



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



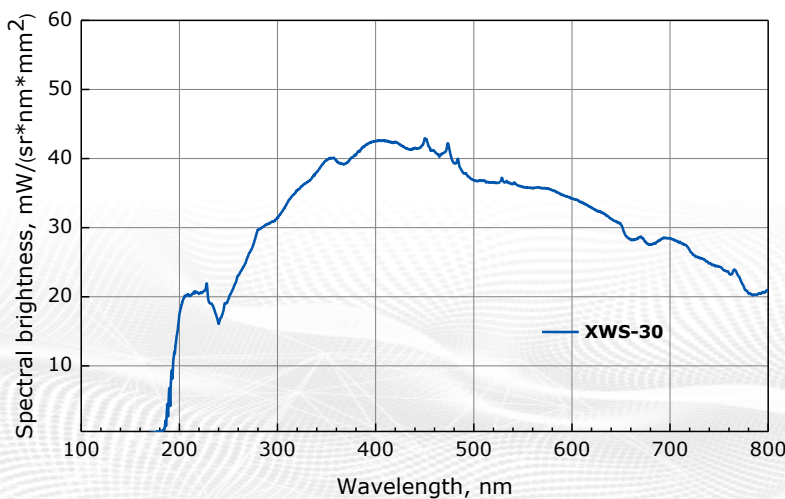
XWS-30 compact broadband plasma light source



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/(mm²·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)

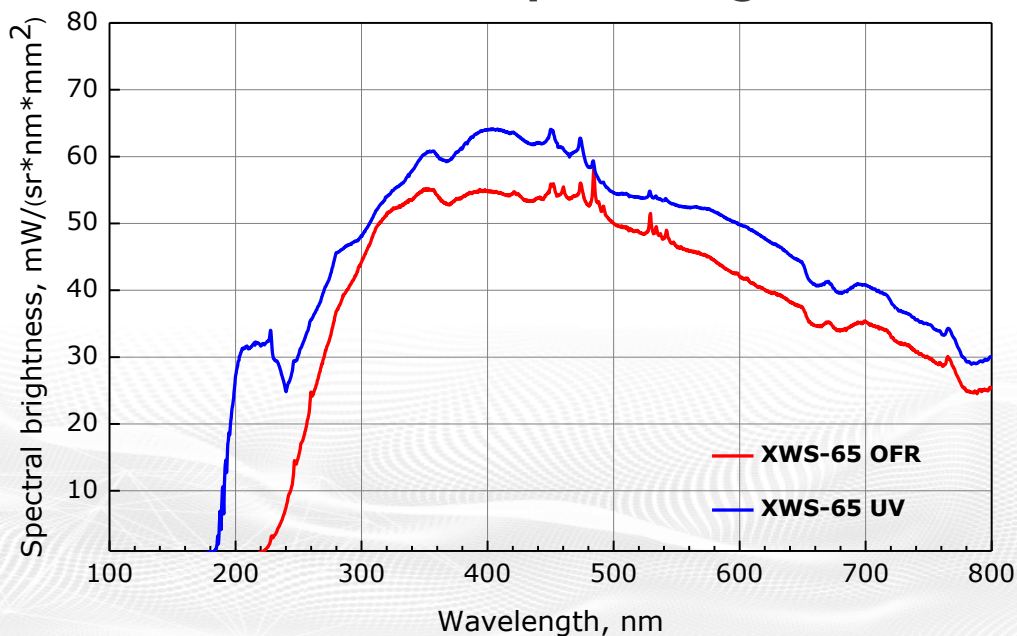
SPECIAL FEATURES XWS-65

- Spectral range 250 - 2500 nm, Ozone-free (OFR) configuration
- Spectral range 190 - 2500nm, UV configuration
- High spectral brightness up to 68 mW/(mm²·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.

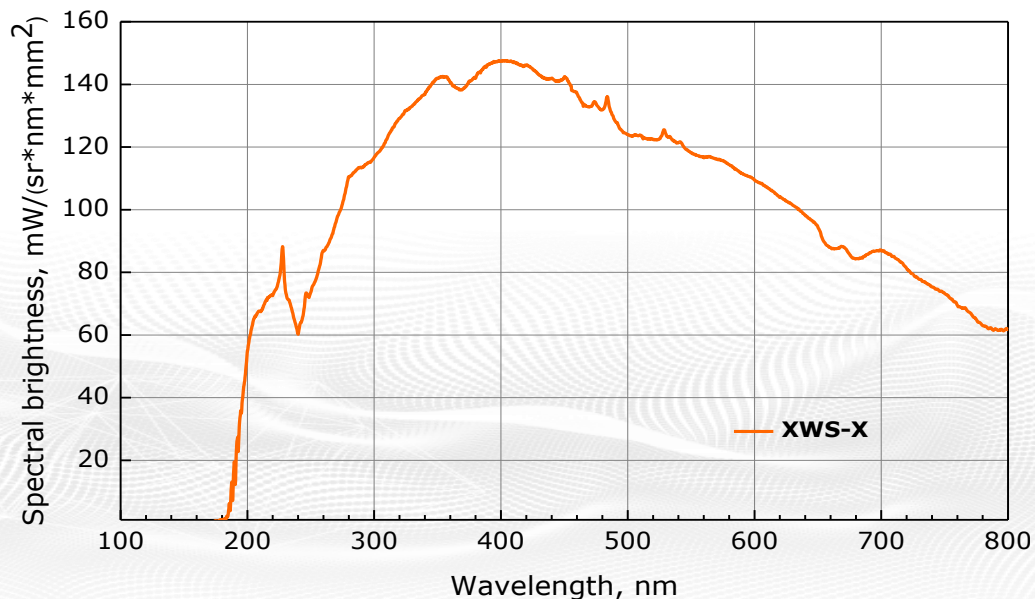
SPECIAL FEATURES

- Significantly higher brightness across the whole spectral range in comparison to XWS-65 UV
- Maximum spectral brightness up to 140 mW/(mm²·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
Source Performance			
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 ² ·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 ² ·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
Optional Configurations			
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
Optical Head Design			
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 km²**" 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.

You are always welcome to contact ISTEQ for more information

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