

## Aluminum Mirrors

AM/AMN/AMQ/AMQN/UVAM/HPAM/HPAMQ

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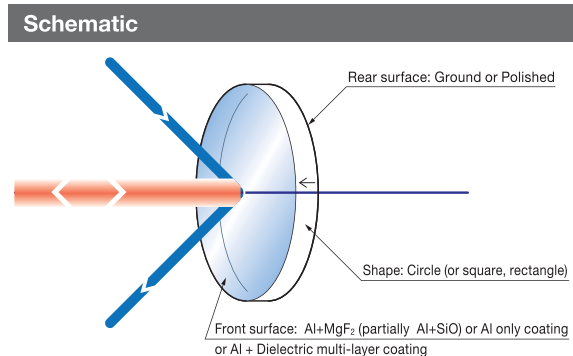
Prisms

Substrates & Windows

Holder & Vibration isolator

**This is a vapour-deposited aluminium mirror plane and the substrate is polished with high accuracy. Designed for high reflectivity at any incident angle.**

- With four types to choose from; ( AMN/AMQN ) which is coated with only aluminium, ( AM/AMQ ) which is coated with a protective coating against accidental hard scratches, (UVAM) which is coated with a protective coating and aluminium to increase the reflectance of ultraviolet and lastly, ( HPAM/HPAMQ ) which provides a protective coat on the optical parallel substrate.
- For ultraviolet, visible and near-infrared light applications.
- For low thermal expansion mirrors, we have ( AMQ/AMQN ) which is made of Synthetic fused silica that provides high rigidity and high precision surface quality.



### Specifications

Material	BK7 Synthetic fused silica Hard glass (Pyrex® etc.)
Coating	TFAN/TFAQN: Al (without protection coating) TFA/TFAQ/OPBA/OPSQA: Al+MgF <sub>2</sub> (surface flatness λ/20 is Al+SiO <sub>2</sub> ) TFAE: Al + Dielectric multi-layer coating
parallelism	TFA/TFAN/TFAQ/TFAQN/TFAE: <3' OPBA/OPSQA: <0'02"
Incident angle	TFA/TFAQ/TFAE: 45° OPBA/OPSQA: 0°
Laser Damage Threshold	0.25J/cm <sup>2</sup> (pulse width 10ns, repetition frequency 20Hz)
Surface Quality (Scratch-Dig)	40-20
Clear aperture	90% of actual aperture or circle or ellipse that contacts 90% square of dimension

### Guide

- ▶ If you need a much higher reflectance aluminium mirror, please kindly contact us.
- ▶ Should you require a surface accuracy analysis/data, please kindly contact our sales group.
- ▶ For non-standard sizes other than those found in our catalogue, please kindly contact us.
- ▶ Pyrex® is a registered trademark of Corning Inc.

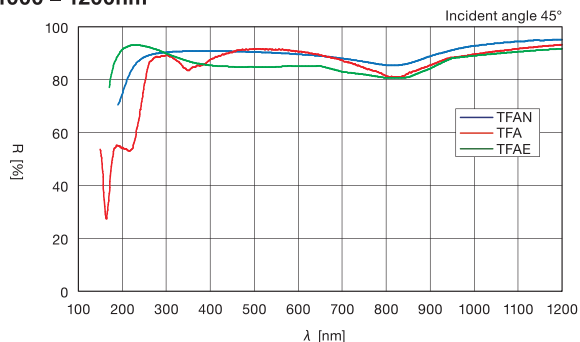
### Attention

- ▶ For aluminium mirrors without a protective film, ( AMN/AMQN ) can be easily scratched and oxidation builds up in the membrane. Do not rub the surface with paper or cloth. For long term storage, use any de-oxidizer to prevent the oxidation.
- ▶ When a laser is transmitted with multiple mirrors installed, there will be a large amount of light loss and this is due to the absorption of the aluminium coating. Please switch to dielectric multi-layer mirrors (LLM) for improved performance.
- ▶ Reflectance of the specification are represented by the average of the reflectance of P polarized light and S polarized light. Reflectance may vary depending on the polarization state of the incident beam.

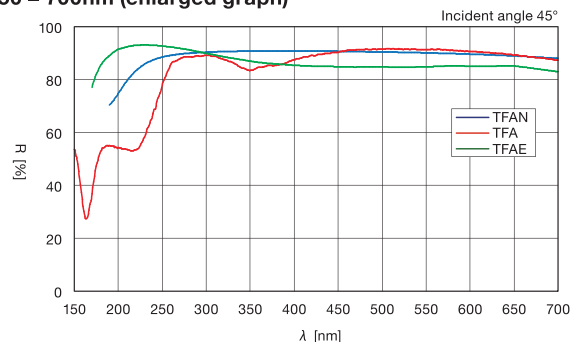
### Typical Reflectance Data

R: Reflectance

#### 1000 – 1200nm



#### 150 – 700nm (enlarged graph)



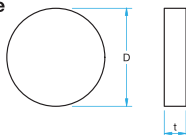
### UV Enhanced Aluminum Flat Mirrors

Part Number	Wavelength Range [nm]	Reflectance [%]	Diameter D [mm]	Thickness t [mm]	Material	Surface Flatness	Rear Surface
UVAM-12.7C05-10	170 – 400	>85 average	φ12.7	5	BK7	λ/10	Ground
UVAM-25.4C05-10	170 – 400	>85 average	φ25.4	5	BK7	λ/10	Polished
UVAM-30C05-10	170 – 400	>85 average	φ30	5	BK7	λ/10	Polished
UVAM-50C08-10	170 – 400	>85 average	φ50	8	BK7	λ/10	Polished

**Outline Drawing**

(in mm)

●Circle

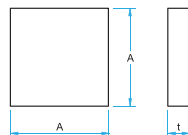


●Tolerance

$D \leq \phi 50$   
 Diameter  $D \begin{smallmatrix} +0.1 \\ -0.1 \end{smallmatrix}$   
 Thickness  $t \pm 0.1$

$\phi 60 \leq D$   
 Diameter  $D \begin{smallmatrix} +0.2 \\ -0.2 \end{smallmatrix}$   
 Thickness  $t \pm 0.2$

●Square

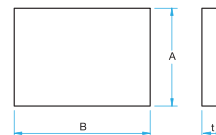


●Tolerance

$A \leq 50$   
 Length  $A \begin{smallmatrix} +0.1 \\ -0.1 \end{smallmatrix}$   
 Thickness  $t \pm 0.1$

$60 \leq A$   
 Length  $A \begin{smallmatrix} +0.2 \\ -0.2 \end{smallmatrix}$   
 Thickness  $t \pm 0.2$

●Rectangle



●Tolerance

$A \times B \leq 40 \times 50$   
 Length  $A \begin{smallmatrix} +0.1 \\ -0.1 \end{smallmatrix}$   
 Thickness  $t \pm 0.1$

$50 \times 60 \leq A \times B$   
 Length  $A \begin{smallmatrix} +0.2 \\ -0.2 \end{smallmatrix}$   
 Thickness  $t \pm 0.2$

**Circle**

Al+MgF <sub>2</sub> (partially Al+SiO) Part Number	Al only Part Number	Diameter D [mm]	Thickness t [mm]	Material	Surface Flatness	Rear Surface
AM-10C03-10	AMN-10C03-10	φ10	3	BK7	λ/10	Ground
AM-10C05-10	AMN-10C05-10	φ10	5	BK7	λ/10	Ground
AM-10C05-20	AMN-10C05-20	φ10	5	BK7	λ/20	Ground
AMQ-10C06-20	AMQN-10C06-20	φ10	6	Synthetic Fused Silica	λ/20	Ground
AM-15C03-10	AMN-15C03-10	φ15	3	BK7	λ/10	Ground
AM-15C05-10	AMN-15C05-10	φ15	5	BK7	λ/10	Ground
AM-15C05-20	AMN-15C05-20	φ15	5	BK7	λ/20	Ground
AM-20C03-10	AMN-20C03-10	φ20	3	BK7	λ/10	Ground
AM-20C05-4	AMN-20C05-4	φ20	5	BK7	λ/4	Ground
AM-20C05-10	AMN-20C05-10	φ20	5	BK7	λ/10	Ground
AM-20C05-20	AMN-20C05-20	φ20	5	BK7	λ/20	Ground
AMQ-20C06-20	AMQN-20C06-20	φ20	6	Synthetic Fused Silica	λ/20	Ground
AM-25C05-1	AMN-25C05-1	φ25	5	BK7	λ	Polished
AM-25C05-4	AMN-25C05-4	φ25	5	BK7	λ/4	Polished
AM-25C05-10	AMN-25C05-10	φ25	5	BK7	λ/10	Polished
AM-25C05-10	AMN-25C05-20	φ25	5	BK7	λ/20	Polished
AMQ-25C06-20	AMQN-25C06-20	φ25	6	Synthetic Fused Silica	λ/20	Polished
AM-25.4C05-10	AMN-25.4C05-10	φ25.4	5	BK7	λ/10	Polished
AM-30C05-1	AMN-30C05-1	φ30	5	BK7	λ	Polished
AM-30C05-4	AMN-30C05-4	φ30	5	BK7	λ/4	Polished
AM-30C05-10	AMN-30C05-10	φ30	5	BK7	λ/10	Polished
AM-30C05-20	AMN-30C05-20	φ30	5	BK7	λ/20	Polished
AMQN-30C06-20	AMQN-30C06-20	φ30	6	Synthetic Fused Silica	λ/20	Polished
AM-40C06-1	AMN-40C06-1	φ40	6	BK7	λ	Polished
AM-40C06-4	AMN-40C06-4	φ40	6	BK7	λ/4	Polished
AM-40C06-10	AMN-40C06-10	φ40	6	BK7	λ/10	Polished
AM-40C08-20	AMN-40C06-20	φ40	6	BK7	λ/20	Polished
AMQ-40C08-20	AMQN-40C08-20	φ40	8	Synthetic Fused Silica	λ/20	Polished
AM-50C08-1	AMN-50C08-1	φ50	8	BK7	λ	Polished
AM-50C08-4	AMN-50C08-4	φ50	8	BK7	λ/4	Polished
AM-50C08-10	AMN-50C08-10	φ50	8	BK7	λ/10	Polished
AM-50C08-20	AMN-50C08-20	φ50	8	BK7	λ/20	Polished
AMQ-50C10-20	AMQN-50C10-20	φ50	10	Synthetic Fused Silica	λ/20	Polished
AM-60C10-1	AMN-60C10-1	φ60	10	Hard glass	λ	Polished
AM-60C10-4	AMN-60C10-4	φ60	10	Hard glass	λ/4	Polished
AM-60C10-10	AMN-60C10-10	φ60	10	Hard glass	λ/10	Polished
AM-60C10-20	AMN-60C10-20	φ60	10	Hard glass	λ/20	Polished
AM-80C12-1	AMN-80C12-1	φ80	12	Hard glass	λ	Polished
AM-80C12-4	AMN-80C12-4	φ80	12	Hard glass	λ/4	Polished
AM-80C12-10	AMN-80C12-10	φ80	12	Hard glass	λ/10	Polished
AM-80C12-20	AMN-80C12-20	φ80	12	Hard glass	λ/20	Polished
AM-100C15-1	AMN-100C15-1	φ100	15	Hard glass	λ	Polished
AM-100C15-4	AMN-100C15-4	φ100	15	Hard glass	λ/4	Polished
AM-100C15-10	AMN-100C15-10	φ100	15	Hard glass	λ/10	Polished
AM-130C18-1	AMN-130C18-1	φ130	18	Hard glass	λ	Polished
AM-130C18-4	AMN-130C18-4	φ130	18	Hard glass	λ/4	Polished
AM-130C18-10	AMN-130C18-10	φ130	18	Hard glass	λ/10	Polished
AM-150C20-1	AMN-150C20-1	φ150	20	Hard glass	λ	Polished
AM-150C20-4	AMN-150C20-4	φ150	20	Hard glass	λ/4	Polished
AM-150C20-10	AMN-150C20-10	φ150	20	Hard glass	λ/10	Polished

**Compatible Optic Mounts**

KMH-HS25-NL, -HS30-NL / KMH-MP50 / MAD-30-10+MHB-30M / VBH-15-2 / MHF-20 / GMB-40S, -60S / KMH-80S, -100S, -130S, -150S

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Square						
Al+MgF <sub>2</sub> (partially Al+SiO) Part Number	Al only Part Number	Length A [mm]	Thickness t [mm]	Material	Surface Flatness	Rear Surface
AM-10S03-10	AMN-10S03-10	□10	3	BK7	λ/10	Ground
AM-10S05-10	AMN-10S05-10	□10	5	BK7	λ/10	Ground
AM-10S05-20	AMN-10S05-20	□10	5	BK7	λ/20	Ground
AMQ-10S06-20	AMQN-10S06-20	□10	6	Synthetic fused silica	λ/20	Ground
AM-15S03-4	AMN-15S03-4	□15	3	BK7	λ/4	Ground
AM-15S03-10	AMN-15S03-10	□15	3	BK7	λ/10	Ground
AM-15S05-4	AMN-15S05-4	□15	5	BK7	λ/4	Ground
AM-15S05-10	AMN-15S05-10	□15	5	BK7	λ/10	Ground
AM-15S05-20	AMN-15S05-20	□15	5	BK7	λ/20	Ground
AMQ-15S06-20	AMQN-15S06-20	□15	6	Synthetic fused silica	λ/20	Ground
AM-20S03-4	AMN-20S03-4	□20	3	BK7	λ/4	Ground
AM-20S03-10	AMN-20S03-10	□20	3	BK7	λ/10	Ground
AM-20S05-4	AMN-20S05-4	□20	5	BK7	λ/4	Ground
AM-20S05-10	AMN-20S05-10	□20	5	BK7	λ/10	Ground
AM-20S05-20	AMN-20S05-20	□20	5	BK7	λ/20	Ground
AMQ-20S06-20	AMQN-20S06-20	□20	6	Synthetic fused silica	λ/20	Ground
AM-25S05-1	AMN-25S05-1	□25	5	BK7	λ	Ground
AM-25S05-4	AMN-25S05-4	□25	5	BK7	λ/4	Ground
AM-25S05-10	AMN-25S05-10	□25	5	BK7	λ/10	Ground
AM-25S05-20	AMN-25S05-20	□25	5	BK7	λ/20	Ground
AMQ-25S06-20	AMQN-25S06-20	□25	6	Synthetic fused silica	λ/20	Ground
AM-30S05-1	AMN-30S05-1	□30	5	BK7	λ	Ground
AM-30S05-4	AMN-30S05-4	□30	5	BK7	λ/4	Ground
AM-30S05-10	AMN-30S05-10	□30	5	BK7	λ/10	Ground
AM-30S05-20	AMN-30S05-20	□30	5	BK7	λ/20	Ground
AMQ-30S06-20	AMQN-30S06-20	□30	6	Synthetic fused silica	λ/20	Ground
AM-40S06-1	AMN-40S06-1	□40	6	Hard glass	λ	Polished
AM-40S06-4	AMN-40S06-4	□40	6	Hard glass	λ/4	Polished
AM-40S06-10	AMN-40S06-10	□40	6	Hard glass	λ/10	Polished
AM-40S06-20	AMN-40S06-20	□40	6	Hard glass	λ/20	Polished
AM-50S08-1	AMN-50S08-1	□50	8	Hard glass	λ	Polished
AM-50S08-4	AMN-50S08-4	□50	8	Hard glass	λ/4	Polished
AM-50S08-10	AMN-50S08-10	□50	8	Hard glass	λ/10	Polished
AM-50S08-20	AMN-50S08-20	□50	8	Hard glass	λ/20	Polished
AM-60S10-1	AMN-60S10-1	□60	10	Hard glass	λ	Polished
AM-60S10-4	AMN-60S10-4	□60	10	Hard glass	λ/4	Polished
AM-60S10-10	AMN-60S10-10	□60	10	Hard glass	λ/10	Polished
AM-60S10-20	AMN-60S10-20	□60	10	Hard glass	λ/20	Polished
AM-80S12-1	AMN-80S12-1	□80	12	Hard glass	λ	Polished
AM-80S12-4	AMN-80S12-4	□80	12	Hard glass	λ/4	Polished
AM-80S12-10	AMN-80S12-10	□80	12	Hard glass	λ/10	Polished
AM-80S12-20	AMN-80S12-20	□80	12	Hard glass	λ/20	Polished
AM-100S15-1	AMN-100S15-1	□100	15	Hard glass	λ	Polished
AM-100S15-4	AMN-100S15-4	□100	15	Hard glass	λ/4	Polished
AM-100S15-10	AMN-100S15-10	□100	15	Hard glass	λ/10	Polished
AM-130S18-1	AMN-130S18-1	□130	18	Hard glass	λ	Polished
AM-130S18-4	AMN-130S18-4	□130	18	Hard glass	λ/4	Polished
AM-130S18-10	AMN-130S18-10	□130	18	Hard glass	λ/10	Polished
AM-150S20-1	AMN-150S20-1	□150	20	Hard glass	λ	Polished
AM-150S20-4	AMN-150S20-4	□150	20	Hard glass	λ/4	Polished
AM-150S20-10	AMN-150S20-10	□150	20	Hard glass	λ/10	Polished

### Compatible Optic Mounts

ACLH-25, -60, -130 / ARLH-150

Rectangle						
Al+MgF <sub>2</sub> (partially Al+SiO) Part Number	Al only Part Number	Length AxB [mm]	Thickness t [mm]	Material	Surface Flatness	Rear Surface
AM-1015R03-4	AMN-1015R03-4	10x15	3	BK7	λ/4	Ground
AM-1015R03-10	AMN-1015R03-10	10x15	3	BK7	λ/10	Ground
AM-1015R05-4	AMN-1015R05-4	10x15	5	BK7	λ/4	Ground
AM-1015R05-10	AMN-1015R05-10	10x15	5	BK7	λ/10	Ground
AM-1015R05-20	AMN-1015R05-20	10x15	5	BK7	λ/20	Ground
AMQ-1015R06-20	AMQN-1015R06-20	10x15	6	Synthetic fused silica	λ/20	Ground
AM-1525R03-4	AMN-1525R03-4	15x25	3	BK7	λ/4	Ground
AM-1525R03-10	AMN-1525R03-10	15x25	3	BK7	λ/10	Ground
AM-1525R05-4	AMN-1525R05-4	15x25	5	BK7	λ/4	Ground
AM-1525R05-10	AMN-1525R05-10	15x25	5	BK7	λ/10	Ground
AM-1525R05-20	AMN-1525R05-20	15x25	5	BK7	λ/20	Ground
AMQ-1525R06-20	AMQN-1525R06-20	15x25	6	Synthetic fused silica	λ/20	Ground
AM-2030R05-1	AMN-2030R05-1	20x30	5	BK7	λ	Ground
AM-2030R05-4	AMN-2030R05-4	20x30	5	BK7	λ/4	Ground
AM-2030R05-10	AMN-2030R05-10	20x30	5	BK7	λ/10	Ground
AM-2030R05-20	AMN-2030R05-20	20x30	5	BK7	λ/20	Ground
AMQ-2030R06-20	AMQN-2030R06-20	20x30	6	Synthetic fused silica	λ/20	Ground
AM-2535R05-1	AMN-2535R05-1	25x35	5	BK7	λ	Ground
AM-2535R05-4	AMN-2535R05-4	25x35	5	BK7	λ/4	Ground
AM-2535R05-10	AMN-2535R05-10	25x35	5	BK7	λ/10	Ground
AM-2535R05-20	AMN-2535R05-20	25x35	5	BK7	λ/20	Ground
AMQ-2535R06-20	AMQN-2535R06-20	25x35	6	Synthetic fused silica	λ/20	Ground
AM-3040R06-1	AMN-3040R06-1	30x40	6	Hard glass	λ	Polished
AM-3040R06-4	AMN-3040R06-4	30x40	6	Hard glass	λ/4	Polished
AM-3040R06-10	AMN-3040R06-10	30x40	6	Hard glass	λ/10	Polished
AM-3040R06-20	AMN-3040R06-20	30x40	6	Hard glass	λ/20	Polished
AMQ-3040R08-20	AMQN-3040R08-20	30x40	8	Hard glass	λ/20	Polished
AM-4050R08-1	AMN-4050R08-1	40x50	8	Hard glass	λ	Polished
AM-4050R08-4	AMN-4050R08-4	40x50	8	Hard glass	λ/4	Polished
AM-4050R08-10	AMN-4050R08-10	40x50	8	Hard glass	λ/10	Polished
AM-4050R08-20	AMN-4050R08-20	40x50	8	Hard glass	λ/20	Polished
AM-5060R10-1	AMN-5060R10-1	50x60	10	Hard glass	λ	Polished
AM-5060R10-4	AMN-5060R10-4	50x60	10	Hard glass	λ/4	Polished
AM-5060R10-10	AMN-5060R10-10	50x60	10	Hard glass	λ/10	Polished
AM-5060R10-20	AMN-5060R10-20	50x60	10	Hard glass	λ/20	Polished
AM-6080R12-1	AMN-6080R12-1	60x80	12	Hard glass	λ	Polished
AM-6080R12-4	AMN-6080R12-4	60x80	12	Hard glass	λ/4	Polished
AM-6080R12-10	AMN-6080R12-10	60x80	12	Hard glass	λ/10	Polished
AM-6080R12-20	AMN-6080R12-20	60x80	12	Hard glass	λ/20	Polished
AM-80100R15-1	AMN-80100R15-1	80x100	15	Hard glass	λ	Polished
AM-80100R15-4	AMN-80100R15-4	80x100	15	Hard glass	λ/4	Polished
AM-80100R15-10	AMN-80100R15-10	80x100	15	Hard glass	λ/10	Polished

High Parallelism				
Part Number	Diameter D [mm]	Thickness t [mm]	Material	Surface Flatness
HPAM-10C05-10	φ10	5	BK7	λ/10
HPAM-15C05-10	φ15	5	BK7	λ/10
HPAM-20C05-10	φ20	5	BK7	λ/10
HPAM-25C05-10	φ25	5	BK7	λ/10
HPAM-30C05-10	φ30	5	BK7	λ/10
HPAM-40C05-10	φ40	6	BK7	λ/10
HPAM-50C08-10	φ50	8	BK7	λ/10
HPAM-60C10-10	φ60	10	BK7	λ/10
HPAMQ-10C05-10	φ10	5	Synthetic fused silica	λ/10
HPAMQ-15C05-10	φ15	5	Synthetic fused silica	λ/10
HPAMQ-20C05-10	φ20	5	Synthetic fused silica	λ/10
HPAMQ-25C05-10	φ25	5	Synthetic fused silica	λ/10
HPAMQ-30C05-10	φ30	5	Synthetic fused silica	λ/10

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