**The GreenLight XPS Laser System Specifications**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laser Type</td>
<td>Solid State, Frequency Doubled XPS</td>
</tr>
<tr>
<td>Laser Compatibility</td>
<td>GreenLight HPS®, Mojo®, MoXy®</td>
</tr>
<tr>
<td>Wavelength</td>
<td>532 nm</td>
</tr>
<tr>
<td>Pulse modulated</td>
<td>12 Hz</td>
</tr>
<tr>
<td>Pulse duration</td>
<td>1–2 mm</td>
</tr>
<tr>
<td>Laser Output</td>
<td>180 W</td>
</tr>
<tr>
<td>Nominal Optical Hazard Distance (NOHD)</td>
<td>33.9 meters</td>
</tr>
<tr>
<td>Working Distance</td>
<td>0.8 mm</td>
</tr>
<tr>
<td>Cooling Water</td>
<td>Internal</td>
</tr>
<tr>
<td>Fiber Tip O.D.</td>
<td>750 µm</td>
</tr>
<tr>
<td>Fiber Core Diameter</td>
<td>750 µm</td>
</tr>
<tr>
<td>Fiber Life</td>
<td>MoXy®</td>
</tr>
<tr>
<td>Power Range</td>
<td>1–20 W</td>
</tr>
<tr>
<td>Fiber Life</td>
<td>FiberLife™</td>
</tr>
<tr>
<td>Energy Limit</td>
<td>650 kJ</td>
</tr>
<tr>
<td>Fiber Longevity</td>
<td>Yes - TruCoag™ 5–40 W</td>
</tr>
<tr>
<td>Use Environment</td>
<td>Internal</td>
</tr>
<tr>
<td>Flow Endoscope/Cystoscope</td>
<td>Most 22 - 26 Fr Continuous</td>
</tr>
<tr>
<td>Working Distance</td>
<td>0.44 mm^2</td>
</tr>
<tr>
<td>Beam Area at Distance</td>
<td>~70 – 80°</td>
</tr>
<tr>
<td>Power Cord Length</td>
<td>15 ft (4.6 m)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>W: 20” x D: 36” x H: 43.5”</td>
</tr>
</tbody>
</table>

**Contraindications, Warnings, Precautions and Potential Adverse Events.**

Prior to using these devices, please review the Operator’s Manual and any accompanying instructions for use for a complete listing of indications, contraindications, warnings, precautions and potential adverse events. Possible risks and complications associated with GreenLight vaporization of the prostate for benign prostatic hyperplasia (BPH) include: uncontrolled bleeding disorders, have prostate cancer, have acute urinary tract infection (UTI) or severe urethral stricture. Possible complications include: hematuria — gross, UTI, bladder neck contracture/outlet obstruct, urinary retention, perforation — prostate, urethral stricture.

**References:**

1. AMS internal in vitro testing on bovine prostatic tissue.
2. AMS internal ex-vivo testing using a porcine perfused kidney model.
Our objective is simple—provide TURP users with the most compelling reasons to convert to GreenLight. A world without TURP is our vision.

The GreenLight™ laser is intended for photoselective vaporization, incision/excision, ablation, hemostasis and coagulation of soft tissue, including photoselective vaporization of the prostate for benign prostatic hyperplasia (BPH). The laser system is contraindicated for patients who:

- are contraindicated for surgery,
- are contraindicated for anesthesia, have calcified tissue, require hemostasis in >2mm vessels, have contraindications, warnings, precautions and potential adverse events.

Prior to using these devices, please review the Operator’s Manual and any accompanying instructions for use for a complete listing of indications, contraindications, warnings, precautions and potential adverse events.

Proven Equivalent to TURP with Lower Morbidity, Fewer Complications, Shorter Hospital Stay

TURP-like results with fewer complications and less morbidity than TURP.**

**4. Malek RS. Photoselective KTP laser vaporization of the prostate for benign prostatic hyperplasia (BPH). The laser system is contraindicated for patients who:

- are contraindicated for surgery,
- are contraindicated for anesthesia, have calcified tissue, require hemostasis in >2mm vessels, have contraindications, warnings, precautions and potential adverse events.

Prior to using these devices, please review the Operator’s Manual and any accompanying instructions for use for a complete listing of indications, contraindications, warnings, precautions and potential adverse events.

Safety

GreenLight™ offers the same safety profile as current GreenLight™ technology.

Speed and Efficiency

XPS with the MOXY® Liquid Coated fiber offers 2X speed of HPS.

Fiber Longevity

MOXY® enhances improved fiber reliability.

Improved Coagulation

"The Speed of Light Just Got Faster."
**PROVEN EQUIVALENT TO TURP WITH LOWER MORBIDITY FEWER COMPLICATIONS**

A world without TURP is our vision

Our objective is simple – provide TURP users with the most compelling reasons to convert to GreenLight.

1. AMS internal in vitro testing on bovine prostatic tissue.
2. AMS internal ex-vivo testing using a porcine perfused kidney model.
3. AMS internal in vitro testing on bovine prostatic tissue.
4. Malek RS. Photoselective KTP laser vaporization of the prostate for benign prostatic hyperplasia (BPH). The laser system is contraindicated for patients who: are contraindicated for surgery, have uncontrolled bleeding disorders, have prostate cancer, have acute urinary tract infection (UTI) or severe urethral stricture. Possible risks and complications include, but are not limited to, irritative symptoms (dysuria, urgency, frequency), retrograde ejaculation, urinary incontinence, erectile dysfunction, showing similar depth of tissue removal and thickness of residual coagulated tissue.
8. Lumenis Corporate Website: http://www.surgical.com/technologies/corporate.html

**The GreenLight XPS Laser System Specifications**

- **Laser Type**: Solid State, Frequency Doubled XPS
- **Wavelength**: 532 nm
- **Max. Power Output**: 180 W
- **Energy Limit**: 650 kJ
- **W: 20” x D: 36” x H: 43.5”
- **Weight**: Approximately 420 lb (190 kg)
- **Dimensions**: (W: 20” x D: 36” x H: 43.5”)
- **Flow Endoscope/Cystoscope**: OD > 6 mm
- **Coagulation Beam Mode**: Quasi-CW (15 kHz–25 kHz), 0.5 – 3.0 mm, 0.8 mm
- **Coagulation Depth**: 1–2 mm
- **Optical Penetration**: 0.8 mm
- **Coagulation Mode**: Y es - TRUCOAG™ 5–40 W, 25% duty cycle
- **Beam Area at Firing Angle**: ~70 - 80°
- **Working Distance**: 0.44 mm²
- **Firing Angle**: ~70 - 80°
- **Use Environment**: Internal
- **Current Draw**: 20 A
- **Eye Protection**: Internal
- **MoJo® Enabled**: Yes
- **FiberLife™**: Yes
- **FiberLife™ and TruCoag™ are trademarks of American Medical Systems, Inc.

**FiberLife™ and TruCoag™**

- **Compatibility Fibers**: HPS fibers (600 µm core diameter), MoXy fiber (750 µm core diameter)
- **Active Cooling Cap™**: With FiberLife™
- **Flow Endoscope/Cystoscope**: OD > 6 mm
- **Eye Protection**: Internal
- **MoJo® Enabled**: Yes

**Speed of Light Just Got Faster.**

- **The Speed of Light Just Got Faster.**
- **2X speed of HPS**
- **Improved Coagulation**
- **Improved Fiber Reliability**
- **Fiber Longevity**
- **2.3 mm Fiber Longevity**

**Building on the excellent tradition of the PV and HPS Systems.**

- **Safety**
  - GreenLight XPS offers the same safety profile as current GreenLight HPS technology.
- **Speed and Efficiency**
  - 3X with the MoXy®, Liquid Cooled fiber offers 2X speed of HPS.
- **Fiber Longevity**
  - 2.3 mm ensures improved fiber lifetime.
- **Improved Coagulation**
  - "TruCoag" offers tighter coagulation dissolution than any previous GreenLight console."
Safety
GreenLight HPS with the Moxy liquid cooled fiber provides fast and efficient vaporization with the same safety profile as current GreenLight HPS technology.

To achieve the proven safety profile of the GreenLight HPS system and improve the rate of vaporization, the power of the XPS/MoXy system was increased by 50% as compared to the HPS fiber. Also, alerts the user to conditions of excessive heat such as the presence of prostatic calculus.

Active Cooling Cap Technology
Active Cooling Cap technology utilizes saline flow to minimize the fiber active cap-related failures while maintaining tissue desiccation or power degradation running through the outside of the active cap.

Fiber Longevity
Revolutionary proprietary technology increases fiber longevity while decreasing cap failures by 50% as compared to the HPS fiber. Also, alerts the user to conditions of excessive heat such as the presence of prostatic calculus.

The XPS/MoXy is a laser system that detects conditions when the fiber cap may overheat and alerts the user to stop laser firing. This increases fiber longevity while decreasing cap failures by 50% as compared to the HPS fiber.

Fiber Life is an automatic safety system that detects conditions when the fiber cap may overheat and briefly interrupts laser firing to keep the fiber tip cooled reducing fiber cap-related failures by 90% as compared to the HPS fiber.

Active Cooling Cap technology utilizes saline flow to minimize the fiber active cap-related failures while maintaining tissue desiccation or power degradation running through the outside of the active cap. The fiber tip devitrification which significantly reduces power density = beam area

Power Density = Power / Beam Area

Water Vaporation
Comparable Depth to HPS

Vaporization efficiency is significantly enhanced throughout the procedure with the Moxy due to increased energy resulting in the removal of 2x more tissue using the same laser firing time.

Moxy Active Cooling Cap
Moxy’s Active Cooling Cap technology utilizes saline flow to remove heat from the fiber tip and significantly reduces power degradation throughout the duration of the procedure.

Active Cooling Cap
Active Cooling Cap technology utilizes saline flow to remove heat from the fiber tip and significantly reduces power degradation throughout the duration of the procedure.

Efficiency
XPS 180W
0.44 mm²

XPS MoXy Fiber @ 180W

HPS Fiber @ 120W

SPEEd FIbER
180W
2X

Remove More Tissue in Less Time*

Lasing Time (                             min)

Fiber Life is an automatic safety system that detects conditions when the fiber cap may overheat and briefly interrupts laser firing to keep the fiber tip cooled reducing fiber cap-related failures by 90% as compared to the HPS fiber.

Active Cooling Cap technology utilizes saline flow to minimize the fiber active cap-related failures while maintaining tissue desiccation or power degradation running through the outside of the active cap. The fiber tip devitrification which significantly reduces power degradation throughout the duration of the procedure.

Active Cooling Cap technology utilizes saline flow to remove heat from the fiber tip and significantly reduces power degradation throughout the duration of the procedure.

Active Cooling Cap
Active Cooling Cap technology utilizes saline flow to remove heat from the fiber tip and significantly reduces power degradation throughout the duration of the procedure.

Fiber Life is an automatic safety system that detects conditions when the fiber cap may overheat and briefly interrupts laser firing to keep the fiber tip cooled reducing fiber cap-related failures by 90% as compared to the HPS fiber.

Active Cooling Cap technology utilizes saline flow to minimize the fiber active cap-related failures while maintaining tissue desiccation or power degradation running through the outside of the active cap. The fiber tip devitrification which significantly reduces power degradation throughout the duration of the procedure.

Active Cooling Cap technology utilizes saline flow to remove heat from the fiber tip and significantly reduces power degradation throughout the duration of the procedure.

Fiber Life is an automatic safety system that detects conditions when the fiber cap may overheat and briefly interrupts laser firing to keep the fiber tip cooled reducing fiber cap-related failures by 90% as compared to the HPS fiber.

Active Cooling Cap technology utilizes saline flow to minimize the fiber active cap-related failures while maintaining tissue desiccation or power degradation running through the outside of the active cap. The fiber tip devitrification which significantly reduces power degradation throughout the duration of the procedure.

Active Cooling Cap technology utilizes saline flow to remove heat from the fiber tip and significantly reduces power degradation throughout the duration of the procedure.

Fiber Life is an automatic safety system that detects conditions when the fiber cap may overheat and briefly interrupts laser firing to keep the fiber tip cooled reducing fiber cap-related failures by 90% as compared to the HPS fiber.

Active Cooling Cap technology utilizes saline flow to minimize the fiber active cap-related failures while maintaining tissue desiccation or power degradation running through the outside of the active cap. The fiber tip devitrification which significantly reduces power degradation throughout the duration of the procedure.

Active Cooling Cap technology utilizes saline flow to remove heat from the fiber tip and significantly reduces power degradation throughout the duration of the procedure.

Fiber Life is an automatic safety system that detects conditions when the fiber cap may overheat and briefly interrupts laser firing to keep the fiber tip cooled reducing fiber cap-related failures by 90% as compared to the HPS fiber.
Safety

GreenLight HPS with the Moxy liquid cooled fiber provides fast and efficient vaporization with the same safety profile as current GreenLight HPS technology.

To achieve the proven safety profile of the GreenLight HPS system and improve the rate of vaporization, the power of the XPS/MoXy system was increased by 50% percent. The benefit of XPS/MoXy is that it provides a wider tissue vaporization effect without sacrificing the depth of vaporization and coagulation of that it provides. XPS/MoXy allows for the removal of a wider section of tissue without increasing the depth of tissue removal.

Active Cooling Cap technology utilizes saline flow to minimize temperature within the safe zone. Lab tests show average %T degradation of tissue removed with only one fiber.

Fiber longevity

Fiber is an automatic safety system that detects conditions when the fiber cap may melt and locally increases conditions of excessive heat such as the presence of prostatic calcui. Treat glands ≥120 gm with only one fiber.

Improved coagulation

The Coag uses pulsating light to coagulate ruptured vessels and reduce bleeding faster and in more situations.

Better control of bleeders

TruCoag uses pulsating light to control aberrant bleeders faster than the GreenLight HPS and PV laser consoles.

Vaporization efficiency is significantly enhanced throughout the procedure with the Moxy fiber associated tissue resulting in the removal of 2x more tissue over the same lasing time.

XPS with Moxy allows for the removal of a wider section of tissue without increasing the depth of tissue removal. Coagulation depth also remains the same.

Moxy’s Active Cooling Cap Technology

Active Cooling Cap technology utilizes saline flow to keep the fiber cap cool during tissue removal. The saline, while minimizing tissue desiccation or power degradation throughout the duration of the procedure.

Active Cooling Cap

1 mm depth of coagulation utilizing GreenLight XPS.

---

**Table:**

<table>
<thead>
<tr>
<th>Laser Power</th>
<th>Depth of Coagulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0W</td>
<td>&lt;1 mm</td>
</tr>
<tr>
<td>80W</td>
<td>~2 mm</td>
</tr>
<tr>
<td>120W</td>
<td>~3 mm</td>
</tr>
<tr>
<td>180W</td>
<td>~4 mm</td>
</tr>
</tbody>
</table>

---

**Graph:**

- **XPS MoXy Fiber**
- **HPS Fiber @ 120W**
- **MoXy Fiber @ 180W**

---

**Diagram:**

- Tissue Vaporized
- XPS MoXy Fiber
- HPS Fiber
- MoXy Fiber

---

**Figure:**

- **Power Density = Power Beam Area**
- **Water Vaporization: Comparable Depth to HPS**
- **Increase in Beam Area**

---

**Text:**

- Greenlight HPS with the Moxy liquid cooled fiber provides fast and efficient vaporization with the same safety profile as current GreenLight HPS technology.
- To achieve the proven safety profile of the GreenLight HPS system and improve the rate of vaporization, the power of the XPS/MoXy system was increased by 50% percent. The benefit of XPS/MoXy is that it provides a wider tissue vaporization effect without sacrificing the depth of vaporization and coagulation of that it provides. XPS/MoXy allows for the removal of a wider section of tissue without increasing the depth of tissue removal.
- Active Cooling Cap technology utilizes saline flow to minimize temperature within the safe zone. Lab tests show average %T degradation of tissue removed with only one fiber.
- Fiber longevity
- Fiber is an automatic safety system that detects conditions when the fiber cap may melt and locally increases conditions of excessive heat such as the presence of prostatic calcui. Treat glands ≥120 gm with only one fiber.
- Improved coagulation
- The Coag uses pulsating light to coagulate ruptured vessels and reduce bleeding faster and in more situations.
- Better control of bleeders
- TruCoag uses pulsating light to control aberrant bleeders faster than the GreenLight HPS and PV laser consoles.
- Vaporization efficiency is significantly enhanced throughout the procedure with the Moxy fiber associated tissue resulting in the removal of 2x more tissue over the same lasing time.
- XPS with Moxy allows for the removal of a wider section of tissue without increasing the depth of tissue removal. Coagulation depth also remains the same.
- Moxy’s Active Cooling Cap Technology
- Active Cooling Cap technology utilizes saline flow to keep the fiber cap cool during tissue removal. The saline, while minimizing tissue desiccation or power degradation throughout the duration of the procedure.
- Active Cooling Cap
- **1 mm depth of coagulation utilizing GreenLight XPS.**
GreenLight HPS with the MoXy liquid cooled fiber provides fast and efficient tissue vaporization with the same safety profile as current GreenLight HPS technology.

To achieve the proven safety profile of the GreenLight HPS system and improve the rate of vaporization, the power of the XPS/MoXy system was increased by 50% while simultaneously increasing the area of the laser beam by 50% percent. The benefit of XPS/MoXy is faster and in more situations.

Vaporization efficiency is significantly enhanced throughout the procedure with the MoXy as compared to HPS resulting in the removal of 2x more tissue over the same lasing time.

MoXy's Active Cooling Cap™ technology utilizes saline flow to minimize tissue vaporization and keep the fiber tip cooled reducing fiber cap related failures by 90%. Active Cooling Cap technology utilizes saline flow to minimize tissue vaporization while maintaining tissue coagulation or power degradation. Enhanced throughout the procedure with the active cooling cap technology.

Revolutionary new proprietary technology increases fiber longevity while decreasing cap failures by 90% as compared to the HPS fiber. Also alerts the user to conditions of excessive heat such as the presence of prostatic calculi.

To achieve the proven safety profile of the GreenLight HPS and PV laser consoles.2

Better Control of Bleeders

TruCoag uses pulsating light to coagulate ruptured vessels and reduce bleeding faster and in more situations.

Active Cooling Cap Technology

Active Cooling Cap technology utilizes saline flow to keep the fiber tip cooled thereby creating more fiber life. Also prevents tissue devitrification or power degradation allowing the fiber to remain usable for longer.

TruCoag uses pulsating light to coagulate ruptured vessels and reduce bleeding faster and in more situations.

Improved Coagulation

Active Cooling Cap technology utilizes saline flow to keep the fiber tip cooled thereby creating more fiber life. Also prevents tissue devitrification or power degradation allowing the fiber to remain usable for longer.

While the vaporization depth of the XPS with the MoXy Fiber and HPS with the 10-2090 Fiber are similar when used under similar conditions, the actual depth of tissue removal will vary with sweep rate, power and tissue condition.

To remove tissue from the bovine lower urinary tract. Periodically through the procedure vaporization efficiency is significantly enhanced throughout the procedure with the MoXy as compared to HPS resulting in the removal of 2x more tissue over the same lasing time.

XPS with MoXy allows for the removal of a wider section of tissue without increasing the depth of tissue removal. Coagulation depth also remains the same.

MoXy's Active Cooling Cap™ technology utilizes saline flow to minimize tissue vaporization and keep the fiber tip cooled reducing fiber cap related failures by 90%.

Active Cooling Cap technology utilizes saline flow to keep the fiber tip cooled thereby creating more fiber life. Also prevents tissue devitrification or power degradation. Enhanced throughout the procedure with the active cooling cap technology.

Active Cooling Cap technology utilizes saline flow to keep the fiber tip cooled thereby creating more fiber life. Also prevents tissue devitrification or power degradation allowing the fiber to remain usable for longer.

30% Increase in Beam Area
GreenLight® HPS with the MoXy liquid cooled fiber provides fast and efficient tissue vaporization with the same safety profile as current GreenLight® HPS technology.

To achieve the proven safety profile of the GreenLight® HPS system and improve the rate of vaporization, the power of the XPS/MoXy system was increased by 50% while simultaneously increasing the area of the laser beam by 50%. The benefit of XPS/MoXy is that it provides a wider tissue vaporization effect without sacrificing the depth of vaporization and coagulation of that it provides a wider tissue vaporization effect without increasing the depth of tissue removal.

XPS with MoXy allows for the removal of a wider section of tissue without increasing the depth of tissue removal. Coagulation depth also remains the same.

Active Cooling Cap™ technology utilizes saline flow to minimize active cooling cap-related failures by 90% as compared to the GreenLight® HPS fiber. Also alerts the user to conditions of excessive heat such as the presence of prostate calculus.

Tissue vaporized at 180 watts showing 1-2 mm of tissue without increasing the depth of tissue removal. Deeper coagulation may be a key factor in influencing increased dysuria rates and other post-procedural complications.

Revolutionary proprietary technology increases fiber longevity while decreasing cap related failures by 50% as compared to the HPS fiber. Also alerts the user to conditions of excessive heat such as the presence of prostate calculus.

FiberLife is an automatic safety system that alerts conditions when the fiber cap may overheat and briefly interrupts lasing time.

Fiber is an automatic safety system that detects conditions when the fiber cap may overheat and briefly interrupts lasing time. This keeps the cap temperature safe for all procedures.
PROVEN EQUIVALENT TO TURP WITH LOWER MORTALITY FEWER COMPLICATIONS™
SHORTER HOSPITAL STAYS™

A world without TURP is our vision
Our objective is simple - provide TURP users with the most compelling reasons to convert to GreenLight.

TURP-like results with fewer complications and less morbidity than TURP™

1. Malek RS. Photoselective KTP laser vaporization of the prostate for benign prostatic hyperplasia (BPH). The laser system is contraindicated for patients who: are contraindicated for surgery, have calcified tissue, require hemostasis in >2mm vessels, have vaporization of the prostate for benign prostatic hyperplasia (BPH). The laser system is contraindicated for patients who: are contraindicated for surgery, have calcified tissue, require hemostasis in >2mm vessels, have

2. AMS internal in vitro testing on bovine prostatic tissue.

3.  AMS internal ex-vivo testing using a porcine perfused kidney model.

4.  Malek RS. Photoselective KTP laser vaporization of the prostate for benign prostatic hyperplasia (BPH). The laser system is contraindicated for patients who: are contraindicated for surgery, have calcified tissue, require hemostasis in >2mm vessels, have


8. Lumenis Corporate Website: http://www.surgical.procedures.4th.11.10


