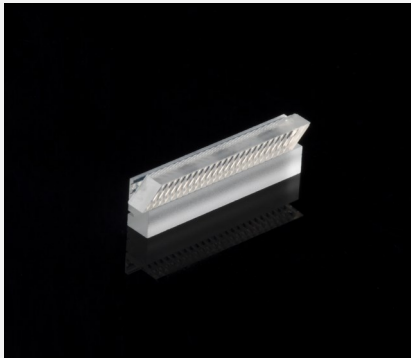


Beam Transformation System

BTS(FAC160)-P0.2



Features and Advantages

Beam Transformation System (BTS) for diode laser bars with up to 50 emitters: emitter size up to 100 μm , emitter pitch 200 μm . The BTS is used to make the beam parameter product of diode laser bars symmetrical for free beam lasers or fiber coupling.

The BTS consists of a FAC160 fast axis collimation lens, a lens array for 90° rotation of the emitters and a bottom tab.

Product Specifications

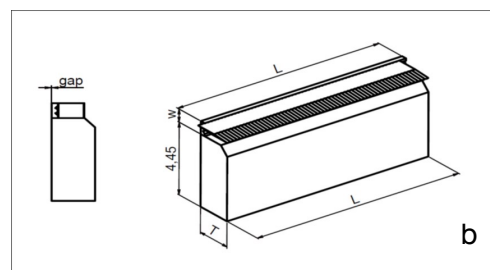
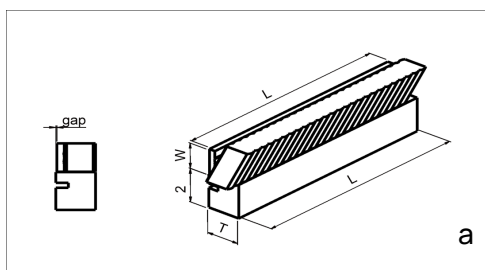
Specification Data	Unit	Value
Material		FL-IR1.9 / S-TIH53 (Ohara)
Length (L)	mm	12 \pm 0.1
Width (W)	mm	0.8 \pm 0.1
Clear aperture	mm ²	10.5 x 0.25
Surface quality @ 633 nm		$\lambda/4$ (typically)
Back focal length BFL @ 980 nm	mm	0.034
Pitch	mm	0.2
Gap	mm	0.0 \pm 0.01
Numerical aperture (NA)		FA: 0.5 SA: 0.09
Transmission	%	> 98
Remaining divergence (FW1/e ²) for fast axis ⁽¹⁾	mrad	< 12

Product Code	MOD000674 ⁽²⁾	MOD000681 ⁽²⁾	MOD000682	MOD000722 ⁽²⁾
Specification Data	Unit	Value		
AR-coating	nm	600 - 700	790 - 990	948 - 998
Thickness (T)	mm	1.5 \pm 0.1	1.5 \pm 0.1	2.06 \pm 0.1
Divergence measured at	nm	808		
Divergence optimized for	nm		808	976
Drawing Number		a	a	b

⁽¹⁾ Depending on laser parameters / specification is valid for an emitter-height of 1 μm and no smile of the laser diode.

⁽²⁾ Example for customization.

Product Dimensions (mm)



Rev 04 | Updated June 8, 2022 | RoHS compliant 2011/65/EU and 2015/863/EU

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Beam Transformation System

BTS(FAC160)-P0.2 FS for very high power bars



Features and Advantages

Beam Transformation System (BTS) for diode laser bars with up to 50 emitters: emitter size up to 100 μm , emitter pitch 200 μm . The BTS is used to make the beam parameter product of diode laser bars symmetrical for free beam lasers or fiber coupling.

The BTS consists of a FAC160 fast axis collimation lens, a lens array made of low OH fused silica for 90° rotation of the emitters and a bottom tab. The BTS is optimized for power > 300W cw.

Product Specifications

Specification Data ⁽¹⁾	Unit	Value
Material		Fused Silica (IR grade, low absorption)
Length (L)	mm	12 \pm 0.1
Width (W)	mm	0.8 \pm 0.1
Clear aperture	mm ²	10.0 \times 0.25
Back focal length BFL @ 980 nm	mm	0.034
Pitch	mm	0.2
Gap	mm	0.0 \pm 0.01
Numerical aperture (NA)		FA: 0.5 SA: 0.09
Transmission	%	> 98
Remaining divergence (FW1/e ²) for fast axis ⁽²⁾	mrad	< 12

Product Code

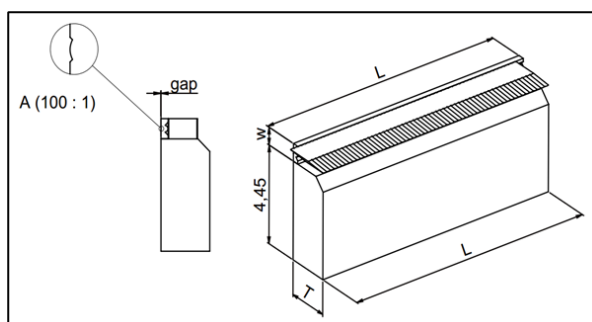
MOD000749⁽¹⁾

Specification Data	Unit	Value
AR-coating	nm	940 - 998
Thickness (T)	mm	2.06 \pm 0.05

⁽¹⁾ Example for customization — customized coatings and different pitches (e.g. 0.4 or 0.5mm) on request.

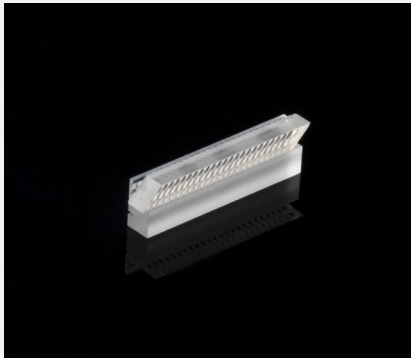
⁽²⁾ Depending on laser parameters / specification is valid for an emitter-height of 1 μm and no smile of the laser diode.

Product Dimensions (mm)



Beam Transformation System

BTS(FAC286)-P0.4



Features and Advantages

Beam Transformation System (BTS) for diode laser bars with up to 25 emitters: emitter size up to 200 μm , emitter pitch 400 μm . The BTS is used to make the beam parameter product of diode laser bars symmetrical for free beam lasers or fiber coupling.

The BTS consists of a FAC286 fast axis collimation lens, a lens array for 90° rotation of the emitters and a bottom tab.

Product Specifications

Specification Data ⁽¹⁾	Unit	Value
Material		S-TIH53 (Ohara)
Length (L)	mm	12.0 \pm 0.1
Width (W)	mm	1.0 \pm 0.1
Thickness (T)	mm	1.9 \pm 0.1
Clear aperture	mm ²	10.5 x 0.45
Back focal length BFL @ 808 nm	mm	0.09
Pitch	mm	0.4
Gap	mm	0.05 \pm 0.01
Numerical aperture (NA)		FA: 0.5 SA: 0.09
Transmission	%	> 98

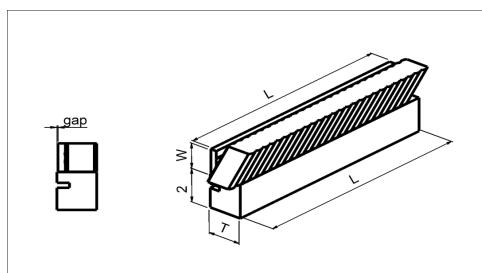
Product Code	MOD000477	MOD000678 ⁽¹⁾	MOD000454 ⁽¹⁾	MOD000679 ⁽¹⁾	MOD000478 ⁽¹⁾	MOD000680 ⁽¹⁾
Specification Data	Unit	Value				
AR-coating	nm	790 - 990	790 - 990	790 - 990	790 - 990	790 - 990
Divergence optimized at	nm	808	976	808	976	808
Remaining divergence (FW1/e ²) for fast axis ⁽²⁾	mrad	< 7	< 7	< 10	< 10	< 13

⁽¹⁾ Example for customization – customized coatings and different pitches (e.g. 0.4 or 0.5mm) on request.

⁽²⁾ Depending on laser parameters / specification is valid for an emitter-height of 1 μm and no smile of the laser diode.

⁽³⁾ Apart from free beam lasers the BTS with remaining divergence for FA<7, 10 or 13mrad can be used for coupling into 200, 400 or 600 μm fibers with NA 0.22, respectively (see also BTS-HOC systems for fiber coupling).

Product Dimensions (mm)



Beam Transformation System

BTS(FAC286)-P0.5



Features and Advantages

Beam Transformation System (BTS) for diode laser bars with up to 19 emitters: emitter size up to 150 μm , emitter pitch 500 μm . The BTS is used to make the beam parameter product of diode laser bars symmetrical for free beam lasers or fiber coupling.

The BTS consists of a FAC286 fast axis collimation lens, a lens array for 90° rotation of the emitters and a bottom tab.

Product Specifications

Specification Data	Unit	Value
Material		S-TIH53 (Ohara)
Length (L)	mm	11.5 \pm 0.1
Width (W)	mm	1.0 \pm 0.1
Thickness (T)	mm	1.9 \pm 0.1
Clear aperture	mm ²	10.0 \times 0.45
Back focal length BFL @ 808 nm	mm	0.09
Pitch	mm	0.5
Gap	mm	0.05 \pm 0.01
Numerical aperture (NA)		FA: 0.6 SA: 0.1
Transmission	%	> 98

Product Code		MOD000562 ⁽¹⁾	MOD000132 ⁽¹⁾	MOD000124	MOD000151 ⁽¹⁾	MOD000152 ⁽¹⁾	MOD000352 ⁽¹⁾
Specification Data	Unit	Value					
AR-coating	nm	600 - 700	785 - 810	790 - 990	790 - 990	965 - 990	1000 - 1600
Divergence measured at	nm	808	808			976	976
Divergence optimized at	nm			808	976		
Remaining divergence (FW1/e ²) for fast axis ⁽²⁾	mrad	< 7	< 7	< 7	< 7	< 7	< 8

⁽¹⁾ Example for customization – customized coatings on request.

⁽²⁾ Depending on laser parameters / specification is valid for an emitter-height of 1 μm and no smile of the laser diode.

⁽³⁾ Apart from free beam lasers the BTS with remaining divergence for FA < 7, 10 or 13mrad can be used for coupling into 200, 400 or 600 μm fibers with NA 0.22, respectively (see also BTS-HOC systems for fiber coupling).

Product Specifications

Product Code		MOD000622 ⁽¹⁾	MOD000122 ⁽¹⁾	MOD000115 ⁽¹⁾	MOD000117 ⁽¹⁾	MOD000268 ⁽¹⁾	MOD000283
Specification Data	Unit	Value					
AR-coating	nm	600 - 700	785 - 810	790 - 990	790 - 990	965 - 990	1000 - 1600
Divergence measured at	nm	808	808			976	976
Divergence optimized at	nm			808	976		
Remaining divergence (FW1/e ²) for fast axis ⁽²⁾	mrاد	< 10	< 10	< 10	< 10	< 10	< 10

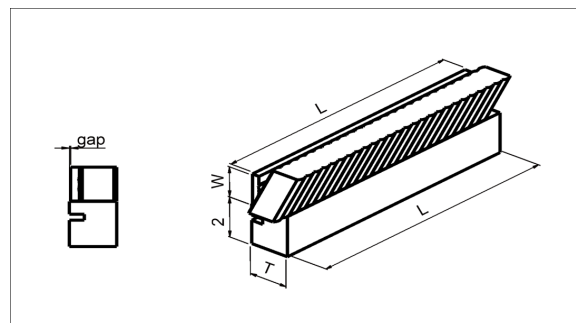
Product Code		MOD000623 ⁽¹⁾	MOD000548 ⁽¹⁾	MOD000116	MOD000546 ⁽¹⁾	MOD000547 ⁽¹⁾	MOD000284 ⁽¹⁾
Specification Data	Unit	Value					
AR-coating	nm	600 - 700	785 - 810	790 - 990	790 - 990	965 - 990	1000 - 1600
Divergence measured at	nm	808	808			976	976
Divergence optimized at	nm			808	976		
Remaining divergence (FW1/e ²) for fast axis ⁽²⁾	mrاد	< 13	< 13	< 13	< 13	< 13	< 13

⁽¹⁾ Example for customization – customized coatings on request.

⁽²⁾ Depending on laser parameters / specification is valid for an emitter-height of 1µm and no smile of the laser diode.

⁽³⁾ Apart from free beam lasers the BTS with remaining divergence for FA < 7, 10 or 13mrاد can be used for coupling into 200, 400 or 600µm fibers with NA 0.22, respectively (see also BTS-HOC systems for fiber coupling).

Product Dimensions (mm)



Beam Transformation System

BTS(FAC286)-P0.5



Features and Advantages

Beam Transformation System (BTS) for diode laser bars with up to 19 emitters: emitter size up to 150 μm , emitter pitch 500 μm . The BTS is used to make the beam parameter product of diode laser bars symmetrical for free beam lasers or fiber coupling.

The BTS consists of a FAC286 fast axis collimation lens, a lens array for 90° rotation of the emitters and a bottom tab.

Product Specifications

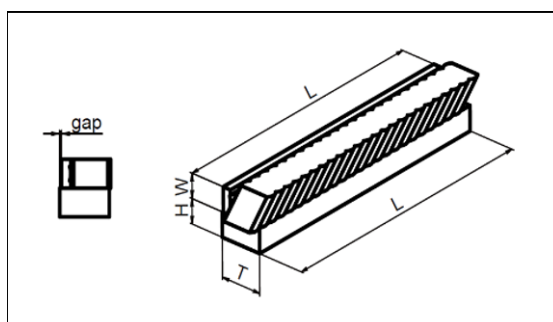
Specification Data	Unit	Value
Material		S-TIH53 (Ohara)
Length (L)	mm	11.5 ± 0.1
Width (W)	mm	1.0 ± 0.1
Thickness (T)	mm	1.86 ± 0.1
Clear aperture	mm^2	10.0×0.45
Back focal length BFL @ 808 nm	mm	0.09
Pitch	mm	0.5
Gap	mm	0.0 ± 0.01
Numerical aperture (NA)		FA: 0.6 SA: 0.1
Transmission	%	> 98
Remaining divergence (FW1/e ²) for fast axis ⁽¹⁾	mrad	< 7

Product Code		MOD000730
Specification Data ⁽²⁾	Unit	Value
AR-coating	nm	785-810
Divergence optimized for	nm	808
Height of bottom tab (H)	mm	0.5 ± 0.1

⁽¹⁾ Depending on laser parameters / specification is valid for an emitter-height of 1 μm and no smile of the laser diode.

⁽²⁾ Customized coatings on request.

Product Dimensions (mm)



Beam Transformation System

BTS(FAC365)-P0.4



Features and Advantages

Beam Transformation System (BTS) for diode laser bars with up to 25 emitters: emitter size up to 200 μm , emitter pitch 400 μm . The BTS is used to make the beam parameter product of diode laser bars symmetrical for free beam lasers or fiber coupling.

The BTS consists of a FAC365 fast axis collimation lens, a lens array for 90° rotation of the emitters and a bottom tab.

Product Specifications

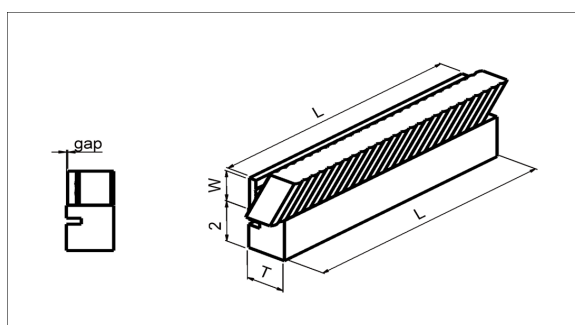
Specification Data	Unit	Value
Material		S-TIH53 (Ohara)
Length (L)	mm	12.0 ± 0.1
Width (W)	mm	1.5 ± 0.1
Thickness (T)	mm	2.05 ± 0.1
Clear aperture	mm^2	10.5×0.55
Back focal length BFL @ 808 nm	mm	0.09
Pitch	mm	0.4
Gap	mm	0.05 ± 0.01
Numerical aperture (NA)		FA: 0.5 SA: 0.06
Transmission	%	> 98
Remaining divergence (FW1/e ²) for fast axis ⁽¹⁾	mrad	< 6

Product Code	MOD000687 ⁽²⁾		MOD000672 ⁽²⁾
Specification Data	Unit	Value	Value
AR-coating	nm	790-990	790 - 990
Divergence optimized at	nm	808	976

⁽¹⁾ Depending on laser parameters / specification is valid for an emitter-height of 1 μm and no smile of the laser diode.

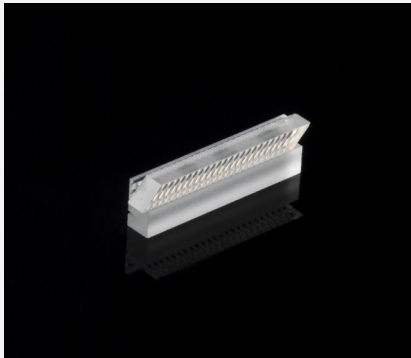
⁽²⁾ Example for customization – customized coatings on request.

Product Dimensions (mm)



Beam Transformation System

BTS(FAC365)-P0.5



Features and Advantages

Beam Transformation System (BTS) for diode laser bars with up to 19 emitters: emitter size up to 150 μm , emitter pitch 500 μm . The BTS is used to make the beam parameter product of diode laser bars symmetrical for free beam lasers or fiber coupling.

The BTS consists of a FAC365 fast axis collimation lens, a lens array for 90° rotation of the emitters and a bottom tab.

Product Specifications

Specification Data	Unit	Value
Material		S-TIH53 (Ohara)
Length (L)	mm	11.5 ± 0.1
Width (W)	mm	1.5 ± 0.1
Thickness (T)	mm	2.05 ± 0.1
Clear aperture	mm^2	10.0×0.55
Back focal length BFL @ 808 nm	mm	0.09
Pitch	mm	0.5
Gap	mm	0.05 ± 0.01
Numerical aperture (NA)		FA: 0.6 SA: 0.09
Transmission	%	> 98
Remaining divergence (FW1/e ²) for fast axis ⁽¹⁾	mrad	< 5.5

Product Code		MOD000475	MOD000683 ⁽²⁾
Specification Data	Unit	Value	Value
AR-coating	nm	790-990	790 - 990
Divergence optimized at	nm	808	976

⁽¹⁾ Depending on laser parameters / specification is valid for an emitter-height of 1 μm and no smile of the laser diode.

⁽²⁾ Example for customization – customized coatings on request.

Product Dimensions (mm)

