

Model EQ-99X  
LDLS™  
Laser-Driven Light Source



Operation and Maintenance Manual

Revision 1 January 2014

Part Number DOC-6521



Copyright © 2014 Energetiq Technology Inc. All rights reserved.

Energetiq products are covered by US and foreign patents. All technical information, including drawings, schematics and specifications contained in this manual are the property of Energetiq and shall not be reproduced in whole or in part without the written consent of Energetiq. The content of this manual is subject to change without notice.

Energetiq Technology Inc.

7 Constitution Way, Woburn, MA 01801 USA

Tel. +1 (781) 939-0763

Fax +1 (781) 939-0769

E-mail: [service@energetiq.com](mailto:service@energetiq.com)

<http://www.energetiq.com>

## Declaration of Conformity

We, the manufacturers

Energetiq Technology Inc.  
7 Constitution Way  
Woburn, Massachusetts 01801 USA

hereby declare that the product family

LDLS™ Laser-Driven Light Source  
Model EQ-9X Series High Brightness Broadband Light Source

is in conformity with the requirements of the following standards

|                                  |  |
|----------------------------------|--|
| EN 61010-1:2010<br>(3rd Edition) | Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use: Part 1 – General Requirements        |
| CISPR 11:2009<br>+A1:2010        | Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement |
| IEC61000-4-2:2001                | Electrostatic Discharge Immunity   |
| IEC61000-4-3:2010                | Radiated Electromagnetic Field Immunity  |
| IEC61000-4-4:2012                | Electrical Fast Transient Burst Immunity   |
| IEC61000-4-6:2008                | Radio Frequency Common Mode Immunity   |
| IEC61000-4-8:2009                | Power Frequency Magnetic Field Immunity  |
| EN61326-1:2006                   | Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements                       |
| EN60825-1 (2007)                 | Safety of laser products - Part 1: Equipment classification and requirements   |

in accordance with the provisions of

|             |   |
|-------------|---|
| 2006/95/EC  | EU Low Voltage Directive                    |
| 2004/108/EC | EU Electromagnetic Compatibility Directive. |

Signed,

  
\_\_\_\_\_  
Paul Blackburn, CEO

28 January 2014  
Date

at Woburn, Massachusetts USA

CE Authorized Person in the Community:

Paul Laidler, Business Director (Machinery)  
TÜV SÜD Product Service  
Belasis Business Centre  
Coxwold Way  
Billingham TS23 4EA, UK  
Tel. +44 (0) 1642 345637



## Table of Contents

|   |    |
|---|----|
| <i>Chapter 1</i> .....                        | 1  |
| General Information .....                     | 1  |
| Safety .....                                  | 1  |
| <i>Chapter 2</i> .....                        | 8  |
| Description .....                             | 8  |
| General .....                                 | 8  |
| System Description .....                      | 11 |
| Power Supply Controller .....                 | 12 |
| Lamp House .....                              | 13 |
| <i>Chapter 3</i> .....                        | 16 |
| Installation .....                            | 16 |
| Unpacking .....                               | 16 |
| Connections .....                             | 16 |
| Installation Procedure .....                  | 22 |
| <i>Chapter 4</i> .....                        | 24 |
| Operation .....                               | 24 |
| Starting .....                                | 24 |
| Stopping .....                                | 24 |
| <i>Chapter 5</i> .....                        | 26 |
| <b>Maintenance</b> .....                      | 26 |
| <b>EQ-99 SMA Fiber Cleaning Process</b> ..... | 26 |
| <b>Troubleshooting</b> .....                  | 30 |
| Lamp Replacement .....                        | 32 |

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.