



December 20, 2019

Quanta System SPA
Francesco Dell'Antonio
Vice President Regulatory Affairs and QA
via Acquedotto 109
Samarate (Va), 21017 IT

Re: K192990

Trade/Device Name: Litho Evo

Regulation Number: 21 CFR 878.4810

Regulation Name: Laser Surgical Instrument For Use In General And Plastic Surgery And In
Dermatology

Regulatory Class: Class II

Product Code: GEX

Dated: September 27, 2019

Received: October 25, 2019

Dear Francesco Dell'antonio:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. Although this letter refers to your product as a device, please be aware that some cleared products may instead be combination products. The 510(k) Premarket Notification Database located at <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpmn/pmn.cfm> identifies combination product submissions. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration. Please note: CDRH does not evaluate information related to contract liability warranties. We remind you, however, that device labeling must be truthful and not misleading.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part 801); medical device reporting (reporting of medical device-related adverse events) (21 CFR 803) for devices or postmarketing safety reporting (21 CFR 4, Subpart B) for combination products (see <https://www.fda.gov/combination-products/guidance-regulatory-information/postmarketing-safety-reporting-combination-products>); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820) for devices or current good manufacturing practices (21 CFR 4, Subpart A) for combination products; and, if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21 CFR Part 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to <https://www.fda.gov/medical-devices/medical-device-safety/medical-device-reporting-mdr-how-report-medical-device-problems>.

For comprehensive regulatory information about medical devices and radiation-emitting products, including information about labeling regulations, please see Device Advice (<https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance>) and CDRH Learn (<https://www.fda.gov/training-and-continuing-education/cdrh-learn>). Additionally, you may contact the Division of Industry and Consumer Education (DICE) to ask a question about a specific regulatory topic. See the DICE website (<https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance/contact-us-division-industry-and-consumer-education-dice>) for more information or contact DICE by email (DICE@fda.hhs.gov) or phone (1-800-638-2041 or 301-796-7100).

Sincerely,

Purva Pandya
Acting Assistant Director
DHT4A: Division of General Surgery Devices
OHT4: Office of Surgical
and Infection Control Devices
Office of Product Evaluation and Quality
Center for Devices and Radiological Health

Enclosure

Indications for Use

510(k) Number (if known)

K192990

Device Name

Litho EVO

Indications for Use (Describe)

The Litho EVO laser system and its fiber optic delivery system are intended for use in surgical procedures using open, laparoscopic and endoscopic incision, excision, resection, ablation, vaporization, coagulation and haemostasis of soft tissue in use in medical specialties including: Urology, Urinary Lithotripsy, Gastroenterology, Arthroscopy, Discectomy, Gynaecology, ENT and General Surgery.

Urology

Open and endoscopic surgery (incision, excision, resection, ablation, vaporization, coagulation and haemostasis) including:

- Urethral Strictures
- Bladder Neck Incisions (BNI)
- Ablation and resection of Bladder Tumors, Urethral Tumors and Ureteral Tumors,
- Ablation of Benign Prostatic Hypertrophy (BPH),
- Transurethral incision of the prostate (TUIP)
- Holmium Laser Resection of the Prostate (HoLRP)
- Holmium Laser Enucleation of the Prostate (HoLEP)
- Holmium laser Ablation of the Prostate (HoLAP)
- Condylomas
- Lesions of external genitalia

Lithotripsy and Percutaneous Urinary Lithotripsy

- Endoscopic fragmentation of urethral, ureteral, bladder and renal calculi including cystine, calcium oxalate, monohydrate and calcium oxalate dehydrate stones.
- Endoscopic fragmentation of kidney calculi
- Treatment of distal impacted fragments of steinstrasse when guide wire cannot be passed.

Gastroenterology

Open and endoscopic Gastroenterology surgery (incision, excision, resection, ablation, vaporization, coagulation and haemostasis) including:

- Appendectomy
- Polyps
- Biopsy
- Gall Bladder calculi
- Biliary/Bile duct calculi
- Ulcers
- Gastric ulcers
- Duodenal ulcers
- Non Bleeding Ulcers
- Pancreatitis
- Haemorrhoids

-
- Cholecystectomy
 - Benign and Malignant Neoplasm
 - Angiodysplasia
 - Colorectal cancer
 - Telangiectasias
 - Telangiectasias of the Osler-Weber-Renu disease
 - Vascular Malformation
 - Gastritis
 - Esophagitis
 - Esophageal ulcers
 - Varices
 - Colitis
 - Mallory-Weiss tear
 - Gastric Erosions

Arthroscopy

Arthroscopy/Orthopaedic surgery (excision, ablation and coagulation of soft and cartilaginous tissue) in small and large joints of the body, excluding the spine but including:

- Ligament and tendon Release
- Contouring and sculpting of articular surfaces
- Capsulectomy in the Knee
- Chondreplasty in the Knee
- Debridement of inflamed synovial tissue
- Chondromalacia Ablation
- Chondromalacia and tears
- Plica Removal
- Meniscectomy
- Loose Body Debridement
- Lateral retinacular release

Ablation of soft, cartilaginous and bony tissue in Minimal Invasive Spinal Surgery including

- Percutaneous Laser Disc Decompression/Discectomy of the L4-5 and L5-SI lumbar discs, including Foraminoplasty
- Percutaneous Cervical Disc Decompression/Discectomy
- Percutaneous Thoracic Disc Decompression/Discectomy

Gynaecology

Open and laparoscopic gynaecological surgery (incision, excision, resection, ablation, vaporization, coagulation and haemostasis) of soft tissue

ENT

Endoscopic endonasal surgery (incision, excision, resection, ablation, vaporization, coagulation and haemostasis of soft tissue and cartilage) including:

- Endonasal/sinus Surgery
- Partial turbinectomy
- Polypectomy
- Dacryocystorhinostomy
- Frontal Sinusotomy
- Ethmoidectomy
- Maxillary antrostomy

-
- Functional endoscopic sinus surgery

General Surgery

Open, laparoscopic and endoscopic surgery (incision, excision, resection, ablation, vaporization, coagulation and haemostasis) including:

- Appendectomy
- Skin incision
- Excision of external and internal lesions
- Complete or partial resection of internal organs, tumors and lesions
- Biopsy

Type of Use (Select one or both, as applicable)

☒ Prescription Use (Part 21 CFR 801 Subpart D)

☐ Over-The-Counter Use (21 CFR 801 Subpart C)

PLEASE DO NOT WRITE BELOW THIS LINE – CONTINUE ON A SEPARATE PAGE IF NEEDED.

FOR FDA USE ONLY

Concurrence of Center for Devices and Radiological Health (CDRH) (Signature)

This section applies only to requirements of the Paperwork Reduction Act of 1995.

DO NOT SEND YOUR COMPLETED FORM TO THE PRA STAFF EMAIL ADDRESS BELOW.

The burden time for this collection of information is estimated to average 79 hours per response, including the time to review instructions, search existing data sources, gather and maintain the data needed and complete and review the collection of information. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden, to:

Department of Health and Human Services
Food and Drug Administration
Office of Chief Information Officer
Paperwork Reduction Act (PRA) Staff
PRASStaff@fda.hhs.gov

"An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB number."

K192990
510(K) SUMMARY

**Applicant /
Manufacturer
Name and Address:**

Quanta System SPA
Via Acquedotto, 109
Samarate (VA)
Italy, 21017

510(k) Contact Person:

Francesco Dell'Antonio
Vice President Regulatory Affairs and QA
Quanta System SPA

Email: francesco.dellantonio@quantasystem.com
Phone: +39-0331-376797
Fax: +39-0331-367815

Date Prepared:

27th September 2019

Common name:

Holmium laser device

Brand name:

Litho Evo

Classification:

Class II

Classification Name:

Laser surgical instrument for use in general and plastic surgery
and in dermatology.

Regulation Number:

21 CFR 878.4810

Product Code:

GEX

Basis for Submission:

Device modifications

Legally Marketed Device:

Olympus Empower H35 (K180426) – Quanta System SPA

Reference predicate device:

Litho 100 (K180922) – Quanta System SPA

The modified device Litho Evo is derived from the legally marketed (unmodified) device Olympus Empower H35 (K180426).

Performance Standards:

There are no mandatory performance standards for this device.

Description of the device:

Litho Evo is based on Holmium laser cavity emitting at 2100nm.

Laser emission is triggered by mean of a footswitch and is delivered to the tissue through fiber optics.

The main parts (subsystems) of the subject device are the Holmium laser source, the optical delivery system, the power electronics, the control electronics and the cooling system.

Moreover, a specific software controls the device functions and allows the user selections through the touchscreen display.

Description of the modifications:

This Special 510(k) of Litho Evo is submitted due to Device Modifications of the already cleared device Olympus Empower H35 (K180426) due to some technical modifications.

The subject device has the same technological characteristics (design, material, components, energy source) as the predicate device except for the differences shown in the table below.

	Subject device Litho Evo	Main predicate device Empower H35	Reference predicate device Litho 100
External appearance	Cosmetic change from the main predicate	-	-
Graphic user interface and software	Same as the reference predicate	-	-
Footswitch	Double footswitch, Same as the reference predicate	Single footswitch	Double footswitch
Hardware, components and performances	Same as main predicate	-	-

The modified device has the same intended use of the unmodified device. Moreover, the the intended use of the modified device, as described in its labeling, has not changed as a result of the modifications.

Based on the nature of the changes implemented, the device underwent and successfully passed performance testing and software verifications and validation according to the relevant standards.

A comparison of the technical characteristics of the subject device and its predicates follows:

	Subject device	Main predicate device	Reference predicate device
model name	Litho Evo	Empower H35	Litho 100
manufacturer	Quanta System SpA	Quanta System SpA	Quanta System SpA
510(k)	-	K180426	K180922
Laser Source	Pulsed Holmium laser (CHT:YAG)	Pulsed Holmium laser (CHT:YAG)	Pulsed Holmium laser (CHT:YAG)

	Subject device	Main predicate device	Reference predicate device
Wavelength (nm)	2.1 µm	2.1 µm	2.1 µm
Emission	pulsed	pulsed	pulsed
Pulse duration	Up to 1100µs	Up to 1500 µs	Up to 1100µs
Energy per pulse	up to 5.0 Joule	up to 5.0 Joule	up to 5.0 Joule
Frequency	from 3 to 30 Hz	from 3 to 30 Hz	from 3 to 80 Hz
Max average power	35 W	35 W	105W
Delivery system	Optical fibers	Optical fibers	Optical fibers
Aiming beam	green 532nm < 5mW	Green diode laser < 5 mW	Green diode laser < 5 mW

Intended Use/Indications for Use

Litho Evo has the same intended use of the unmodified device, as follows:

The Litho Evo laser system and its fiber optic delivery system are intended for use in surgical procedures using open, laparoscopic and endoscopic incision, excision, resection, ablation, vaporization, coagulation and haemostasis of soft tissue in use in medical specialties including: Urology, Urinary Lithotripsy, Gastroenterology, Arthroscopy, Discectomy, Gynaecology, ENT and General Surgery.

Urology

Open and endoscopic surgery (incision, excision, resection, ablation, vaporization, coagulation and haemostasis) including:

- Urethral Strictures
- Bladder Neck Incisions (BNI)
- Ablation and resection of Bladder Tumors, Urethral Tumors and Ureteral Tumors,
- Ablation of Benign Prostatic Hypertrophy (BPH),
- Transurethral incision of the prostate (TUIP)
- Holmium Laser Resection of the Prostate (HoLRP)
- Holmium Laser Enucleation of the Prostate (HoLEP)
- Holmium laser Ablation of the Prostate (HoLAP)
- Condylomas
- Lesions of external genitalia

Lithotripsy and Percutaneous Urinary Lithotripsy

- Endoscopic fragmentation of urethral, ureteral, bladder and renal calculi including cystine, calcium oxalate, monohydrate and calcium oxalate dehydrate stones.
- Endoscopic fragmentation of kidney calculi
- Treatment of distal impacted fragments of steinstrasse when guide wire cannot be passed.

Gastroenterology

Open and endoscopic Gastroenterology surgery (incision, excision, resection, ablation, vaporization, coagulation and haemostasis) including:

- Appendectomy
- Polyps
- Biopsy
- Gall Bladder calculi
- Biliary/Bile duct calculi
- Ulcers
- Gastric ulcers
- Duodenal ulcers
- Non Bleeding Ulcers
- Pancreatitis
- Haemorrhoids
- Cholecystectomy
- Benign and Malignant Neoplasm
- Angiodysplasia
- Colorectal cancer
- Telangiectasias
- Telangiectasias of the Osler-Weber-Renu disease
- Vascular Malformation
- Gastritis
- Esophagitis
- Esophageal ulcers
- Varices
- Colitis
- Mallory-Weiss tear
- Gastric Erosions

Arthroscopy

Arthroscopy/Orthopaedic surgery (excision, ablation and coagulation of soft and cartilaginous tissue) in small and large joints of the body, excluding the spine but including:

- Ligament and tendon Release

- Contouring and sculpting of articular surfaces
- Capsulectomy in the Knee
- Chondreplasty in the Knee
- Debridement of inflamed synovial tissue
- Chondromalacia Ablation
- Chondromalacia and tears
- Plica Removal
- Meniscectomy
- Loose Body Debridement
- Lateral retinacular release

Ablation of soft, cartilaginous and bony tissue in Minimal Invasive Spinal Surgery including

- Percutaneous Laser Disc Decompression/Discectomy of the L4-5 and L5-S1 lumbar discs, including Foraminoplasty
- Percutaneous Cervical Disc Decompression/Discectomy
- Percutaneous Thoracic Disc Decompression/Discectomy

Gynaecology

Open and laparoscopic gynaecological surgery (incision, excision, resection, ablation, vaporization, coagulation and haemostasis) of soft tissue

ENT

Endoscopic endonasal surgery (incision, excision, resection, ablation, vaporization, coagulation and haemostasis of soft tissue and cartilage) including:

- Endonasal/sinus Surgery
- Partial turbinectomy
- Polypectomy
- Dacryocystorhinostomy
- Frontal Sinusotomy
- Ethmoidectomy
- Maxillary antrostomy
- Functional endoscopic sinus surgery

General Surgery

Open, laparoscopic and endoscopic surgery (incision, excision, resection, ablation, vaporization, coagulation and haemostasis) including:

- Appendectomy
- Skin incision
- Excision of external and internal lesions
- Complete or partial resection of internal organs, tumors and lesions

- Biopsy

Performance testing

Litho Evo was subjected to performance testing in accordance with the following recognized consensus standards related to electromagnetic compatibility, electrical safety and performances:

- IEC 60601-1:2012, ed 3.1, Medical Electrical Equipment - Part 1: General Requirements For Basic Safety And Essential Performance
- IEC 60601-1-2 Edition 4: 2014, Medical Electrical Equipment - Part 1-2: General Requirements For Basic Safety And Essential Performance - Collateral Standard: Electromagnetic Compatibility - Requirements And Tests.
- IEC 60601-2-22: 2012-10 ed 3.1, Medical Electrical Equipment - Part 2-22: Particular Requirements For Basic Safety And Essential Performance Of Surgical, Cosmetic, Therapeutic And Diagnostic Laser Equipment
- IEC 60825-1 Ed. 3.0 (2014) Safety of laser products – Part 1: Equipment classification and requirements
- Software verification and validation testing were conducted and documentation was provided as recommended by FDA's Guidance for Industry and FDA Staff, "Guidance for the Content of Premarket Submissions for Software Contained in Medical Devices".

Litho Evo passed all the required testing and is in compliance with all applicable sections of the above-mentioned performance standards.

Comparison with predicate device:

The subject and unmodified devices have the same intended use and the same fundamental scientific technology, based on Holmium laser sources.

Summary

The modified device Litho Evo is substantially equivalent to its identified predicate device.