ENGLISH

9300XSP/9300XDP 300 Watt Xenon Light Source



Operation and Service Manual

LUXTEC

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TABLE OF SYMBOLS Found on Light Source



Attention: Consult Accompanying Documents



Caution: High Voltage



Brightness



Equipotentiality



Protective Earth

ON

OFF

С



Fuse



Type CF Equipment



High Temperature



Intensity

Alternating Current

CE

Meets requirements of the Medical Device Directive



Listed by CSA

GENERAL WARNINGS

The user of this Luxtec product should be thoroughly familiar and trained in the assembly, use and care of this product.

The user should carefully study the Operation and Service Manual before making any attempt to use the equipment in the clinical environment. Instructions should be followed specifically, with special attention given to warnings, controls and user specifications. The Manual should also be available to the appropriate personnel.

This Manual contains information about the proper procedures for inspecting and preparing this product before its use, and care and storage after use.

Follow the instructions and restrictions in the operating manuals of other manufacturer's equipment when they are used in conjunction with this product.

Before every procedure, carefully inspect the Light Source to ensure it has been properly maintained and cleaned, and that it is fully functional. DO NOT use if inspection reveals any damage such as cable cuts or loose connectors.

To reduce the risk of fire and electric shock, do not expose electrical equipment to moisture. When cleaning, do not immerse any electrical device in liquid.

SAFETY PRECAUTIONS MUST ALWAYS BE EXERCISED WHEN USING ELECTRICAL EQUIPMENT TO PREVENT OPERATOR/PATIENT SHOCK, FIRE HAZARD OR EQUIPMENT DAMAGE.

All electrical equipment must be used with approved hospital grade power cords and power plugs inserted properly into grounded AC power outlets.

This product must be removed from the surgical field prior to the use of a defibrillator.

The Light Source should never be used in ocular surgery or in a surgical procedure requiring direct illumination of the eye.

The Light Source produces high intensity light. Thermal burns can be the result of improper use of the Light Source or the light output of the light guide cable.

Use only fiber optic light guide cables that are approved for high intensity light output.

OVERVIEW

Indication for Use

This device is designed to supply high-intensity white light to a fiber optic cable for illumination of a surgical field or other area of examination or operation.

The 9300XDP and 9300XSP deliver 300-Watts of cool white IR filtered light. The lamp is housed in a lamp module that can be easily removed and replaced by the user without special tools.

OVERVIEW

An illuminated push-on and push-off power switch is located on the front panel. See Figures 1 and 2.

The rotating turret wheel is designed to accommodate the user's choice of 4 different light guide endfitting styles. The standard turret has ACMI, Olympus, Wolf and Storz adapter ports.

The intensity of the light output is controlled manually by the light intensity knob located to the right of the turret wheel.

The bulb life is indicated in hours of use on the front panel by a digital meter.

NOTE: You must use ONLY a Luxtec supplied lamp module assembly for replacement in this Light Source. Use of other lamps or lamp assemblies will void all warranties for this product. Refer to Parts List later in this manual.



Set Up and Inspection Before Use

The 9300XDP and 9300XSP Light Sources come with the power cord attached. Please verify that both components have been received undamaged.

All fiber optic light guides should be properly cleaned and sterilized prior to first time use. See light guide manufacturer's manual for information.

Warnings:

Do not use or store liquids on or above the Light Source.

Electric shock hazard. If unit is not functioning properly, DO NOT OPEN. Please refer to the Repair and Return Section of this Manual.

Explosion Hazard. Do not use in the presence of flammable anesthetics, liquids, vapors, gases or dusts.

Use care not to point any light guide directly at the eye while operating the Light Source.

Keep cooling vent and fans free of obstructions.

FIRE HAZARD: DO NOT DRAPE OR COVER THE LIGHT SOURCE WHILE IT IS OPERATING.

When Light Source is not in use, turn off the power, or rotate the turret 1/8 turn to block light output.

OPTIONAL FLOOR STAND ASSEMBLY







There are three (3) parts to the floor stand assembly: See Figure 3.

- 1. Casters base
- 2. Two-piece column
- 3. Swivel top base with interlocking adapter plate with cord hangers

To assemble the floor stand, remove the base from the box and stabilize it by placing a stop in front of one of the casters.

Assemble the two column sections as shown in *Figure 3*. One section of the column has an arrow that should point up as the stand is assembled. Slide the lower end of the top section over the upper end of the bottom section. Position the tapered end of the two piece column in the base. Be sure the nylon bushing in the upper section of the column is at the top.

Place the swivel top base through the nylon bushing. The base should rotate freely within this bushing.

Open the interlocking adapter on the swivel top base by pulling down on the plunger and sliding the lever to the "open" position as labeled. *See Figure 4*. The swivel top base is now ready to receive the Light Source.

Installation to Floor Stand

- 1. Place Light Source on the floor stand base so the front edge is up to the rim of the base. Verify that all rubber feet of the Light Source are positioned on the base.
- 2. Slide the interlocking adapter plate to the lock position. The plate plunger will snap into the locked position as shown in *Figure 5*.
- 3. Check the rear of the Light Source to be sure the floorstand plate captures the support plate underneath the Light Source and is secure.

Setting Up

Before turning power on the Light Source, make sure the unit is plugged into any standard 100V to 240V 50/60Hz (as appropriate) three-conductor outlet. Grounding reliability is guaranteed only when connected to a "hospital grade" receptacle.

LIGHT SOURCE OPERATION

Power on the Light Source

The power switch is located on the front panel. See *Figure 8.* Ignition clicking sounds are normal. Some light will show through the turret wheel and the fan outlets. When the power switch is pressed, it will light up indicating power is on. The Light Source is now ready to use.

Rotate turret wheel 1/8 turn to block light output. *See Figure 6.*

When finished using the Light Source, press the power switch again to turn off the unit.

Turret

The 9300XDP and 9300XSP Light Sources are equipped with a rotary turret. See Figures 6 and 7. This turret is to attach light guide cables for instrument or headlight use to the Light Source. Luxtec offers three turret options:

 Kit "T": ACMI, Wolf, Storz and Olympus (standard)
 Kit "P": ACMI, Wolf, Storz and Pilling
 Kit "D": Wolf, Storz, Designs for Vision and Olympus.

To operate the turret, rotate the wheel until the desired connection lines up with the light channel. When the fiber optic cable is inserted, a click can be heard indicating the cable is properly seated.

Light Attenuation

The 9300XDP and 9300XSP have a manually operated light intensity knob to control the desired light output level. To increase the light output, rotate the knob clockwise until the desired level is reached. *See Figures 6 and 7.*

NOTE: It is strongly recommended that the light intensity be adjusted to the minimum level of brightness for the procedure. There is a risk that prolonged exposure on one spot during surgery, at close proximity may cause an increase in tissue temperature. Minimum intensity levels and exposure will mitigate this occurrence.





LIGHT SOURCE OPERATION

Dual Port Mirror Mode (9300XDP only)

The 9300XDP has a knob on the front panel which indicates single or dual port capability. See *Figure 8*. The knob rotates to allow the operator to use the Light Source in a single or dual port mode.

NOTE: The second port is NOT a back-up port for the first port.

From the front panel symbols:

- Two yellow bulbs indicate two port operation.
- One yellow bulb and one black bulb indicates single port operation.



XENON LAMP MODULE REPLACEMENT

Note: Please adhere to appropriate safety precautions when performing lamp replacement. Only qualified Personnel should service this device. Protective facemask and gloves should be worn when replacing lamp module. Before changing the lamp module, turn power off and allow the Light Source to cool for at least fifteen (15) minutes.

Please read and comply with all precautions listed in the General Warnings section of this manual.

The Xenon Lamp Module should be replaced after 650 hours of use or if the lamp fails to start when the power is turned on.

NOTE: You must use ONLY a Luxtec supplied lamp module assembly for replacement in this Light Source. Use of other lamps or lamp assemblies will void all warranties for this product. Refer to Parts List later in this manual.

XENON LAMP MODULE REPLACEMENT





To remove:

- 1. Make sure power switch is turned off. Disconnect the power cord from the hospital grade receptacle.
- Allow the unit to cool down for a minimum of 15 minutes before replacing the lamp module. The lamp module may represent a burn hazard if not allowed to cool sufficiently prior to servicing the device.
- 3. Remove the two side screws and loosen the two quarter turn screws in the back of the unit. See *Figure 9*. Pull back on the top cover handle as indicated in *Figure 10A* and then pull up on the top cover to open as indicated in *Figure 10B*.
- 4. Firmly grasp the lamp module by the protective cover with one hand while pressing the release button with the other. Pull up to remove the assembly. See Figure 11. Do not use excessive force or prying tools.

XENON LAMP MODULE REPLACEMENT

To replace:

- 1. Replace the lamp module assembly only with a Luxtec provided lamp module assembly.
- 2. Firmly grasp the lamp module by the protective cover with one hand while pressing the release button with the other. Do not touch the glass surface of the lamp itself.
- 3. Line up the base with its mating piece and firmly press the lamp module into place. *See Figure 12.*
- 4. Disengage the release button to secure lamp in its proper position. The lamp module should not tilt or jiggle while in place.
- Pull the top cover down to close the Light Source (reverse movements shown in *Figure 10*) then push the cover toward the front of the unit to line up side screw holes. Replace side screws. Secure quarter turn screws in back of the unit by turning to the right.

After closing the unit, push the front panel power button to turn the unit on. Record the number of hours indicated by the digital lamp age meter on the front panel. Note: the Light Source must be operating to reset the digital lamp age meter. See Figure 13. A maintenance log sticker is located on the rear panel of the unit for convenient recording and tracking of this information.

After recording the hours of operation, the digital lamp meter may be reset by momentarily depressing the rear panel reset switch as shown in *Figure 13*. Turn the Light Source off after completing this procedure. Do not leave the unit operating while unattended.







TURRET CHANGE





How to change the turret

To remove current turret assembly:

- 1. Turn off Light Source. Unplug unit.
- 2. Rotate turret until Wolf port is lined up at 12 o'clock.
- 3. Through the Wolf port hole, remove the screw with a Phillips screwdriver.
- 4. Rotate turret so the Wolf large hole is over the opposite screw, at 6 o'clock.
- 5. Through this large hole, remove the second screw.
- 6. While pulling forward, gently remove the turret assembly.

To install a new turret assembly:

- 1. Push desired turret into hole in bezel. A small pin in the plate behind the cup will line up with a small hole in the turret cup. It will allow the cup to seat only one way.
- 2. Rotate turret until Wolf port is lined up at 12 o'clock.
- 3. Through the Wolf port, install one of the flat head screws (supplied with turret).
- 4. Rotate turret so the Wolf large hole is over the opposite screw, at 6 o'clock.
- 5. Through the Wolf port, install the second screw.
- 6. When secured, turret should not rock but should rotate freely.

Rotate turret to assure it is seated and secure. Light source is now ready to use.

TROUBLESHOOTING

Problem	Cause	Action
No light output	Light source not turned on Bad/no lamp Attenuator closed Turret mispositioned Blown fuse	Turn power on Check lamp seating/replace lamp module Check position of knob on front panel Rotate turret to desired adapter fitting Replace fuse as indicated in maintenance section
Reduced light output	Cable mismatched to turret Attenuator mispositioned Bad lamp	Rotate turret to matching adapter fitting Check position of knob on front panel Replace lamp module
No power	Light source not plugged in Top cover not closed	Plug in Light Source Close and secure top cover

MAINTENANCE AND CLEANING

Maintenance:

If the Light Source does not operate properly when connected to a grounded receptacle, check the fuse(s). Do not attempt to repair the unit if the lamp fails in use. Turn off the unit and allow it to cool for at least 15 minutes, then try to restart the unit. If the lamp still fails to illuminate, the lamp may be defective, the lamp has exceeded its useful life (see lamp replacement), or there is a power failure. Try replacing the lamp module. If you still experience difficulties, return the unit to Luxtec Corporation for evaluation.

Cleaning:

The Light Source can be cleaned and disinfected using 70% isopropyl alcohol. Unplug the power cord before cleaning. Allow 5 minutes for alcohol to evaporate before reconnecting to power.

To replace the fuse:

The fuse(s) for the Light Source is (are) located in the power entry module in the rear of the unit. Remove the power cord by unscrewing the cord lock from the back of the Light Source with a small screwdriver, then unplug the cord from the unit. Using the small flat screwdriver, pry out the red plastic back from the power entry module. Check to see if the fuse(s) is (are) blown, then replace with fuse(s) of the same rating (T6.3A 250V). To replace the red block in the housing, snap the retaining ring in place. Plug cord back into Light Source and retest the unit. If unit now works, replace the cord lock with screws previously removed to secure cord to unit.

SPECIFICATIONS

Lamp	
Туре	Xenon Short Arc Lamp
Wattage	300 Watts
Color Temperature	>6000 Kelvin, IR Filtered
Bulb Warranty	650 Hours, Prorated per Hour
Position	Horizontal ±15°
Light Source	
Dimensions	15"L x 12"W x 5"H
	(381mm L x 305mm W x 127mm H)
Weight	21 lbs. (9.5kg)
Power Input	100~240V AC 50 – 60 Hz
Circuit Protection	Fuse 6.3A 250V
Power Consumption	450 VA
AC Power Leakage	Leakage current to chassis (with ground wie
	intact), less than 100 microamps
	Leakage current to chassis (with ground wie
	interupted), less than 500 microamps
Classification	Type CF, Class 1
Electrical Safety	CSA Listed, Conforms to UL60601-1 and
	CSA C22.2 NO. 601.1
Electromagnetic Compatibility	EN60601-1-2:2001
Environment:	
OperatingTemperature	10°C – 40°C
Temperature Range	10°C – 40°C
Humidity	95% Relative Humidity Non-Condensing
	Maximum

Electromagnetic Compatibility (EMC) User Information -

WARNING: Medical Electrical Equipment needs special precautions regarding EMC and needs to be installed and put into service according to the Electromagnetic Compatibility [EMC] information provided in the accompanying documents.

WARNING: Portable and Mobile RF Communications Equipment can affect Medical Electrical Equipment.

WARNING: The equipment or system should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, the equipment or system should be observed to verify normal operation in the configuration in which it will be used.

<u>NOTE</u>: The EMC tables and other guidelines that are included in the Instruction Manual provide information to the customer or user that is essential in determining the suitability of the Equipment or System for the Electromagnetic Environment of use, and in managing the Electromagnetic Environment of use to permit the Equipment or System to perform its intended use without disturbing other Equipment and Systems or non-medical electrical equipment.

Table 201 Guidance and Manufacturer's Declaration – Emissions All Equipment and Systems

The **XSP/XDP** is intended for use in the electromagnetic environment specified below. The customer or user of the XSP/XDP should assure that it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Enforcement – guidance
RF Emissions CISPR 11	Group 1	The XSP/XDP 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 Radiated And Conducted Emissions	The XSP/XDP is suitable for use in all establishments including domestic, and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes. Conducted Emissions Tests Performed at both 240VAC, 50Hz And 120VAC, 60Hz
Harmonics IEC 61000-3-2	N/A	Equipment intended for Professional Use Only
Flicker IEC 61000-3-3	N/A	Equipment intended for Professional Use Only

Electromagnetic Compatibility (EMC) User Information

Table 202 Guidance and Manufacturer's Declaration—Immunity All Equipment and Systems			
The XSP/XDP is intended for use in the electromagnetic environment specified below. The customer or user of the XSP/XDP 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	±6kV contact ±8kV air	±6kV contact ±8kV air	Floors should be wood, concrete or ceramic tile. If floors are synthetic, the relative humidity should be at least 30%.
Electrical Fast Transient/burst IEC 61000-4-4	±2kV on AC Mains	±2kV on AC Mains	Mains power quality should be that of a typical commercial or hospital environment. Note - Tests Performed at both 240VAC, 50Hz and 120VAC, 60Hz
Surge IEC 61000-4-5	±1kV Differen tial ±2kV Common	±1kV Differential ±2kV Common	Mains power quality should be that of a typical commercial or hospital environment. Note - Tests Performed at both 240VAC, 50Hz and 120VAC, 60Hz
Voltage dips, Short interruptions and Voltage variations on power supply input lines IEC 61000-4-11	>95% Dip for 0.5 Cycle 60% Dip for 5 Cycles 30% Dip for 25 Cycles >95% Dip for 5 Seconds	>95% Dip for 0.5 Cycle 60% Dip for 5 Cycles 30% Dip for 25 Cycles >95% Dip for 5 Seconds	Mains power quality should be that of a typical commercial or hospital environment. If the user of the XSP/XDP requires continued operation during power mains interruptions, it is recommended that the XSP/XDP be powered from an uninterruptible power supply or battery. Note - Tests Performed at both 240VAC, 50Hz and 120VAC, 60Hz
Power Frequency 50/60Hz Magnetic Field IEC 61000-4-8	3A/m	3A/m	Power frequency magnetic fields should be that of a typical location in a typical commercial or hospital environment. Note - Tests Performed at both 50Hz and 60Hz

Electromagnetic Compatibility (EMC) User Information

Table 204 Guidance and Manufacturer's Declaration – Emissions Equipment and Systems that are <u>NOT</u> Life- Supporting			
The XSP/XDP is intended for use in the electromagnetic environment specified below. The customer or user of the XSP/XDP should ensure that it is used in such an environment.			
Immunity IEC 60601 Compliance Electromagnetic Environme Test Test Level Level		Electromagnetic Environment – Guidance	
Conducted RF IEC 61000-4-6	3 Vrms from 150 kHz to 80 MHz	V1 = 3 Vrms	Portable and mobile RF communications equipment should be separated from the XSP/XDP by no less than the recommended separation distances calculated/listed below: $D = (3.5/V1)\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	E1 = 3V/m	$D = (3.5/E1)\sqrt{P}$ 80 to 800 MHz $D = (7/E1)\sqrt{P}$ 800 MHz to 2.5 GHz
			 Where P is the maximum power rating in watts and D is the recommended separation distance in meters. Field strengths from fixed transmitters, as determined by an electromagnetic site survey, should be less that the compliance levels (V1 and E1). Interference may occur in the vicinity of equipment containing a transmitter.

Table 206 Recommended Separation Distances Between Portable and Mobile RF Communications Equipment and the XSP/XDP Equipment and Systems that are NOT

The **XSP/XDP** is intended for use in the electromagnetic environment in which radiated disturbances are controlled. The customer or user of the **XSP/XDP** can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF Communications Equipment and the **XSP/XDP** as recommended below, according to the maximum output power of the communications equipment.

Maximum Output Power (Watts)	Recommended Separation Distances for the XSP/XDP (meters)		
	150 kHz to 80 MHz	150 kHz to 80 MHz 80 to 800MHz	
	$d = 1.1667\sqrt{P}$	$d = 1.1667\sqrt{P}$	$d = 2.3333\sqrt{P}$
0.01	0.11667	0.11667	0.23333
0.1	0.36894	0.36894	0.73785
1	1.1667	1.1667	2.3333
10	3.6894	3.6894	7.3785
100	11.667	11.667	23.333

BLOCK DIAGRAM



ORDERING EQUIPMENT 9300XSP/9300XDP Parts List

To place an order, contact your local Luxtec distributor or call Luxtec Customer Service at **1-800-325-8966** (USA & Canada) or at +1-508-835-9700.

Light Source

Note: Dual Turrets are identified as a two letter suffix. The first letter indicates the primary turret option and the second letter indicates the secondary turret option.

009300XDPCFDD	300 Watt Xenon Dual Turret Light Source with 2 D Turrets
009300XDPCFDP	300 Watt Xenon Dual Turret Light Source with 1 D and 1 P Turret
009300XDPCFDT	300 Watt Xenon Dual Turret Light Source with 1 D and 1 T Turret
009300XDPCFPD	300 Watt Xenon Dual Turret Light Source with 1 P and 1 D Turret
009300XDPCFPP	300 Watt Xenon Dual Turret Light Source with 2 P Turrets
009300XDPCFPT	300 Watt Xenon Dual Turret Light Source with 1 P and 1 T Turret
009300XDPCFTD	300 Watt Xenon Dual Turret Light Source with 1 T and 1 D Turret
009300XDPCFTP	300 Watt Xenon Dual Turret Light Source with 1 T and 1 P Turret
009300XDPCFTT	300 Watt Xenon Dual Turret Light Source with 2 T Turrets
009300XSPT	300 Watt Xenon Single Turret Light Source with A–W–O–S Turret
009300XSPP	300 Watt Xenon Single Turret Light Source with A–W–P–S Turret
009300XSPD	300 Watt Xenon Single Turret Light Source with W–D–O–S Turret
For any 9300XDP purchase	d prior to November 2000. call Luxtec Customer Service for parts.

T, D, and P Turret Kits

000662	Kit, "T" CF Turret, ACMI, Wolf, Storz and Olympus
000663	Kit, "P" CF Turret, ACMI, Wolf, Storz and Pilling
000664	Kit, "D" CF Turret, Wolf, Storz, Designs for Vision and Olympus

Lamp Assembly (same for both XSP and XDP product lines)

	•
000090	Lamp Assembly*
0025001	Lamp only*
	* For warranty compliance, a Luxtec lamp assembly or lamp must be used in these Luxtec products. The use of non-Luxtec bulb or lamp assembly will void the warranty for that product
Accessories	
400450	

400456	Power Switch Assembly
400681	Digital Age Meter Assembly
410116LX	Fan Assembly
600972	Power Supply, 300 Watt Xenon
600987	Fuse 6.3 Amp, Slow Blow
601058	Intensity Knob
601059	Actuator Knob
601178	Attenuator O-Ring
601317	Handle
601318	Rubber Bumper Feet
601949EUR6M	European Power Cord 20' (6m)
601949UK6M	Hospital Grade UK Power Cord 20' (6m)
601949US6P1	Hospital Grade USA Power Cord 20' (6m)
604035	Interlock Switch
850159	Operating and Service Manual 9300XSP/XDP

LIMITED WARRANTY

Luxtec warrants that the equipment manufactured by Luxtec shall be free from defects in material and workmanship under normal use and service for a period of three (3) years from the date of shipment from Luxtec. Luxtec's sole and exclusive liability under the warranty shall be, at Luxtec's option, either to repair or to replace any component which fails during the warranty period due to any defect in workmanship or material F.O.B. factory if:

- 1. Customer promptly reports such defect to Luxtec in writing,
- 2. If requested by Luxtec, customer returns equipment to Luxtec with shipping charges and,
- 3. Upon inspection, Luxtec finds the equipment to be defective.

This warranty is contingent upon normal and proper use of the equipment. It does not cover equipment modified without the written approval of Luxtec, subjected to unusual physical or electrical stress, or damaged during shipment. This warranty is non-transferable unless authorized in writing by Luxtec.

Luxtec reserves the right to make design changes on its products without liability to incorporate said change in Luxtec products previously designed or sold.

Upon receipt of the product, it should be carefully inspected. If any defect is discovered, notification must immediately given to the manufacturer.

REPAIR AND RETURN

This device must be clean when returned to Luxtec. Luxtec reserves the right to return unrepaired any equipment that is contaminated with blood or other organic material.

Warranty Service and Repair:

To obtain service under warranty or return product for repair, the customer should contact your local Luxtec distributor or call Luxtec Customer Service at 800-325-8966 (USA & Canada) or +1-508-835-9700.

Information contained in this manual is subject to change without notice.



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