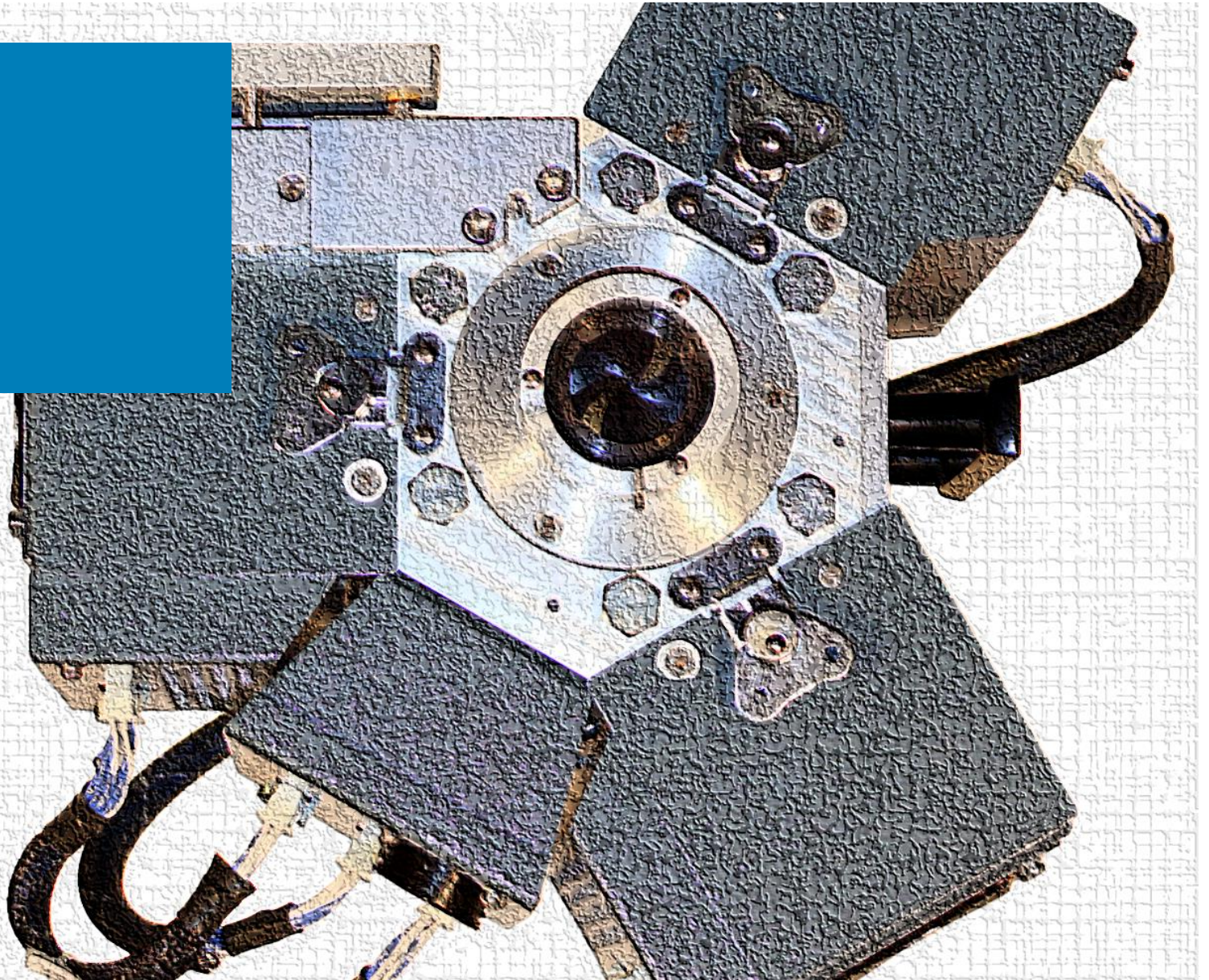# SEMRAY® UV PC6003 INTRODUCTION

HNA, October 2020
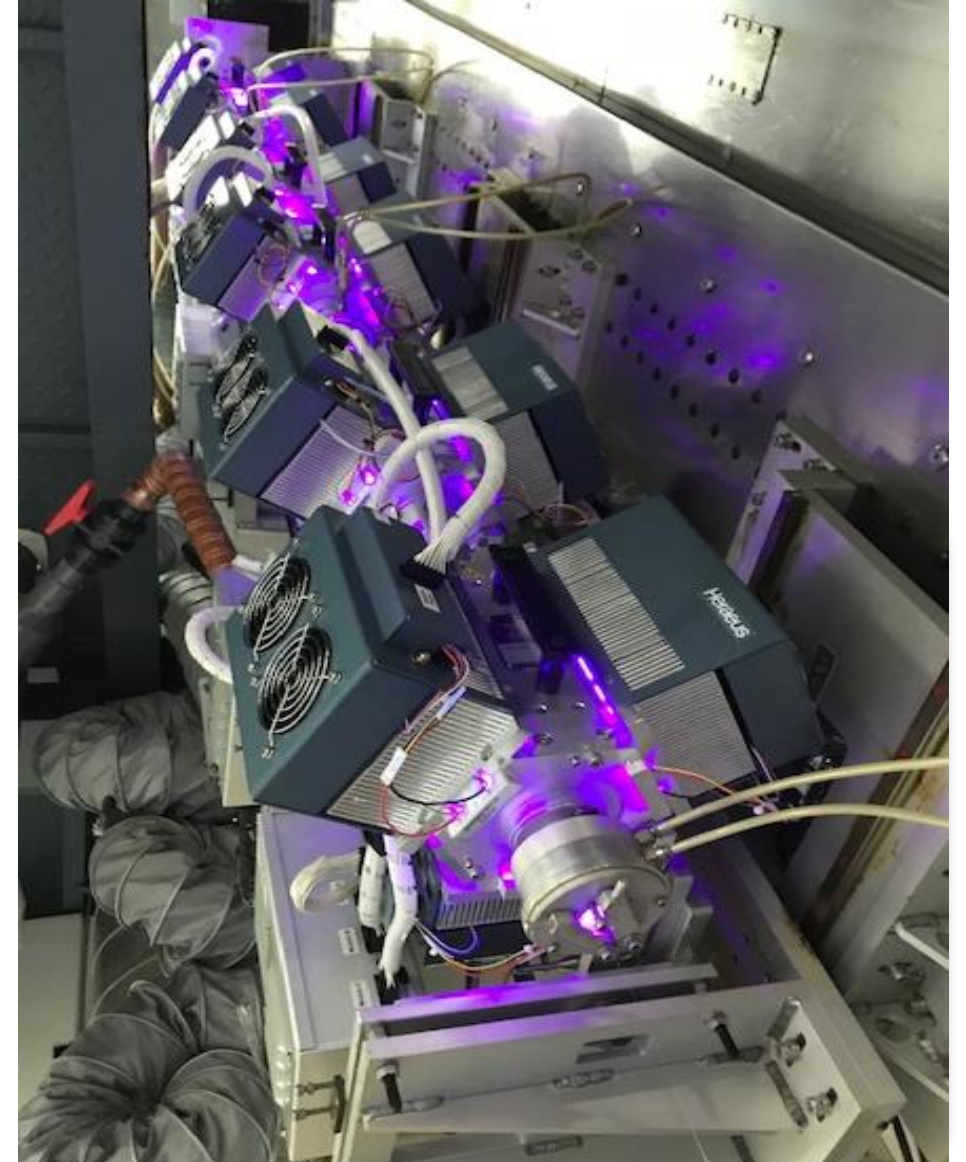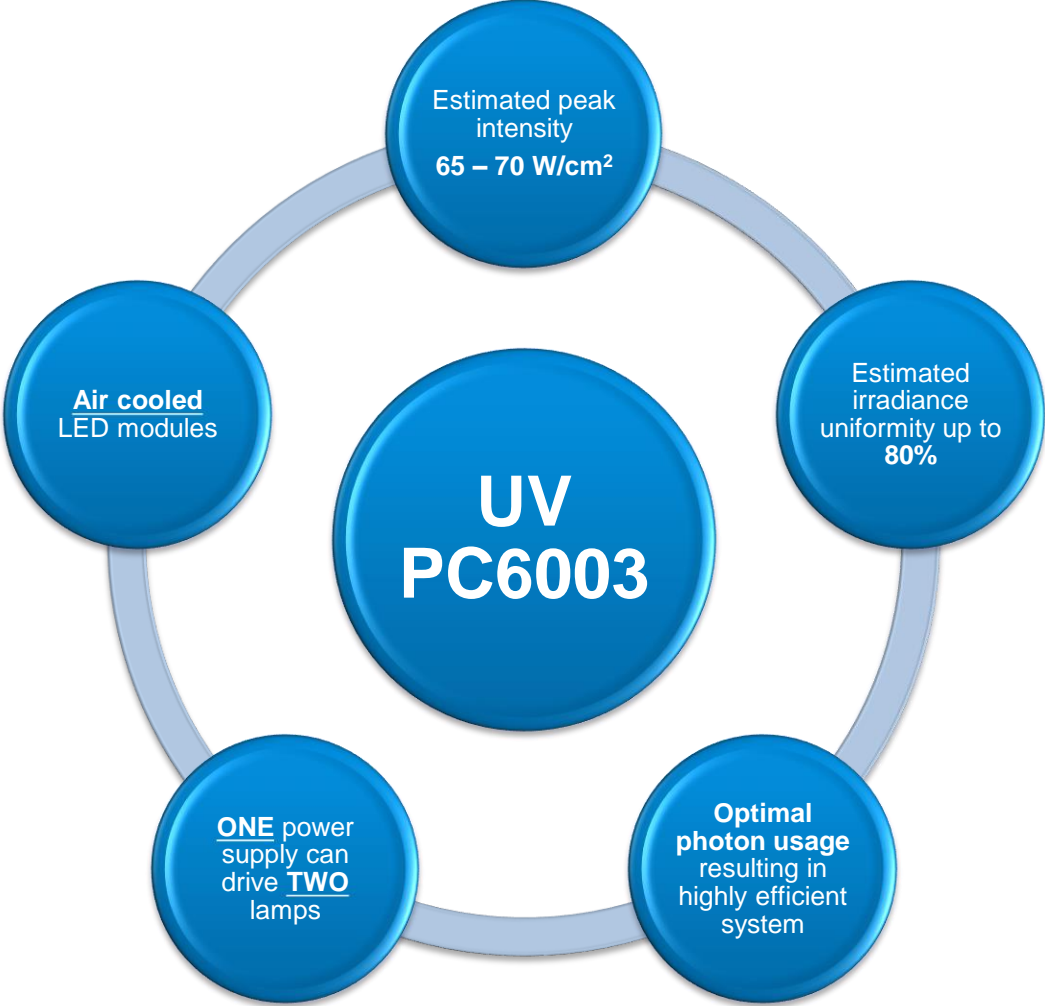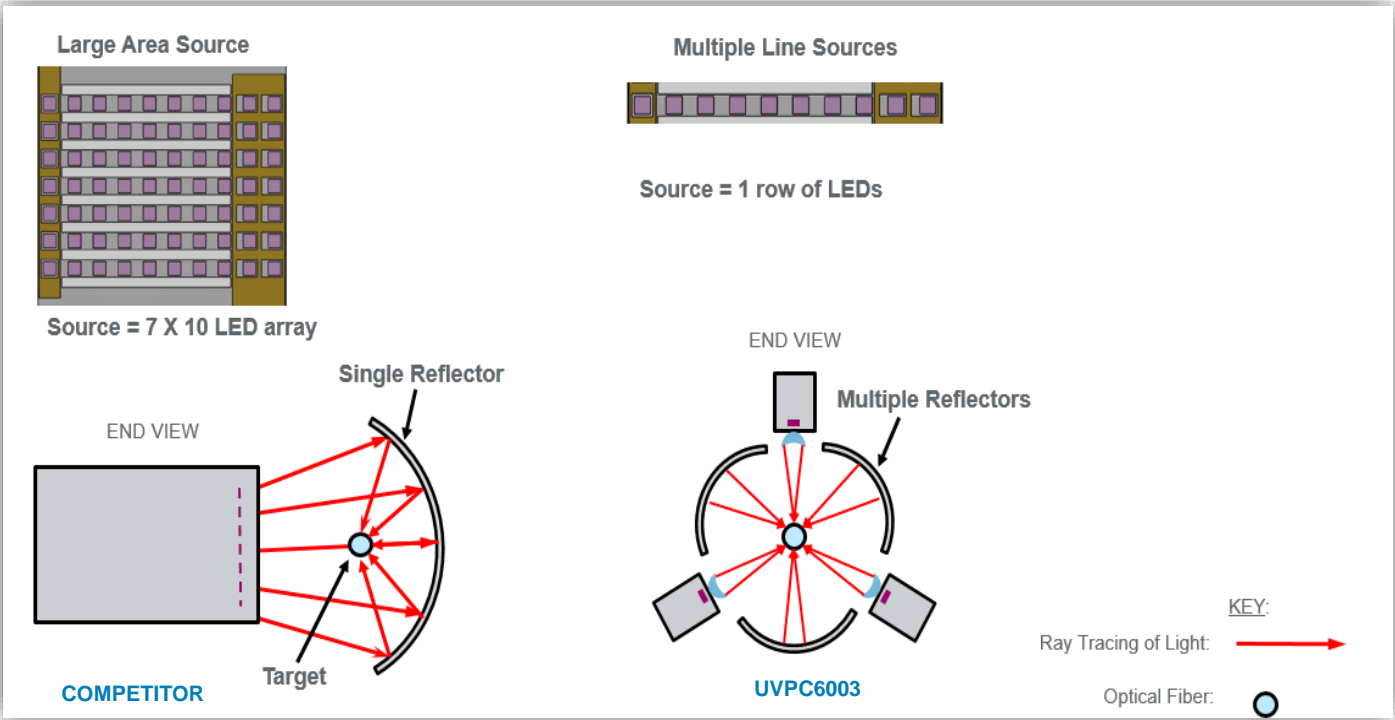
Heraeus

Heraeus Noblelight
UV PC6003 UV LED Lamp System

Heraeus is introducing the **most advanced UV LED curing system for the optical fiber market**. Designed from the ground up for the fiber drawing process, the Semray® UV PC6003 lamp system offers the **class leading irradiance and uniformity** required by the **line speeds of today and tomorrow**. The UV PC6003's low power consumption offers **substantial electrical savings**, and its ability to operate two lamps from one power supply is a reflection of its efficiency.
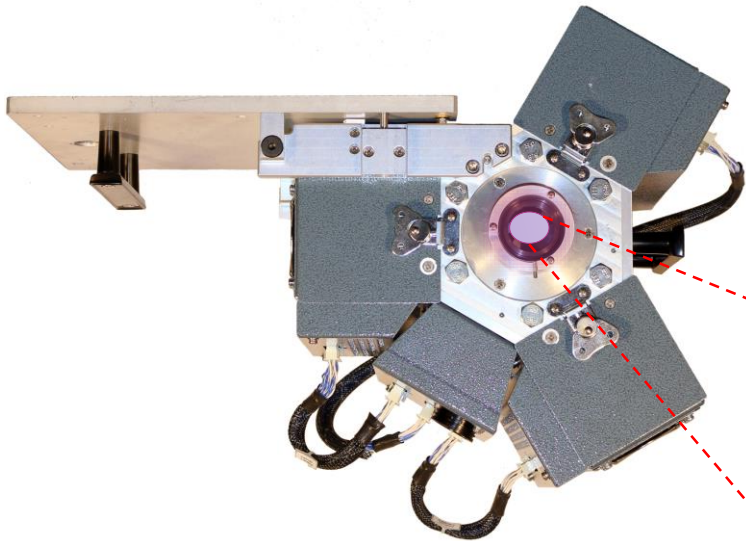

- Positive feedback on curing and product performance from all trial customers
  - "*best in class*"

- Successfully tested at industry's highest speed draws up to 3400 m/min
  - *Limited by draw tower mechanics*

- Achieved highest speed draws with 4 lamps
  - *(vs. typically 8 to 9 MW lamps)*

THE INNOVATION OF SEMRAY® UV PC6003
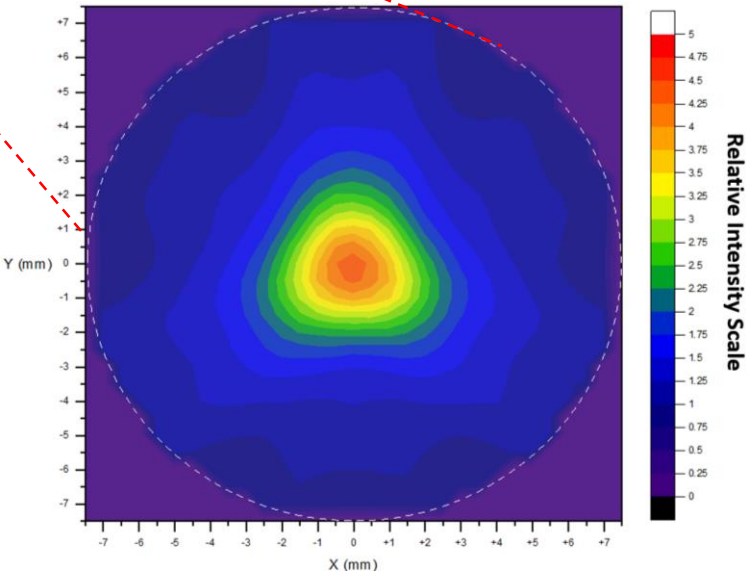
SEMRAY® UV PC6003 PERFORMANCE

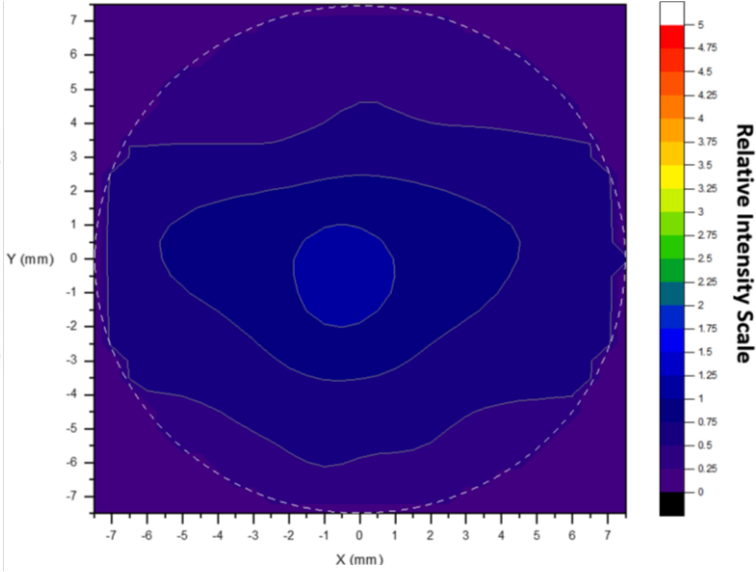*Optical irradiance measured within curing tube center of UV PC6003*

HIGH PEAK INTENSITY

- ESTIMATED UP TO 4X HIGHER THAN COMPETITOR PRODUCTS. (395nm)

HIGH UNIFORMITY

- ESTIMATED UP TO 80% AT TARGET VS <50% FOR COMPETITOR PRODUCT.

PROVEN RESULTS AT HIGH DRAW SPEEDS

- MET CURING REQUIREMENTS UP TO 3,400 m/min.

PC6003

COMPETITOR

SEMRAY® UV PC6000 POWER SUPPLY/CONTROLLER

FRONT PANEL

- **Infinite 40 to 100% UV Power Level** adjustability
- **USB Port** on front panel facilitates easier fault analysis and system firmware upgrades
- 19" Rack mount (also has feet for free-standing use)

REAR PANEL

- **Universal Industrial Input Power**
  - › Auto ranging, 200-240 Vac (17A service); 1φ; 50/60 Hz
- **3 Optional World Leading Industrial Open Communication Protocols** for today's Digital and Automation needs
  - › DeviceNet™, ProfiBus®, EtherNet/IP™
  - › Dry Contact (standard) - Backward compatible with legacy *Fusion UV Systems & Heraeus* MW UV systems
- **IoT Enabled** for today's and the future Digitalization Roadmap
  - › Real-time data display & diagnostic capable
  - › *AIMS PC Series*

MODULARITY & SERVICEABILITY

Easily replaceable LED modules and power source modules

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SEMRAY® UV PC6003 UV LED SYSTEM

AC in

Length to be determined by site

22 lbs (10 kg)

Standard Lengths = 10 or 24 meters

POWER

COMMUNICATION

40 lbs (18 kg)

AIMS

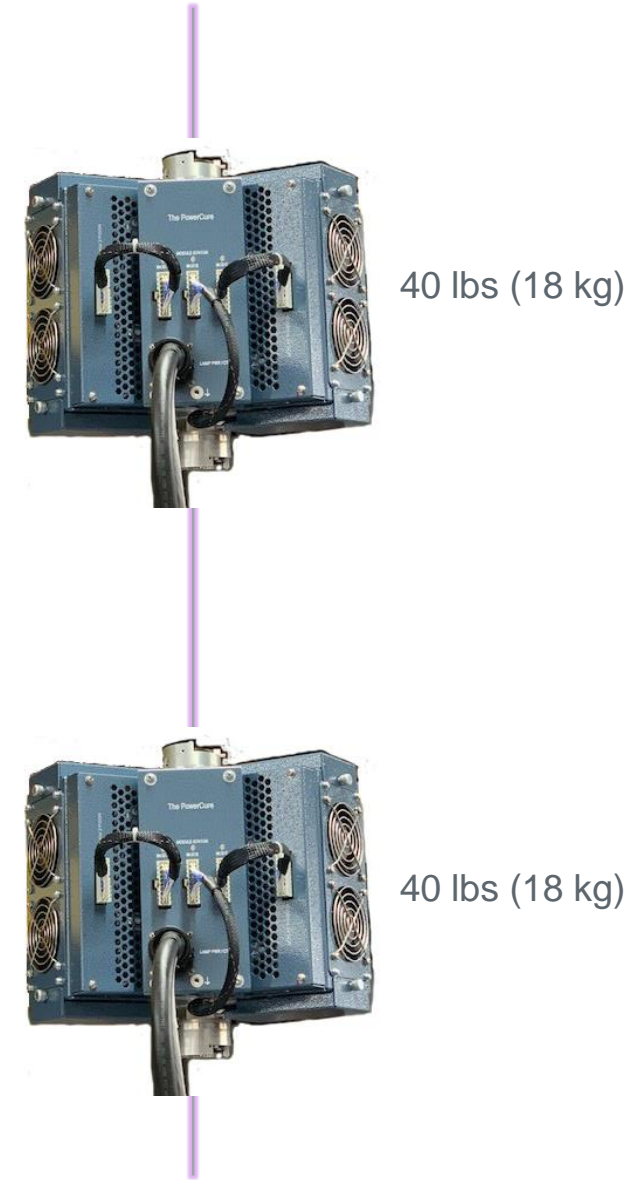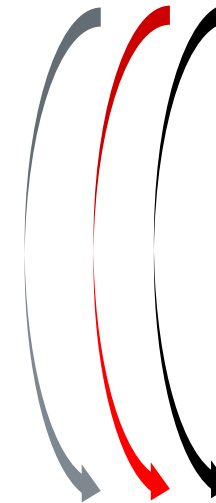(optional for IIoT/ digitization)

40 lbs (18 kg)

System characteristics:
- **Innovative Photon Management**
  - › High UV output/power
  - › Peak UV irradiance
  - › Uniformity and homogeneous cure at target
  - › Convergence of UV sources (3 to 1)
- **High energy efficiency**
- **~99% Power Factor Correction (PFC)** under full load
- Able to operate **1 or 2 lamp heads with one PC-CPS Driver**
- **Meets and exceeds World-Wide Standards & Directives**
- Green Technology (RoHS)

CUSTOMER BENEFITS

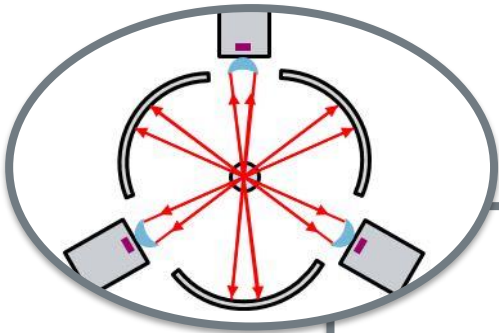Customer achieves up to 3x energy savings versus microwave products (80+% Energy Savings).

Customer maintains high throughput with fewer number of lamps.

Customer has reduced infrastructure costs and facility noise with elimination of blowers.

Customer has minimal investment cost because UV PC6003 lamps are drop in replacement for microwave lamp retrofit.

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WHY IS SEMRAY® UV PC6003 BETTER THAN THE COMPETITION?

Innovative Photon Management

We use our UV more efficiently than our competitors*

Is there proof?

Through competitor benchmarking* we have demonstrated the following for a high draw speed customer:

- At 75% power level and 3000m/min customer meets their cure specification.

- The competitor must run at 100% power level to meet the same cure specification.

- Benchmarking demonstrated Semray® UV PC6003 consumes 40% less power than competitor per line for customer's specific draw line setup.
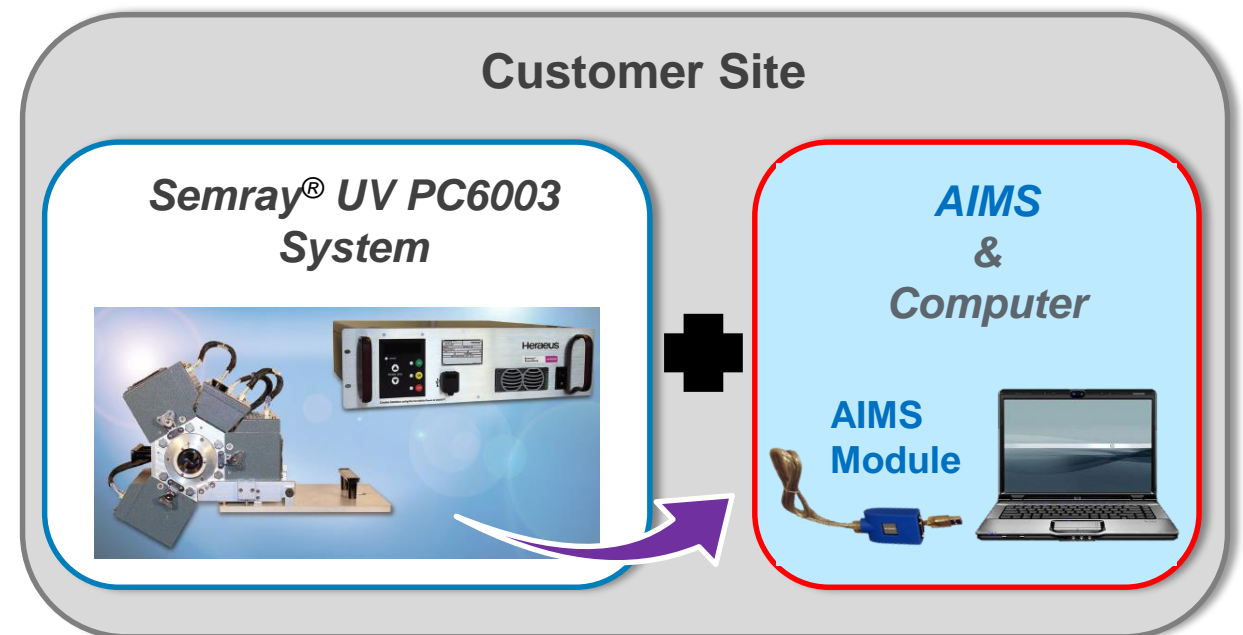
POWER CONSUMPTION STUDY		
	UV PC6003	Competitor*
Lamps per 1 line	5	5
Speed	3000 m/min	3000 m/min
Measured power consumption per line	4.8kW	7.9kW

SOLUTIONS ENABLING IIOT FOR YOUR FACTORY: PC AIMS SERIES

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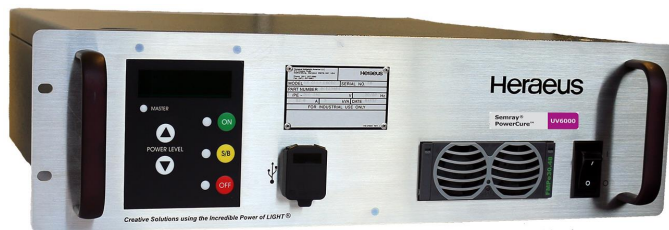
WHAT IS **AIMS?**

➢ **AIMS** = **A**dvanced **I**ntelligent **M**onitoring **S**ystem

➢ AIMS specific software application in conjunction with a module is used to monitor the system parameters during real-time operation

➢ Capable of monitoring up to **30** *Semray*$^®$ *UV PC6003 Systems*

AIMS

Advanced Intelligent Monitoring System

Customer Site

Semray$^®$ *UV PC6003 System*

AIMS & Computer

AIMS Module

SMART MANUFACTURING NEEDS SMART UV CURING - THE SOLUTION

Benefits of Smart UV Curing Systems

› Specially design electronics to provide accurate real-time data

- Monitors and enhance performance
- Increases process reliability and production rates
- Enhanced diagnostics speeds troubleshooting
- Improves preventive maintenance and maintenance planning
- Increase equipment and production **up-times**
- Enables operational **intelligence**

AIMS PC SERIES

AIMS software, together with the cable/module, displays and monitors performance parameters of *Semray® UV PC6003* Systems during real-time operation to improves system uptime and maintenance.
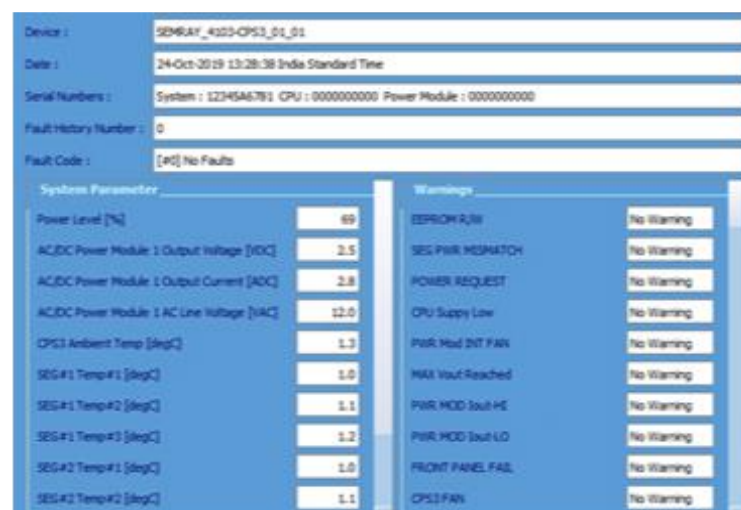
- **Dashboards:** graph, gauge, system summary, & network summary.

Reduce downtime and unscheduled shutdown with on-board maintenance schedule monitoring.

Displays a high level status of units.

Displays up to 6 user-selectable parameters simultaneously.

Centralize data for all *Semray® UV PC6003 Systems* in your site.

Automatically creates a data file for each day of operation.

On Board "hour meters tool" to track usage/life.

Monitors and automatically notifies users via e-mail (warnings & faults).

Emails periodic system summary report.

Able to log data in 15, 30, or 60 second intervals.

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Heraeus

Thank you.

Questions?