Xenon Light Source 300W Monochromatic Light with Filters
MAX-350

Heatless illumination with desired wavelengths for photochemical research
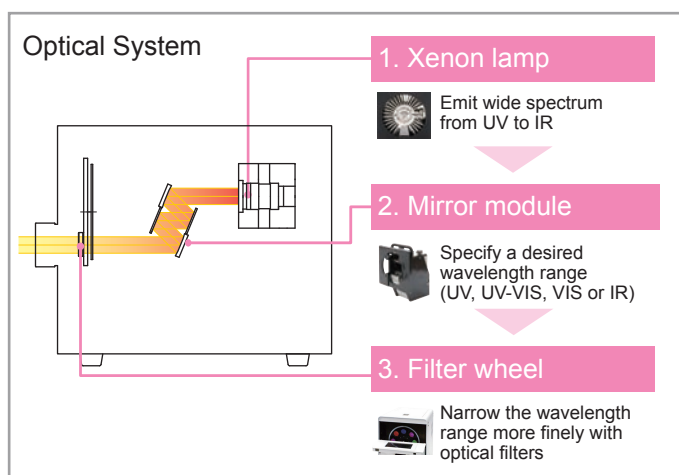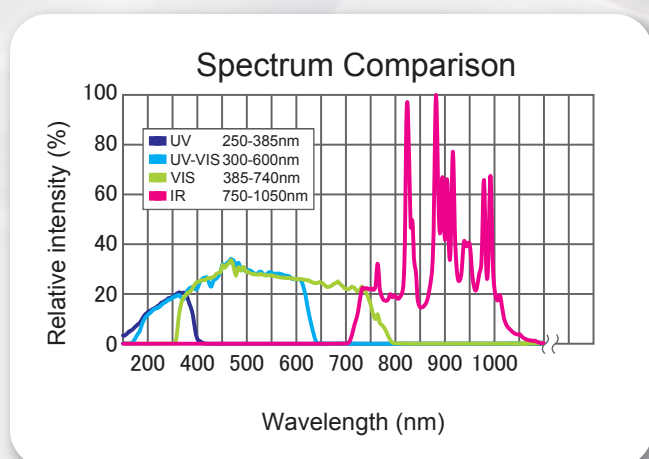
CE marked

Features

- High power monochromatic light
- IR heat blocking
- Built-in filter wheel
- Adjustable light intensity
- Flexible illumination by light guide
- No need of optical axis alignment
- Touch panel operation
- RS-485 remote control

Applications

- Photocatalyst
- Photochromism
- Artificial photosynthesis
- Chemical analysis

You Tube

Spectrum Comparison

Relative intensity (%)

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

Wavelength (nm)

Optical System

1. Xenon lamp

Emit wide spectrum from UV to IR

2. Mirror module

Specify a desired wavelength range (UV, UV-VIS, VIS or IR)

3. Filter wheel

Narrow the wavelength range more finely with optical filters

Extremely bright and heatless light source which can emit desired wavelengths

The MAX-350, 300W xenon light source, is the high-power illuminator with heat blocking design by the proprietary optical component, mirror module. The MAX-350 has various useful functions such as mirror module, filter wheel, ND variable control, timer, shutter and remote control.

MAX-350
Compact Xenon Light Source
ASAHI SPECTRA

Applications

Monochromatic Light with Optical Filters
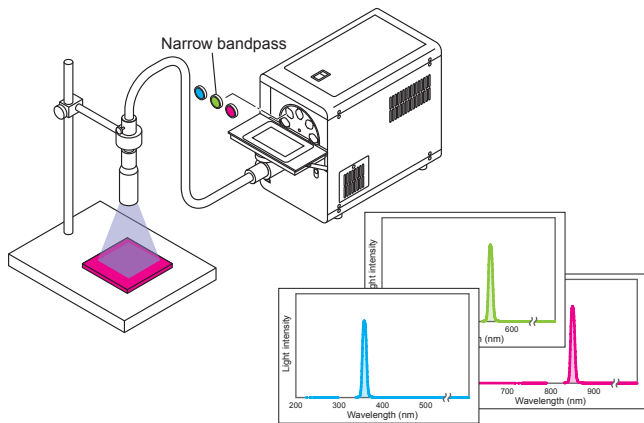
Narrow bandpass

- Bright monochromatic light compared to monochromator
- Alternative to using several wavelength lasers
- Selectable various wavelength by optical filters
- Less IR heat and stray light by mirror module

■ Narrow bandpass filter *Option

A wide variety of narrow bandpass filters from UV to IR are available.
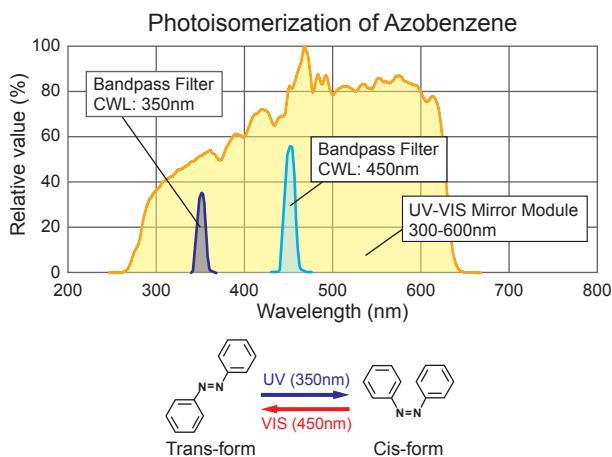Each bandpass filter has 10-12nm bandwidth.

Lineup is from 254nm to 900nm

254nm, 260nm, 270nm, ….., 880nm, 890nm, 900nm
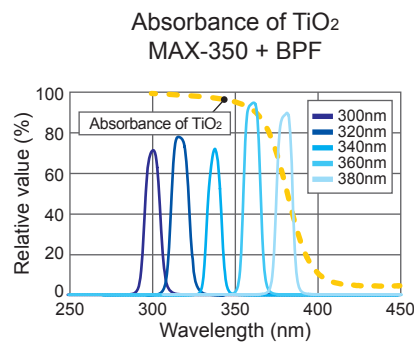
Light intensity
Wavelength (nm)

Photochemistry

Photochromic Materials Research

- Suitable for research of photochromic behavior
- Easy to switch wavelengths by filter wheel

Photoisomerization of Azobenzene

Relative value (%)
Wavelength (nm)

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

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

Photocatalytic Study

- Suitable for evaluation of wavelength response
- Easy to switch wavelengths by filter wheel

Absorbance of TiO$_2$ MAX-350 + BPF

Relative value (%)
Wavelength (nm)

Absorbance of TiO$_2$
300nm
320nm
340nm
360nm
380nm

Light Source (MAX-350)
Monochromatic Light
Reduction
O_2 → O_2^-
e^-
Excitation
h^+
TiO$_2$ Particle
OH
H_2O
Oxidation

Applications

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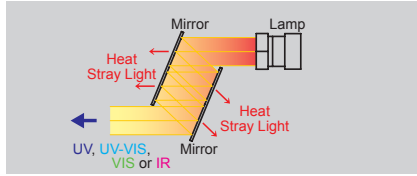- ·UV light disinfection
- ·Artificial photosynthesis
- ·Fluorescent observation
- ·Photodynamic therapy

...and for other Research & Development

Features

● 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-350 offers 4 types of mirror modules, UV, UV-VIS, VIS and IR types. The mirror modules is also replaceable while turning on the lamp.
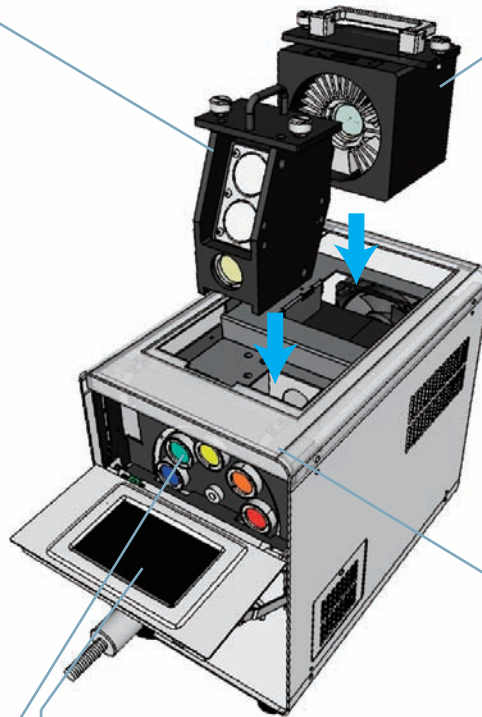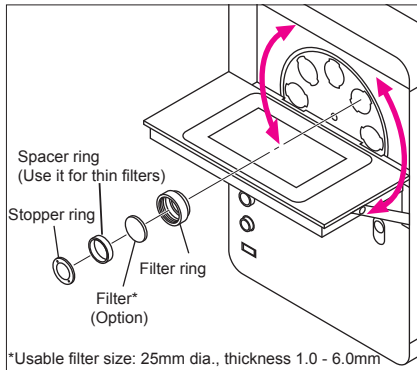
Mirror Lamp
Heat Stray Light
Heat Stray Light
UV, UV-VIS, VIS or IR Mirror

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

Mirror Module

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

Relative intensity (%) vs Wavelength (nm)
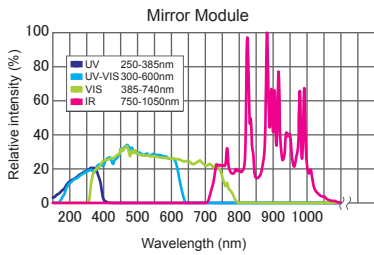
● Filter Wheel

Max. 8 filters can be mounted on the filter wheel. It enables you to use a desired wavelength by switching a filter position. Wide varieties of optical filters are available such as shortpass, longpass and bandpass filters.

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

*Usable filter size: 25mm dia., thickness 1.0 - 6.0mm

● Lamp Cartridge

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

Relative intensity (%) vs Wavelength (nm)
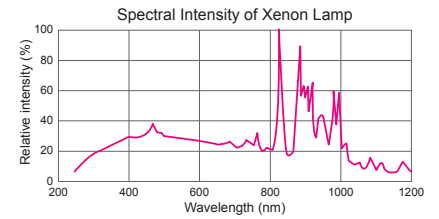
● Light Intensity Control (ND Filter)

Built-in variable ND filter allows precise control of light intensity in 1 step within the range of 50 to 1000 steps continuously.

Light Intensity Adjustment

Light intensity (%) vs Angular position (Degrees)
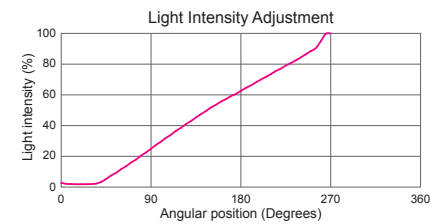
● Touch Panel

The touch panel displays various operations and settings.
You can perform the operation easily with the user-friendly display.

Menu   Lamp usage hours 0000.0[h]
Filter : 1 : FILT1
1 2 3 4 5 6 7 8
Light Intensity : 1000/1000
OFF   Close   OFF
Timer 00:00:00.5 h m s Shutter Lamp

Operation Contents

- Lamp ON/OFF
- Shutter function Open/Close
- Timer function
- Filter position control
- Light intensity adjustment

■ RS-485 Remote Control

The MAX-350 can be controlled remotely by using RS-485 cable. You can control several units by daisy chain connection.

MAX-350

For daisy chain connection
USB/RS-485 adapter cable
RS-485 cable
PC
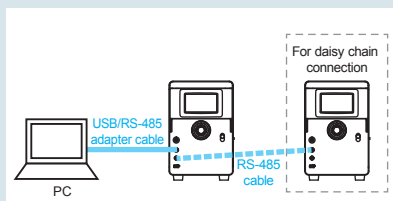
■ Software

This software provides the same operations on your PC as the touch panel. The USB/RS-485 cable is used for connection. You can download the software from our website.
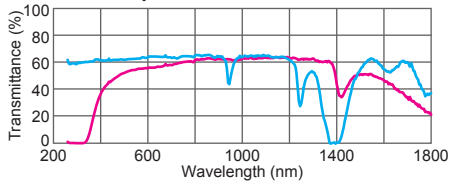
Asahi Spectra Co., Ltd.
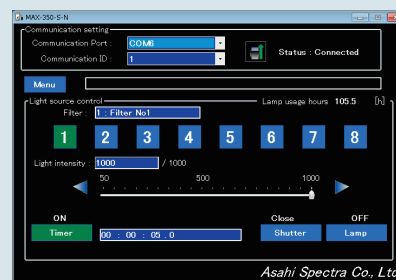
Options

Light Guide

The output light from the MAX-350 is delivered to a desired direction by the light guide.
We also offer a multi-branch light guide for custom.

Spectral Performance

- ■ 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
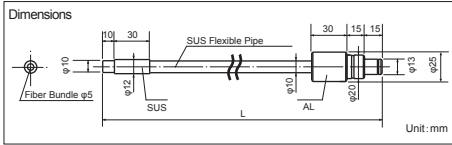
Dimensions

Unit: mm

Remote Controller

The remote controller provides the same operations as the touch panel remotely.

Dimensions:
144(W) x 16(D) x 100(H)mm

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	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

Narrow Bandpass Filter

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

Example : XHQA254

CWL tolerance: 254±2nm
FWHM tolerance: 10±2nm
Min. transmission: >60%
Size: 25mm dia.

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

*Contact us for details of a filter.

Feedback Unit FBU-10

The FBU-10 monitors the lamp intensity and keeps it constant. (For UV-VIS only)
It is necessary to use this unit with our light guide.

Package Contents

- MAX-350 main unit
- Mirror module *Choose UV, VIS, UV-VIS or IR
- Filter ring (8 pcs)
- AC cable (3m)
- Instruction manual
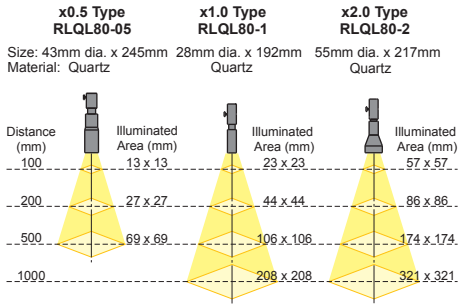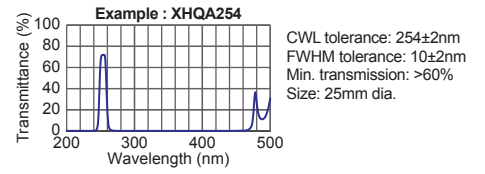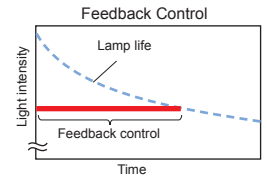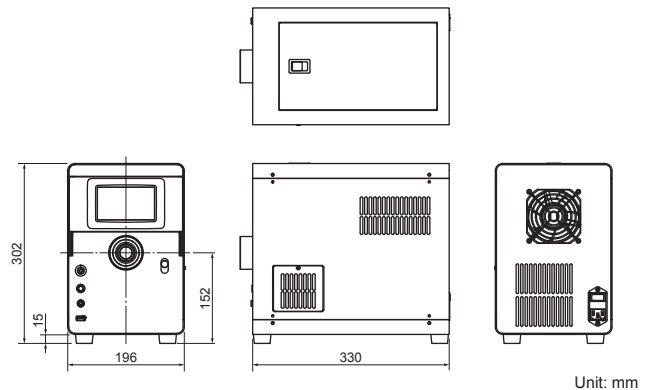- Lamp cartridge
- Light guide adapter
- Filter fitting tool
- USB/RS-485 adapter cable (1.8m)
- Software *Download

General Specifications

Model:	MAX-350
Output wavelength:	250 - 1050nm (It depends on the mirror module.)
Input voltage:	AC100 - 240V 50/60Hz (Input range: AC100 - 240V)
Apparent power:	Less than 540VA (AC100V/50Hz) Less than 520VA (AC240V/50Hz)
Lamp type:	Cermax xenon lamp 300W
Lamp life:	500h *Under our conditions *Less than 1 year after delivery
Optical axis alignment:	Cartridge type (Alignment-free)
Cooling method:	Forced air cooling
Shutter:	Pulsed motor drive
Exposure time set:	0.5sec - 24h
Light intensity control:	1000 - 50 (Steps) Continuously variable
Filter wheel:	8 channels *25mm dia/ t<6mm filter is usable
Mirror module:	UV type(250-385nm), UV-VIS type(300-600nm), VIS type(385-740nm), IR type(750-1050nm)
Controller:	Built-in
Remote control:	RS-485
Safety mechanism:	Xenon lamp problem, Cooling fan problem, Temperature anomaly
Recommended environment:	Temperature 10 - 35 deg C Humidity 20 - 80% *Avoid condensation
Dimensions:	196(W) x 330(D) x 302(H)mm
Weight:	12.2kg

Dimensions

Unit: mm

*Product specifications are subject to change without notice.