Xenon Light Source 300W Monochromatic Light with Filters
MAX-351

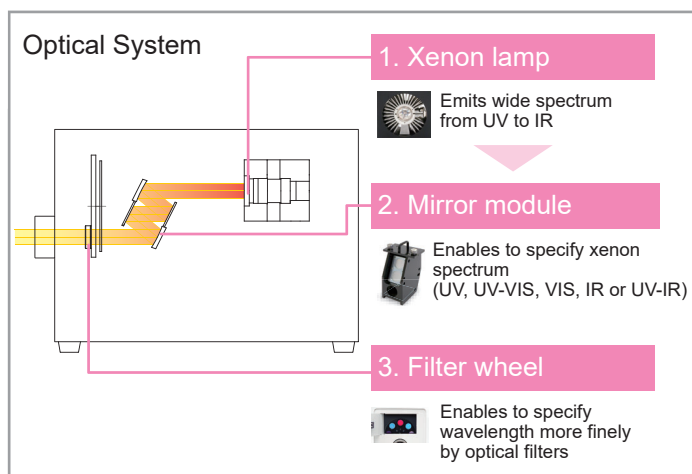## Very bright, heatless, wavelength-selectable xenon light source

Features

- Bright monochromatic light
- Built-in filter wheel
- IR heat blocking
- Adjustable light intensity
- Timer and shutter function
- Remote controller

Applications

- Photocatalyst
- Photochromism
- Artificial photosynthesis
- Chemical analysis

Optical System

1. Xenon lamp

Emits wide spectrum from UV to IR

2. Mirror module

Enables to specify xenon spectrum (UV, UV-VIS, VIS, IR or UV-IR)

3. Filter wheel

Enables to specify wavelength more finely by optical filters

# Very bright, heatless, wavelength-selectable xenon light source

The MAX-351, 300W xenon light source, is the perfect illuminator with complete heat blocking design, using an originally designed mirror module.
The MAX-351 has all useful functions such as mirror module, filter wheel, ND variable control, timer, shutter and remote control.

MAX-351
Compact Xenon Light Source

ASAHI SPECTRA

Applications

Monochromatic Light with Optical Filters
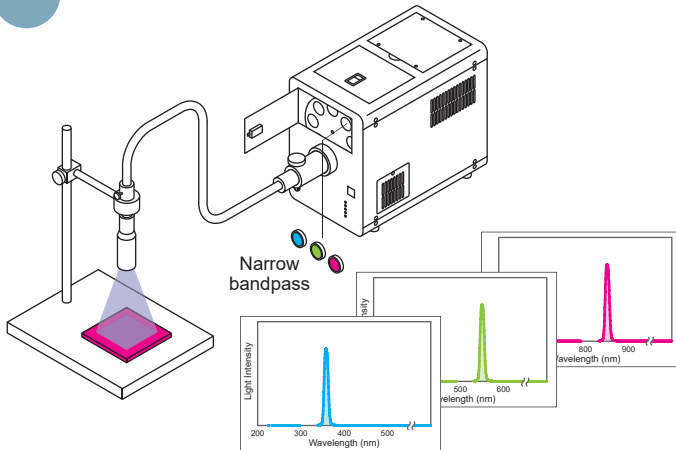
Narrow bandpass

- Bright monochromatic light
- Instead of multiple wavelength laser
- Output beam is brighter than monochromator
- Selectable various wavelength by optical filters
- Unwanted IR heat and stray light are removed by mirror module

■ Narrow bandpass filter *Option

A wide variety of narrow bandpass filters from UV to IR wavelength range.

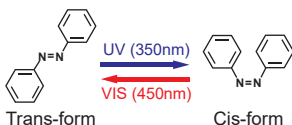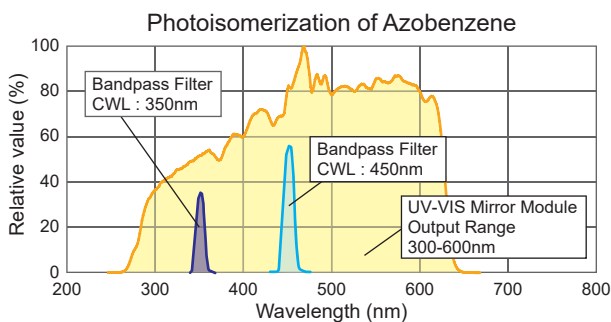**Lineup of 10nm interval from 260nm to 900nm**
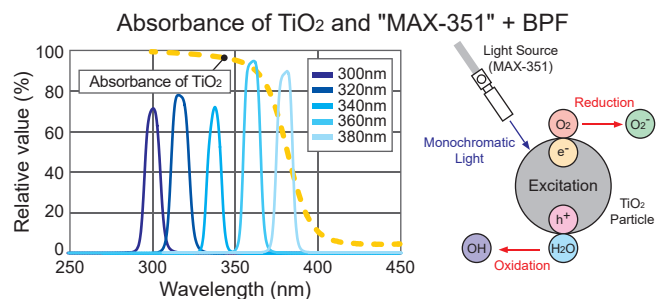260nm, 270nm, 280nm, ..., 880nm, 890nm, 900nm

Photochemistry

Photochromic Materials Research

- Heatless monochromatic light source suitable for research of photochromic behavior
- Embedded filter wheel enables to select any desirable wavelength (UV - VIS)

Photoisomerization of Azobenzene

Bandpass Filter CWL : 350nm
Bandpass Filter CWL : 450nm
UV-VIS Mirror Module Output Range 300-600nm

UV (350nm)
VIS (450nm)
Trans-form   Cis-form

Photocatalytic Study

- Suitable for evaluation of wavelength response
- Embedded filter wheel enables to select any desirable wavelength (UV - VIS)

Absorbance of TiO_2 and "MAX-351" + BPF

Absorbance of TiO_2

- 300nm
- 320nm
- 340nm
- 360nm
- 380nm

Light Source (MAX-351)
Monochromatic Light
Reduction
O_2 O_2^-
e^-
Excitation
TiO_2 Particle
h^+
OH H_2O
Oxidation

Applications
- ・Photocatalyst
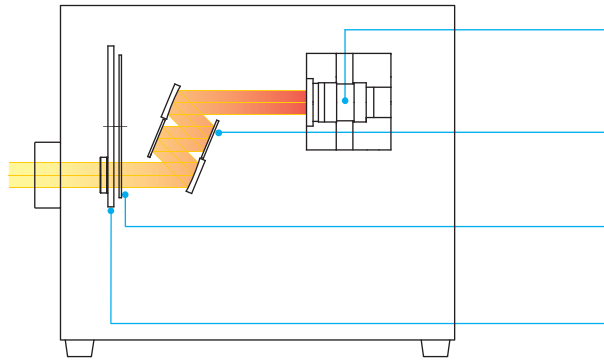- ・Chemical analysis
- ・Inspection lighting
- ・Photochromism
- ・Spectroscopy
- ・UV light disinfection
- ・Artificial photosynthesis
- ・Fluorescent observation
- ・Photodynamic therapy

...and for other Research & Development

Features

Optical System

Xenon Lamp
⌄
Mirror Module
⌄
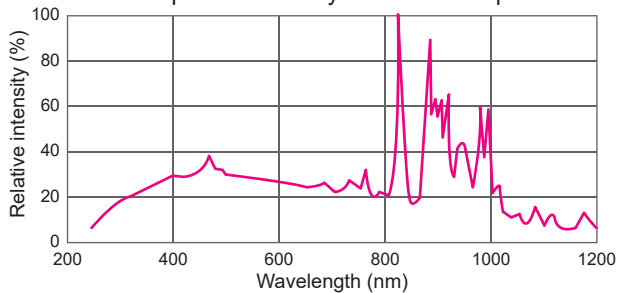**Light Intensity Control (ND Filter)**
⌄
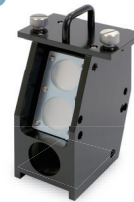**Filter Wheel**

Xenon Lamp

The 300W xenon lamp is built into the lamp cartridge. The lamp cartridge is easily replaced and optical axis alignment is not required.
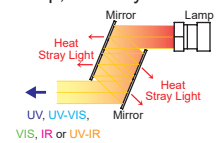
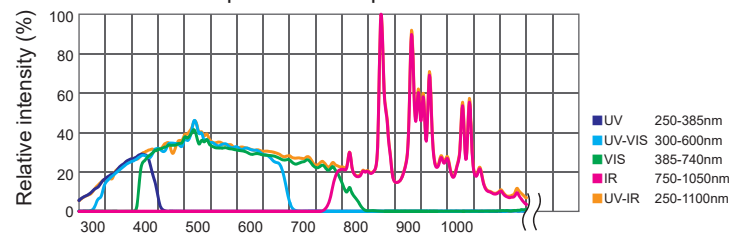### Spectral Intensity of Xenon Lamp

Mirror Module

The mirror module consists of several cold mirrors to block unwanted energy from xenon lamp, and only desired wavelength range is emitted. The MAX-351 offers 5 types of mirror modules, UV, UV-VIS, VIS, IR and UV-IR.

Spectrum Comparison

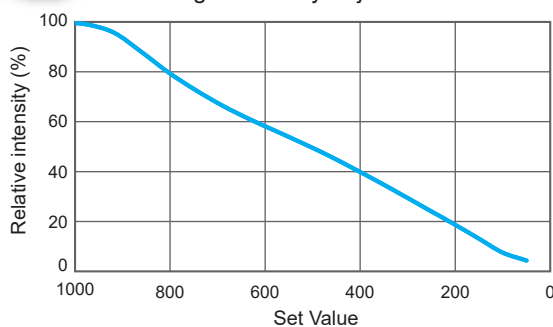|	
UV	250-385nm
UV-VIS	300-600nm
VIS	385-740nm
IR	750-1050nm
UV-IR	250-1100nm

Light Intensity Control (ND Filter)

Built-in variable ND filter allows precise control of lamp intensity by 1 step within the range of 50 to 1000 steps continuously as shown in the graph below.
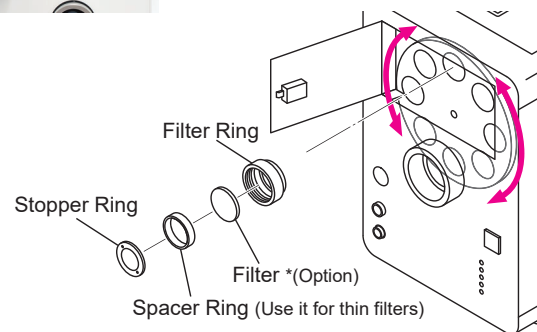
Light Intensity Adjustment

Filter Wheel

Max. 8 filters can be mounted on the filter wheel. Wide varieties of optical filters are available, such as shortpass, longpass and bandpass filters.
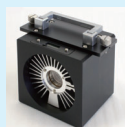

Filter Ring
Stopper Ring
Filter *(Option)
Spacer Ring (Use it for thin filters)

*Usable filter size: 25mm dia., thickness: 6mm or less.
*If UV-IR mirror module is used, filters from XBPA310-XBPA900 are only usable.

■ Lamp Cartridge

The lamp is mounted into the cartridge.
The lamp cartridge is easily replaced and optical axis alignment is not necessary.

The buit-in hour meter enable to check lamp hour.
The lamp cartridge is not compatible with the following models.
MAX-302 / MAX-303

■ External controller

The MAX-351 is controlled by our proprietary controller. Various functions can be easily controlled just by pressing the buttons of the controller and it has a comprehensive display.
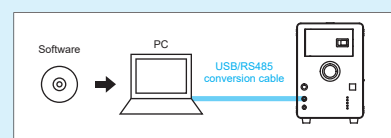
Main functions
· Lamp On/Off
· Timer function
· Shutter function Open/Close
· Filter position control
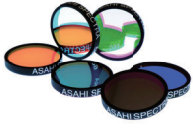· Light intensity adjustment

■ RS485 Remote Control

The MAX-351 can be controlled remotely by using RS485.
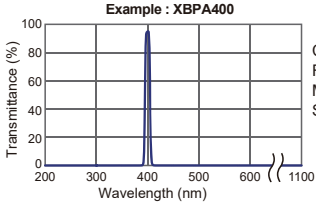Remote control is also available through our proprietary software.

Software
PC
USB/RS485 conversion cable

Options

Narrow Bandpass Filters

We offer a wide variety of narrow bandpass filters for a monochromatic illumination.

Example : XBPA400

CWL tolerance: 400±2nm
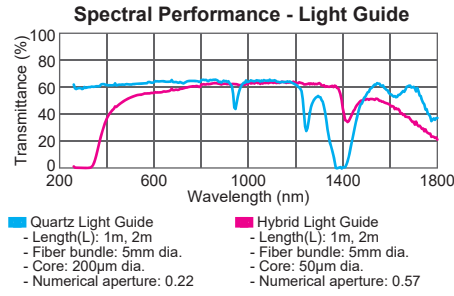FWHM tolerance: 10±2nm
Min. transmission: >85%
Size: 25mm dia.

Wavelength (nm)	Mirror Module	
254 - 290	UV-VIS	UV
300 - 380		
390 - 600		VIS
610 - 740		
750 - 900	IR	

*Contact us for details of a filter.
*If UV-IR mirror module is used, filters from XBPA310-XBPA900 are only usable.

Light Guide
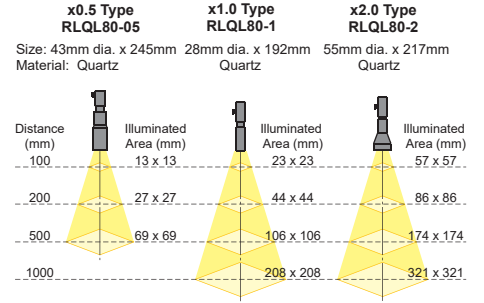
The output light from the MAX-351 is delivered to a desired direction by the light guide.
We also offer a multi-branch light guide for custom.

Spectral Performance - Light Guide

■ Quartz Light Guide
- Length(L): 1m, 2m
- Fiber bundle: 5mm dia.
- Core: 200μm dia.
- Numerical aperture: 0.22

■ Hybrid Light Guide
- Length(L): 1m, 2m
- Fiber bundle: 5mm dia.
- Core: 50μm dia.
- Numerical aperture: 0.57

Collimator Lens

Each collimator lens is designed to provide the uniform illumination by using with the light guide.

	x0.5 Type RLQL80-05	x1.0 Type RLQL80-1	x2.0 Type RLQL80-2
Size:	43mm dia. x 245mm	28mm dia. x 192mm	55mm dia. x 217mm
Material:	Quartz	Quartz	Quartz

Distance (mm)	Illuminated Area (mm) x0.5	Illuminated Area (mm) x1.0	Illuminated Area (mm) x2.0
100	13 x 13	23 x 23	57 x 57
200	27 x 27	44 x 44	86 x 86
500	69 x 69	106 x 106	174 x 174
1000		208 x 208	321 x 321

Direct Attachable Collimator Lens

The direct attachable collimator lens achieves a higher light intensity by connecting to a light source directly.

Straight type
MAX-DRLQ1-S

Downward type
MAX-DRLQ1-B

Package Contents

- MAX-351 main unit
- Mirror module *Choose UV, UV-VIS, VIS, IR or UV-IR
- Light guide adapter
- Filter fitting tool
- Controller cable (2m)
- USB/RS485 conversion cable (1.8m)
- Instruction manual
- Lamp cartridge
- Filter holder (8pcs)
- Controller
- AC power cord (3m)

General Specifications

Model:	MAX-351
Output wavelength:	250-1100nm *1
Input voltage:	AC100-240V ±10% 50 / 60Hz
Apparent power:	530VA or less *In case AC100V input / 50Hz
	520VA or less *In case AC240V input / 50Hz
Lamp type:	Xenon lamp 300W
Lamp life:	500h *2
Optical axis alignment:	Cartridge type (Alignment-free)
Cooling method:	Forced air cooling
Functions:	Shutter Open/Close, Timer function (1-99999s) Light intensity adjustment（50-1000: continuously variable）, Filter changer *3
Mirror module:	UV: 250-385nm, UV-VIS: 300-600nm, VIS: 385-740nm, IR: 750-1050nm, UV-IR: 250-1100nm *4
Control method:	Controller or Remote control *5
Remote control:	RS485 (Dedicated cable)
Safety mechanism:	Lamp off and warning lamp on when: Lamp error, device operation error, cooling fan error, filter exchange door open, mirror module cover open, lamp cartridge is not installed, internal temperature is abnormal Shutdown at AC input overcurrent (Internal fuses) *6
Recommended environment:	Temperature 10-35 deg C Humidity 70% or less *No condensation
Dimensions:	Main unit 196(W) x 330(D) x 294(H)mm *Excluding protrusions Controller 160(W) x 40(D) x 120(H)mm *Excluding protrusions
Weight:	Main unit 13.0kg Controller 1.0kg

*1 Depends on the mirror module installed.
*2 Average lifespan specifications as indicated by the lamp manufacturer.
*3 The filter that can be attached is 25mm dia. and t=6mm or less.（8 filters can be mounted.）
   If UV-IR mirror module is used, filters from XBPA310-XBPA900 are only usable.
*4 Optional filter can be attached.（Limited to UV, UV-VIS, VIS, IR）
   25mm dia., UV and UV-VIS: t=10mm or less, VIS: t=6mm or less, IR: t=5mm or less
*5 A table of commands for remote control is disclosed.
*6 The type of fuse selected depends on the input voltage.
   AC100V input: 6.3A/250VAC/ High breaking capacity / Time delay type / 5mm dia. × 20mm
   AC240V input：4.0A/250VAC/ High breaking capacity / Time delay type / 5mm dia. × 20mm

Dimensions

[Main unit]

294
152
14
196
330

Unit: mm

[Controller]

120
160
34
6
(40)

Unit: mm
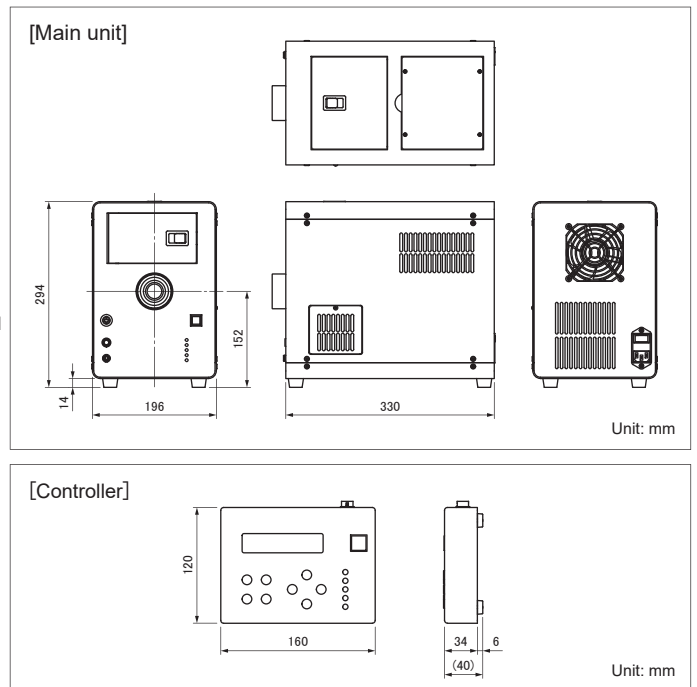
*Product specifications are subject to change without notice.

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