



# Broadband Plasma Light Sources

## XWS SERIES

WE MAKE LIGHT BRIGHTER™



## Laser produced plasma broadband light sources (XWS series)

ISTEQ's XWS light source products have been specially developed to be used for a variety of applications, including spectroscopy, high resolution microscopy, thin - film measurement, surface metrology and others. The sources are based on cutting-edge technology, covered by EU and US patents.

### APPLICATION FIELDS

- Absorption and fluorescence spectroscopy
- Diagnostics systems in microelectronics - contamination and defect control
- Surface metrology, ellipsometry and scatterometry
- Microscopy, including confocal and fluorescence
- Optical component testing
- Detectors in chromatography, microfluidics, lab-on-a-chip, droplet spectrometers, cytofluorimeters, etc.

### MAIN ADVANTAGES

- CW laser plasma discharge
- Broad spectral range: 190 – 2500 nm
- High spectral brightness
- High temporal and spatial stability:  
STD < 0.15%
- Long life time due to electrodeless operation: 10,000 hours
- The small dimensions of the emitting volume considerably expand the range of XWS applications
- External source control and parameters monitoring via Software, Windows GUI



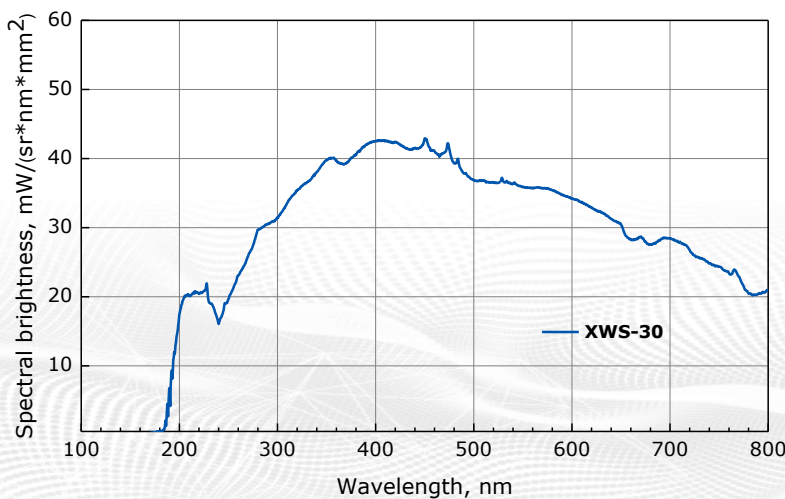
# XWS-30 compact broadband plasma light source



ISTEQ's XWS-30 light source product has been specially developed for those customers who need a super compact broadband light source with low heat dissipation while keeping the plasma brightness high.

## SPECIAL FEATURES XWS-30

- A unique concept of a compact “all-in-one” source
- Very compact 149x166x145 mm, no external chiller
- Spectral brightness up to 48 mW/(mm<sup>2</sup>·sr·nm)
- Spectral range 190 – 2500 nm
- Output configuration – Free space or FCU
- Full system control by Laptop/PC via USB-RS 485 adapter
- *Optional – spectral range 250 – 2500 nm*



**Spectral brightness of XWS-30 light source in UV and VIS spectral region**



## XWS-65 broadband plasma light source

ISTEQ's XWS-65 light source product has been specially developed for those customers who need a powerful light source with high spectral brightness and high output power (free space or via fibre)

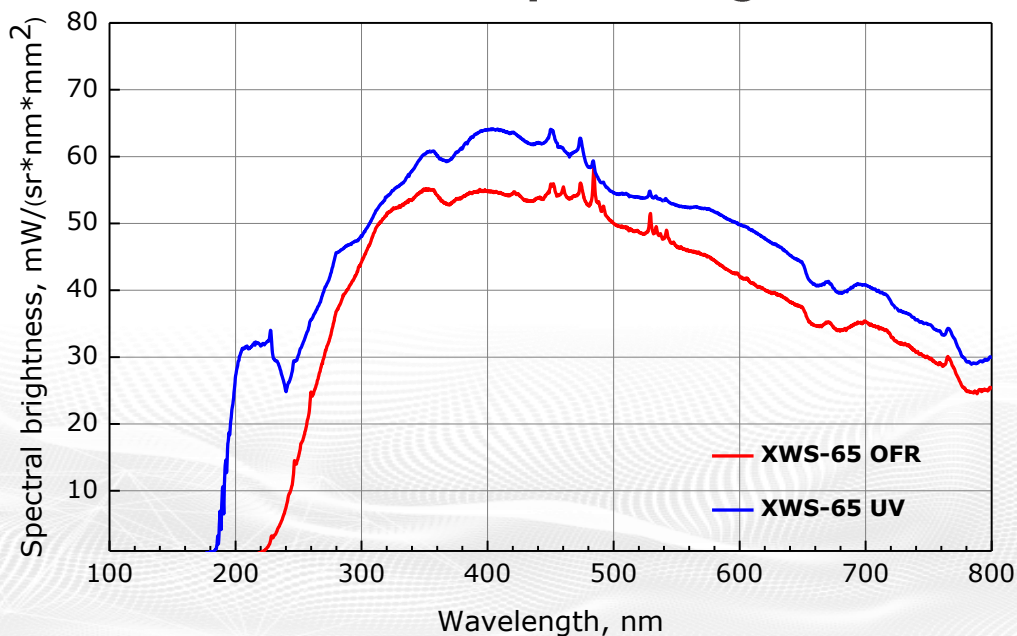
### SPECIAL FEATURES XWS-65

- Spectral range 250 - 2500 nm, Ozone-free (OFR) configuration
- Spectral range 190 - 2500nm, UV configuration
- High spectral brightness up to 68 mW/(mm<sup>2</sup>·sr·nm)
- High temporal and spatial stability STD < 0.15%



- Available with Retroreflector (for Single Port output)
- Available in Dual Port configuration
- Output configuration: Free space or FCU
- Available with Air Cooled/Water Cooled Optical Head
- External source control and parameters monitoring by Laptop/PC via:
  - RJ45 (Ethernet, Web interface),
  - COM-port (RS-232)

### Spectral brightness of XWS-65 light source in UV and VIS spectral region



# XWS-X high UV broadband plasma light source

ISTEQ's XWS-X light source product has been specially developed for those customers who need a powerful light source with high UV generation.

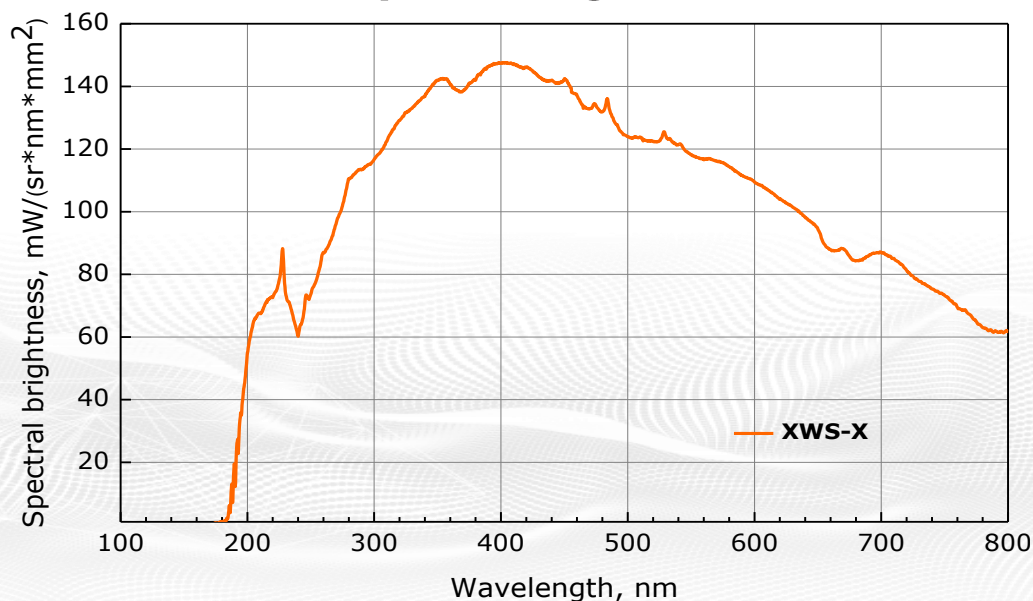
## SPECIAL FEATURES

- Significantly higher brightness across the whole spectral range in comparison to XWS-65 UV
- Maximum spectral brightness up to 140 mW/(mm<sup>2</sup>·sr·nm)
- x6 brightness improvement at UV range below 250 nm in comparison to XWS-65 UV
- **Extreme** temporal and spacial stability: STD < 0.05%



- Available with Retroreflector (for Single Port output)
- Available in Dual Port configuration
- Output configuration: Free space or FCU
- Available with Air Cooled/Water Cooled Optical Head
- External source control and parameters monitoring by Laptop/PC via RJ45 (Ethernet, Web interface), COM-port (RS-232)

## Spectral brightness of XWS-X light source in UV and VIS spectral region



## XWS specifications

MODEL	XWS-30	XWS-65	XWS-X
<b>Source Performance</b>			
Spectral range 190 - 2500 nm UV configuration	✓	✓	✓
Spectral range 250 - 2500 nm OFR configuration	✓	✓	—
Maximum spectral brightness for UV configuration (avg for 350 - 550 nm), mW / (mm <sup>2</sup> ·nm·sr), min / avg / max	38/43/48	60/65/68	120/125/130
Maximum spectral brightness for OFR configuration (avg for 350 - 550 nm), mW / (mm <sup>2</sup> ·nm·sr), min / avg / max	38/43/48	50/56/60	—
Output power Free space	up to 1 W	up to 1.8 W	up to 1.5 W
Output power via fiber 600 μm, mW min / avg / max	300/ 319 /350	510/ 555 /600	550/ 600 /650
Emitting body size for UV configuration (spectral range 350 - 550 nm), μm	310x480	360x600	285x485
Lifetime (hours)	10,000	10,000	10,000
Temporal and spatial stability	STD < 0.15%	STD < 0.15%	STD < 0.05%
Lamp medium	Xenon	Xenon	Xenon
<b>Optional Configurations</b>			
Free space light output (default)	✓	✓	✓
Retroreflector (Single port output only)	—	✓	✓
Dual port output	—	✓	✓
FCU light output	✓	✓	✓
Air-cooled Optical Head	✓	✓	✓
Optical Head	—	✓	✓

MODEL	XWS-30	XWS-65	XWS-X
<b>Optical Head Design</b>			
Free space output NA (by default)	0.5	0.4	0.4
Maximum output NA (upon request)	0.6	0.55	0.55
External optic interface	C-mount, 30 Thorlabs cage	C-mount, 30 Thorlabs cage	C-mount, 30 Thorlabs cage
Distance from plasma to output window, mm	14.4	22	22
Fiber interface (only for FCU version)	SMA or FC	SMA or FC	SMA or FC

### Additional Features

External control	USB RS-485 adapter	RJ45 (Ethernet, Web interface), COM-port (RS-232)	RJ45 (Ethernet, Web interface), COM-port (RS-232)
Interlock/Remote plasma control	Lemo FGG	DB-15 connector	DB-15 connector

### Dimensions

Optical head dimensions (mm)	149x166x145	130x122x106	130x122x106
Power supply dimensions (mm)	210x85x46	351x175x232	351x175x232
Water cooled optical head dimensions (mm)	—	113x150x106	113x150x106
Liquid cooling unit dimensions (mm)	—	350x166x184	350x166x184

### Facility Requirements

Electrical	100 - 240 V, 50/60 Hz	100 - 240 V, 50/60 Hz	100 - 240 V, 50/60 Hz
Gas purging (only for UV configuration)	Nitrogen	Nitrogen	Nitrogen

### Custom design

Upon a request is possible to modify ISTEQ serial product to meet customer requirements.





WE MAKE LIGHT BRIGHTER™



**ISTEQ B.V.** is located in the High Tech Campus Eindhoven which is famous as the "**smartest km<sup>2</sup>**" in The Netherlands. The campus holds more than 125 companies and institutes with more than 10,000 researchers, developers and entrepreneurs working on developing future cutting edge technologies and products.

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