

SECTION - C**TECHNICAL SPECIFICATIONS OF STORES AND DRAWINGS.****Technical Specifications for Supply of Ultrafast Optical Lenses, Mirrors, Polarizer and Windows****High energy, low GVD ultrafast flat dielectric mirror (item No. 1 - 3)**

Type	Circular, Flat Mirror
Material	Fused Silica
Centre Wave length	800±10 nm
Coating	High-energy, Laser line dielectric reflective coating for ultra fast pulse
Reflectivity	> 99 % for 800 nm
Diameter	~ 25.4 mm
Surface Flatness	$\lambda/10$
Surface quality (Scratch –Dig)	15 – 5 or better
Angle Of Incidence	45°
Wedge	</= 5 arc min
Clear Aperture	≥ 80 % of the dimension
Damage Threshold	> 1 TW/cm ² for 100 fs pulse @ 800 nm
Quantity	~ 25.4 mm diameter – 12 No. ~ 50.8 mm diameter – 12 No. ~ 76.2 mm diameter – 4 no.

High energy, low GVD ultrafast Concave mirror (item No. 4 -7)

Type	Circular, concave Mirror
Material	Fused Silica
Centre Wave length	800±10 nm
Coating	High-energy, Laser line dielectric reflective coating for ultra fast pulse
Reflectivity	> 99 % for 800 nm
Surface Flatness	$\lambda/10$
Surface quality (Scratch –Dig)	10 – 5
Angle Of Incidence	0 – 5°
Clear Aperture	≥ 80 % of the dimension
Damage Threshold	> 1 TW/cm ² for 100 fs pulse @ 800 nm
Quantity :	~ 25.4 mm diameter, 250 mm effective focal length – 2 No. ~ 25.4 mm diameter, 500 mm effective focal length – 2 No. ~ 50.8 mm diameter, 500 mm effective focal length – 5 No. ~ 50.8 mm diameter, 1000 mm effective focal length – 5 No.

High energy, low GVD ultrafast flat silver mirror (item No. 8 -9)

Type	Circular, Flat Mirror
Material	N-BK7
Wave length	800 nm (or wavelength range)
Coating	Suitable for ultra fast pulse
Reflectivity	> 98 % for 800 nm
Surface Flatness	$\lambda/10$
Surface quality (Scratch -Dig)	10 - 5
Angle Of Incidence	0 - 45°
Clear Aperture	≥ 80 % of the dimension
Damage Threshold	> 1 TW/cm ² for 100 fs pulse @ 800 nm
Quantity	~ 25.4 mm diameter – 6 No. ~ 50.8 mm diameter – 6 No.

Laser line AR coated Plano-Convex lens for ultrafast pulse (item No. 10 -19)

Type	AR coated Plano-Convex
Material	Fused Silica
AR Coating Wavelength	~ 700 – 950 nm
Coating	High energy AR coating having low GVD and suitable for ultrafast pulse
Surface Flatness	$\lambda/8$ or better
Surface quality (Scratch -Dig)	20 – 10 or better
Diameter	Specified bellow
Effective focal length	Specified bellow
Clear aperture	≥ 85%
Damage Threshold	> 1 TW/cm ² for 100 fs pulse @ 800 nm

Quantity :

Diameter	Effective focal length@ 800 nm	Quantity
25.4 mm	50 mm	2
25.4 mm	100 mm	2
25.4 mm	200 mm	2
25.4 mm	250 mm	4
25.4 mm	350 mm	2
25.4 mm	500 mm	4
25.4 mm	1000 mm	2
50.8 mm	250 mm	4
50.8 mm	500 mm	4
50.8 mm	1000 mm	2

Laser line Low Dispersion, 50:50 Beam splitter (for p-polarization) for ultra short pulse (item No. 20 -21)

Type	Circular, Flat Beam splitter
Material	Fused Silica
Wave length	800 nm (or wavelength range)
Diameter	Specified bellow
Surface Flatness	$\lambda/10$
Surface quality (Scratch –Dig)	20 – 10 or better
Angle Of Incidence	45°
Clear aperture	> 80 % of diameter
Compatibility	Suitable for 1 TW/cm ² for 100 fs pulse @ 800 nm
Quantity :	25.4 mm diameter – 6 No. 50.8 mm diameter – 6 No.

Laser Line, high energy Zero Order Waveplates ($\lambda/2$) (item No. 22)

Type	Ring mounted circular
Material	Quartz
Wave length	800 nm
Coating	AR coating
Retardation	$\lambda/2$
Optical diameter	25.4 mm
Ring mount outer diameter	specify
mount thickness	specify
Parallelism	≤ 5 arc sec
Transmitted wave front distortion	$\leq \lambda/8$
Retardation accuracy	$\lambda/100$ or better
Surface quality (scratch –dig)	10-5
Quantity :	4 No.

Laser Line, high energy Zero Order Waveplates ($\lambda/4$) (item No. 23)

Type	Ring mounted circular
Material	Quartz
Wave length	800 nm
Coating	AR coating
Retardation	$\lambda/4$
Optical diameter	25.4 mm
Ring mount outer diameter	specify
mount thickness	specify
Parallelism	≤ 5 arc sec
Transmitted wave front distortion	$\leq \lambda/8$
Retardation accuracy	$\lambda/100$ or better
Surface quality (scratch –dig)	10-5
Quantity:	4 No.

Uncoated optical window (item No. 24 - 25)

Type	Uncoated circular window
Material	Fused Silica
Diameter	~ 25.4 mm
Surface Flatness	$\lambda/8$ or better
Surface quality (Scratch -Dig)	15 - 5 or better
Wedge	< 35 arc min
Clear Aperture	≥ 85 % of the dimension
Quantity :	

Diameter	Thickness	Quantity
~50.8 mm	~ 10 mm	2 No.
~ 101.6 mm	~ 12 mm	1 No.

Note :-

1. Delivery period: 180 days from the date of purchase order.
2. Test report of the coating should be provided alongwith the material.

Compliance Sheet

High energy, low GVD ultrafast flat dielectric mirror (item No. 1 - 3)

Description	IPR specification	Specify Offered Tech. Specification
Type	Circular, Flat Mirror	
Material	Fused Silica	
Centre Wave length	800±10 nm	
Coating	High-energy, Laser line dielectric reflective coating for ultra fast pulse	
Reflectivity	> 99 % for 800 nm	
Diameter	~ 25.4 mm	
Surface Flatness	$\lambda/10$	
Surface quality (Scratch -Dig)	15 - 5 or better	
Angle Of Incidence	45°	
Wedge	</= 5 arc min	
Clear Aperture	≥ 80 % of the dimension	
Damage Threshold	> 1 TW/cm ² for 100 fs pulse @ 800 nm	

High energy, low GVD ultrafast Concave mirror (item No. 4 -7)

Description	IPR specification	Specify Offered Tech. Specification
Type	Circular, concave Mirror	
Material	Fused Silica	
Centre Wave length	800±10 nm	
Coating	High-energy, Laser line dielectric reflective coating for ultra fast pulse	
Reflectivity	> 99 % for 800 nm	
Surface Flatness	$\lambda/10$	
Surface quality (Scratch -Dig)	10 - 5	
Angle Of Incidence	0 - 5°	
Clear Aperture	≥ 80 % of the dimension	
Damage Threshold	> 1 TW/cm ² for 100 fs pulse @ 800 nm	

High energy, low GVD ultrafast flat silver mirror (item No. 8 -9)

Description	IPR specification	Specify Offered Tech. Specification
Type	Circular, Flat Mirror	
Material	N-BK7	
Wave length	800 nm (or wavelength range)	
Coating	Suitable for ultra fast pulse	
Reflectivity	> 98 % for 800 nm	
Surface Flatness	$\lambda/10$	
Surface quality (Scratch -Dig)	10 - 5	
Angle Of Incidence	0 - 45°	
Clear Aperture	≥ 80 % of the dimension	
Damage Threshold	> 1 TW/cm ² for 100 fs pulse @ 800 nm	

Laser line AR coated Plano-Convex lens for ultrafast pulse (item No. 10 -19)

Description	IPR specification	Specify Offered Tech. Specification
Type	AR coated Plano-Convex	
Material	Fused Silica	
AR Coating Wavelength	~ 700 – 950 nm	
Coating	High energy AR coating having low GVD and suitable for ultrafast pulse	
Surface Flatness	$\lambda/8$ or better	
Surface quality (Scratch -Dig)	20 – 10 or better	
Diameter	Specified bellow	
Effective focal length	Specified bellow	
Clear aperture	$\geq 85\%$	
Damage Threshold	$> 1 \text{ TW/cm}^2$ for 100 fs pulse @ 800 nm	

Laser line Low Dispersion, 50:50 Beam splitter (for p-polarization) for ultra short pulse (item No. 20 -21)

Description	IPR specification	Specify Offered Tech. Specification
Type	Circular, Flat Beam splitter	
Material	Fused Silica	
Wave length	800 nm (or wavelength range)	
Diameter	Specified bellow	
Surface Flatness	$\lambda/10$	
Surface quality (Scratch -Dig)	20 – 10 or better	
Angle Of Incidence	45°	
Clear aperture	$> 80\%$ of diameter	
Compatibility	Suitable for 1 TW/cm^2 for 100 fs pulse @ 800 nm	

Laser Line, high energy Zero Order Waveplates ($\lambda/2$) (item No. 22)

Description	IPR specification	Specify Offered Tech. Specification
Type	Ring mounted circular	
Material	Quartz	
Wave length	800 nm	
Coating	AR coating	
Retardation	$\lambda/2$	
Optical diameter	25.4 mm	
Ring mount outer diameter	specify	
mount thickness	specify	
Parallelism	$\leq 5 \text{ arc sec}$	
Transmitted wave front distortion	$\leq \lambda/8$	
Retardation accuracy	$\lambda/100$ or better	
Surface quality (scratch -dig)	10-5	

Laser Line, high energy Zero Order Waveplates ($\lambda/4$) (item No. 23)

Description	IPR specification	Specify Offered Tech. Specification
Type	Ring mounted circular	
Material	Quartz	
Wave length	800 nm	
Coating	AR coating	
Retardation	$\lambda/4$	
Optical diameter	25.4 mm	
Ring mount outer diameter	specify	
mount thickness	specify	
Parallelism	≤ 5 arc sec	
Transmitted wave front distortion	$\leq \lambda/8$	
Retardation accuracy	$\lambda/100$ or better	
Surface quality (scratch -dig)	10-5	

Uncoated optical window (item No. 24 - 25)

Description	IPR specification	Specify Offered Tech. Specification
Type	Uncoated circular window	
Material	Fused Silica	
Diameter	~ 25.4 mm	
Surface Flatness	$\lambda/8$ or better	
Surface quality (Scratch - Dig)	15 - 5 or better	
Wedge	< 35 arc min	
Clear Aperture	≥ 85 % of the dimension	

Authorized Singatory

Official Seal

Date :-