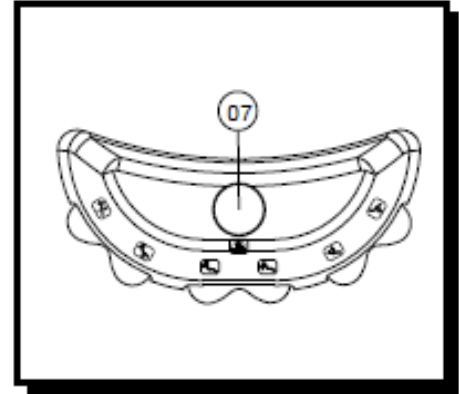
Dimensions (inches/mm)



OPERATION

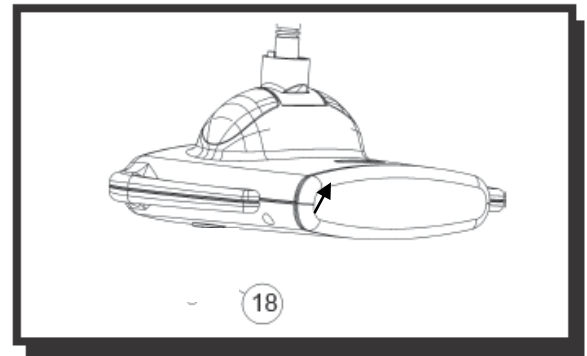
Activating the Viulux LED that is mounted to the Biscayne E.L. Dental Chair

To turn-on the light, press the button (07). To change the intensity, keep it pressed. The intensity will increase or diminish gradually, according to the specifications of the light. To turn off, press the button again.



Activating the Viulux LED that is ceiling, wall, or chair mounted

To turn on the light, just activate the on/off sensor (18) located below the light head by waving your hand near the sensor. To turn off, activate the sensor again.



Programming of the Viulux LED

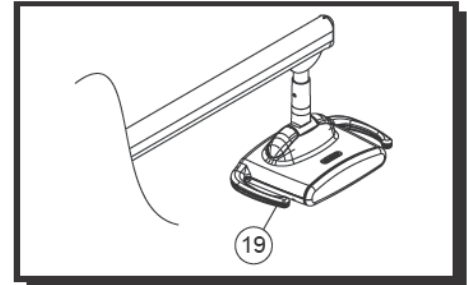
- 1) When the light is powered up, the LEDs will also power up at the same intensity it was last saved in.
- 2) Wave your hand below the sensor and the light turns off the LEDs. Wave your hand again below the sensor and the LEDs will turn on again.
- 3) To access the programming mode so that the light intensity can be changed, follow these steps:
 - With the light on, hold your hand in front of the sensor for about 4 seconds. A beep will indicate that the software has entered the programming mode. You may now remove your hand from the sensor; the first light intensity change has occurred.
 - To continue changing the intensities of the light, just keep waving your hand by the sensor until the desired intensity is reached.
 - With the intensity chosen, wait for 6 seconds for the software to record it and leave the programming mode. This occurs through a new beep.
 - The sequence of light intensities for model 5 LEDs is: HIGH> MIDDLE> LOW> HIGH.....
- 4) After exiting the programming mode, the light will return to operation only in on/off function.

OPERATION

Head Movement

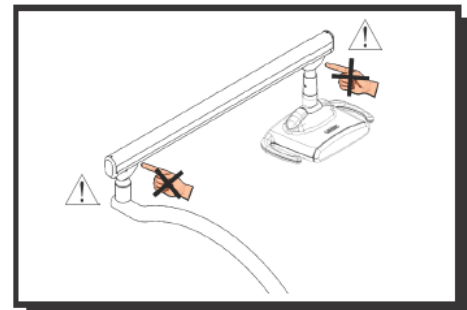
The handle (19) turns the light vertically and horizontally.

Important: Position the head 27.6in (70cm) from the operative field.



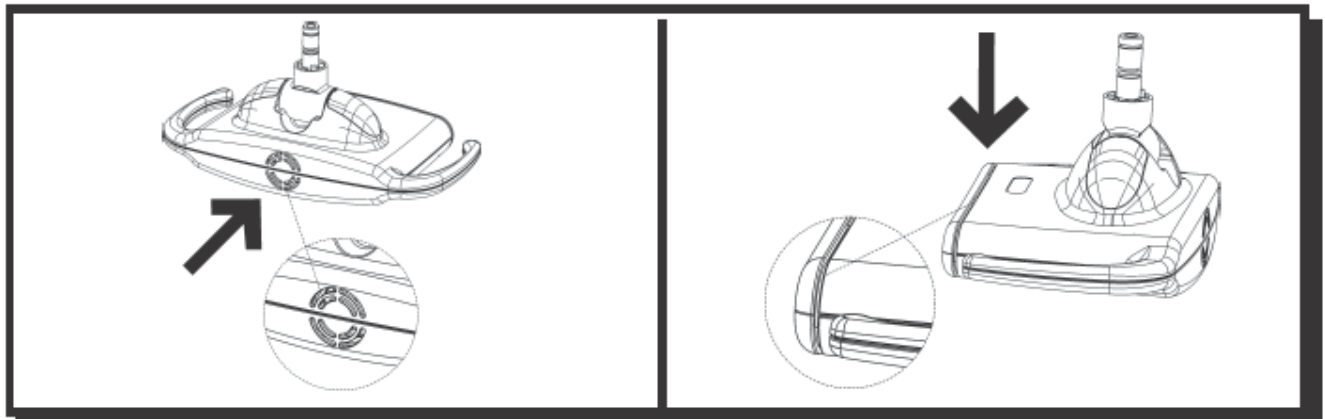
WARNING:

When handling the equipment, be careful of the parts that could pinch fingers as illustrated.



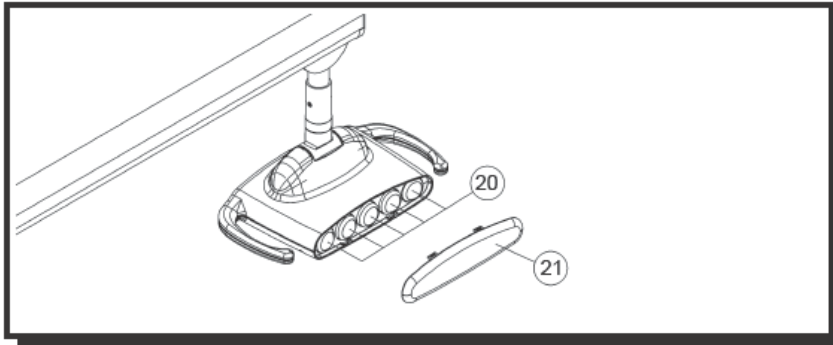
ATTENTION:

Do not obstruct the Viulux LED light's ventilation openings.



CLEANING

! Cleaning of the Shield and LEDs



Applying a small amount of force, pull out the shield “system click”.

The cleaning of the shield (21) and the LEDs (20) must be done using just a damp flannel or cotton (dampened with water). Never use any chemical products to clean these parts, as they could cause stains and scratch components.

NOTE: We recommend that the LEDs are cleaned every 6 months.

! Cleaning of the Equipment

Reflective Lens & Plastic Shield Cleaning

The Viulux LED, like everything in a dental office, needs to be cleaned.

The very nature of the materials in the plastic shield is contrary to the application of harsh chemicals. Therefore a common sense approach for use and care is suggested.

Chemical Disinfecting

Because there are hundreds of cleaners, conditioners, and disinfectants available, it is impossible for manufacturers to test them all. The manufacturer of the cleaner or disinfectant to be used should be contacted to state whether or not the disinfectant will damage equipment surfaces.

Unacceptable Disinfectants

The following chemicals may damage equipment surfaces and finish:

- Alcohol based solutions
- Acetone
- Bleach
- Phenol
- Iodophors
- Foam spray products

NOTE: The Summit Dental Systems warranty does not cover damage to equipment caused by cleaning and disinfectant solutions.


MAINTENANCE

Recommendations for the Dental Equipment Maintenance

Your Summit Dental Systems equipment has been designed and developed according to the standards of modern technology. Similar to other kinds of equipment, it requires special care, which is many times neglected due to several reasons and circumstances.

Therefore, here are some important reminders for your daily routine. Try to follow these simple rules, which will save you a lot of time and will avoid unnecessary expenses once they become a part of your working procedures.

PRECAUTIONS

-  Certify the correct voltage when you switch on your apparatus at the electricity: 120 VAC.
- Install your equipment in a proper place protected by solar rays and humidity.
- Turn off when not in use.

WARRANTY

Summit Dental Systems (SDS) warrants its products against defects in materials or workmanship from the date of shipment to the Buyer as follows:

Summit Dental Systems (SDS) Equipment:

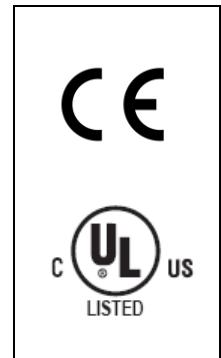
Chairs, Delivery Units, Cuspidors, Lights
 Control Block Diaphragm (part of Delivery Unit)
 All Upholstery, Stools, all Plastic Covers, and Cabinets

Warranty Period:

5 Years
 Lifetime
 1 Year

Summit Dental Systems' sole obligation under the warranty is to provide parts for repair, or at its option, to provide a replacement product (excluding all labor and shipping fees). "In any action, BUYER'S remedies are limited to the warranty described above. BUYER shall not be permitted to claim lost profits, reliance, special, incidental, or consequential damages in any proceedings." The warranty does not cover damage from improper installation or maintenance, accident, or misuse. The warranty does not cover damage resulting from the use of cleaning disinfecting or sterilization chemicals and processes. Failure to follow instructions provided in Summit Dental Systems' Operation and Installation Manuals (Owner's Guides) may void the warranty. In the event Warranty service must be performed to correct any defect, only an authorized Summit Dental Systems dealer may perform any and all warranty repairs. Any repairs by unauthorized dealers, technicians, or repairmen may void the warranty.

- In the case of a defective warranty item, a copy of the replacement invoice, model and serial number of the product under which it was replaced, and a description of symptoms of the defect must be returned with the part within 30 days of the replacement invoice date to Summit Dental Systems, 6277 NW 28th Way, Ft. Lauderdale, FL 33309, USA, in order to receive credit. Any and all expenses for freight, labor to perform warranty service, and purchase of spare parts are the responsibility of the buyer. Any fraudulent claims made may void the warranty. Any additional warranty that may be provided by an authorized Summit Dental Systems dealer is the sole responsibility of said dealer.
- SDS reserves the right to make changes or improvements on any products without being required to modify existing equipment in a like manner.



Please complete and retain for your records the following information:

In case of warranty part replacement/repair or when ordering a part, please call your authorized Summit Dental Systems dealer and have the following information available:

Owners' Name:	Phone #:
Model #:	SDS Serial #:
Dealer:	Phone:
	Purchase Date:

TROUBLESHOOTING

Problem	Probable Cause	Solution
<ul style="list-style-type: none">- Light is not working	<ul style="list-style-type: none">- Power is cut- Chair fuse is blown- Bulb is burnt out	<ul style="list-style-type: none">- Wait until power is back- Replace fuse(s)- Change bulb

ATTENTION:

Any other problem that could happen with this equipment should only be repaired by an authorized Summit Dental Systems technician.

Any misuse, negligence or maintenance not performed by an authorized Summit Dental Systems technician will result in the loss of the warranty.

FINAL CONSIDERATIONS

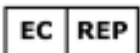
The most important aspect related to equipment care is that concerning spare parts. To guarantee the maximum life span of your equipment, use only **original Summit Dental Systems spare parts**. They are sure to follow the technical specifications and standards required by Summit Dental Systems.

We must also point out to you our network of authorized dealers. Only dealers within this network will be able to keep your equipment constantly new for they count on technical assistants who have been trained and possess specific tools for the correct maintenance of your equipment.

Questions and Information: Summit Dental Systems Call Center 1-800-275-3368.



Manufacturer/ Distributor:



MT Promedt Consulting GmbH
Altenhofstrasse 80
D-66386 St. Ingbert, Germany

