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**Oggetto: *"Componenti ottici, elettroottici e meccanici nell'ambito del progetto QUID"***

## PREMESSA

Il presente documento disciplina i requisiti tecnici e funzionali della fornitura nonché tutte le attività in carico al Fornitore.

## 1. DESCRIZIONE DELLA FORNITURA/SERVIZIO

L'oggetto dell'appalto concerne l'acquisto di "Componenti ottici, elettroottici e meccanici nell'ambito del progetto QUID", come di seguito specificato:

-Prodotti dal catalogo Thorlabs come descritto al punto 2.

## 2. SPECIFICHE TECNICHE / REQUISITI DELLA FORNITURA

| **Dal Catalogo Thorlabs - https://www.thorlabs.com/** | | | |
|---|---|---|---|
| **Pos.** | **Codice** | **Descrizione** | **Quantità** |
| 1 | HW-KIT5/M | M3 Cap Screw and Hardware Kit for Mini-Series | 1 |
| 2 | HW-KIT1/M | M4 Cap Screw and Hardware Kit | 1 |
| 3 | HW-KIT4/M | M6 Setscrew and Hardware Kit | 1 |
| 4 | CL3/M-P5 | Compact Variable Height Clamp M6 Tapped 5 Pack | 5 |
| 5 | CL2/M-P5 | Heavy-Duty Variable Height Clamp M6 Tapped 5 Pack | 5 |
| 6 | CL5A-P5 | Table Clamp L-Shape Rounded Lip 5 Pack | 5 |
| 7 | TRT2/M | Ø12.7 mm Translating Optical Post SS M4 Setscrew M6 Tap L = 50.8 mm to 57.2 mm | 2 |
| 8 | TRA150/M | Ø12.7 mm Aluminum Post M4 Setscrew M6 Tap L = 150 mm | 10 |
| 9 | PH100E/M | Ø12.7 mm Pedestal Post Holder Spring-Loaded Hex-Locking Thumbscrew L=104.7 mm | 4 |
| 10 | PH150E/M | Ø12.7 mm Pedestal Post Holder Spring-Loaded Hex-Locking Thumbscrew L=154.7 mm | 4 |
| 11 | PH100/M | Ø12.7 mm Post Holder Spring-Loaded Hex-Locking Thumbscrew L=100 mm | 4 |
| 12 | PH150/M | Ø12.7 mm Post Holder Spring-Loaded Hex-Locking Thumbscrew L=150 mm | 4 |
| 13 | BE1/M | Ø31.8 mm Studded Pedestal Base Adapter M6 Threads | 10 |
| 14 | RA90/M | Right-Angle Clamp for Ø1/2" Posts 5 mm Hex | 10 |
| 15 | XR25-YZ/M | YZ Stage Assembly Kit for Stages with 3" Dovetails M6 x 1.0 Taps | 1 |
| 16 | SPW606 | Spanner Wrench for SM1-Threaded Retaining Rings Length = 1.00" | 1 |
| 17 | SPW801 | Adjustable Spanner Wrench | 1 |
| 18 | INT-MZI-1300 | 1300 nm Mach-Zehnder Interferometer Clock Box | 1 |
| 19 | INT-MSI-1300B | Michelson-Type Interferometer 1250 - 1350 nm 100 MHz | 1 |
| 20 | DS5 | 5 VDC 2 A Regulated Power Supply with USB Type-A Port 100/240 VAC | 2 |
| 21 | DSC1 | Compact Digital Servo Controller 100 kHz Bandwidth Power Supply Sold Separately | 2 |

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| 22 | SI050 | Shearing Interferometer with a 2.5-5 mm Beam Diameter Shear Plate | 1 |
| 23 | SI500 | Shearing Interferometer with a 25.4-50 mm Beam Diameter Shear Plate | 1 |
| 24 | SICP | 30 mm Cage System Adapter for Shearing Interferometers with Diffuser Viewing Screen | 1 |
| 25 | SICPSM1 | 30 mm Cage System Adapter for Shearing Interferometers with SM1-Threaded Viewing Port | 1 |
| 26 | S20LK | Ø1" Mounted Slit 20 ± 2 µm Wide 10 mm Long | 1 |
| 27 | S50LK | Ø1" Mounted Slit 50 ± 3 µm Wide 10 mm Long | 1 |
| 28 | S100LK | Ø1" Mounted Slit 100 ± 4 µm Wide 10 mm Long | 1 |
| 29 | S150LK | Ø1" Mounted Slit 150 ± 4 µm Wide 10 mm Long | 1 |
| 30 | ESK09 | BNC and SMA Adapters Essentials Kit 76 pcs | 1 |
| 31 | PSY406 | Copper Mesh 1.22 m x 1.22 m (48" x 48" ) | 2 |
| 32 | PF10-03-M01-10 | Ø1" Protected Gold Mirror 10 Pack | 1 |
| 33 | OSL1-SMA | SMA Fiber Bundle Adapter for OSL1 Fiber Light Source | 2 |
| 34 | OSL2IR | High-Intensity Fiber-Coupled Illuminator with IR-Enhanced Output and 91 cm (36") Long Fiber Bundle | 1 |
| 35 | OSL2FB | Single-Output Bundle for OSL2 and OSL2IR Fiber Light Sources 91 cm (36") | 1 |
| 36 | OSL2COL | Collimation Package for OSL2- and OSL2IR-Compatible Fiber Bundles | 1 |
| 37 | OSL2FOC | Focusing Package for OSL2- and OSL2IR-Compatible Fiber Bundles WD = 20 mm | 1 |
| 38 | OSL2B | 3200 K Replacement Bulb for OSL2 and OSL2IR Fiber Light Sources 1000 Hour Lifetime | 1 |
| 39 | OSL2BIR | 3200 K Enhanced IR Replacement Bulb for OSL2 and OSL2IR Fiber Light Sources 200 Hour Lifetime | 1 |
| 40 | GT25-03 | Visible Transmission Grating 300 Grooves/mm 17.5° Groove Angle 25 mm x 25 mm | 1 |
| 41 | GT25-12 | Visible Transmission Grating 1200 Grooves/mm 36.9° Groove Angle 25 mm x 25 mm | 1 |
| 42 | GR25-1204 | Ruled Reflective Diffraction Grating 1200/mm 400 nm Blaze 25 mm x 25 mm x 6 mm | 1 |
| 43 | GR25-0305 | Ruled Reflective Diffraction Grating 300/mm 500 nm Blaze 25 mm x 25 mm x 6 mm | 1 |
| 44 | ADM01 | Acoustic Detection Module for QEPAS Hylok Fittings BaF<sub>2</sub> Windows | 1 |
| 45 | TD1315R5A1 | 1x2 SM Coupler 1310/1550 nm 50:50 Split FC/APC | 1 |
| 46 | TD1315R2A1 | 1x2 SM Coupler 1310/1550 nm 90:10 Split FC/APC | 1 |
| 47 | WMC3L1F | Wideband Multimode Circulator Low OH Ø105 µm Core 0.22 NA to Ø200 µm Core 0.39 NA FC/PC Connectors | 1 |
| 48 | CIR1310-APC | Fiber Optic Circulator 1280 - 1340 nm SMF FC/APC | 1 |
| 49 | 6015-3-APC | Fiber Optic Circulator 1525 - 1610 nm SMF FC/APC | 1 |
| 50 | FPC562 | Fiber Polarization Controller 3 Ø56 mm Paddles SMF-28e+ FC/APC Connectors | 1 |
| 51 | FPC032 | Fiber Polarization Controller 3 Ø27 mm Paddles ClearCurve® Fiber FC/APC Connectors | 1 |

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| 52 | EF114 | Low-Pass Electrical Filter ≤5 kHz Passband In-Line BNC Feedthrough | 1 |
| 53 | EF120 | Low-Pass Electrical Filter ≤10 kHz Passband In-Line BNC Feedthrough | 1 |
| 54 | EF124 | Low-Pass Electrical Filter ≤50 kHz Passband In-Line BNC Feedthrough | 1 |
| 55 | EF508 | Low-Pass Electrical Filter ≤1 MHz Passband Coaxial BNC Feedthrough | 1 |
| 56 | EF111 | High-Pass Electrical Filter >1 kHz Passband In-Line BNC Feedthrough | 1 |
| 57 | EF115 | High-Pass Electrical Filter >5 kHz Passband In-Line BNC Feedthrough | 1 |
| 58 | EF121 | High-Pass Electrical Filter >10 kHz Passband In-Line BNC Feedthrough | 1 |
| 59 | EF517 | High-Pass Electrical Filter >1 MHz Passband Coaxial BNC Feedthrough | 1 |
| 60 | EF500 | DC Block Electrical Filter >1 Hz Passband Coaxial BNC Feedthrough | 1 |
| 61 | EF599 | DC Block Mains Hum Electical Filter 27 dB Suppression at 50 - 60 Hz Coaxial BNC Feedthrough | 1 |
| 62 | P3-23Z-FC-1 | ZBLAN Single Mode  Patch Cable 2.3 - 4.1 µm FC/APC 1 m Long | 1 |
| 63 | P3-32F-FC-1 | InF<sub>3</sub> Single Mode  Patch Cable 3.2 - 5.5 µm FC/APC 1 m Long | 2 |
| 64 | FCC-7020 | Universal Fiber Connector Cleaner 20' Spool | 2 |
| 65 | MC-50E | Lens Tissues 25 Sheets per Booklet 50 Booklets in a Closeable Box | 3 |
| 66 | ADASMA-10 | SMA to SMA Mating Sleeve 10 Pack | 1 |
| 67 | ADAFCSMA1 | FC/PC to SMA Fiber Optic Mating Sleeve | 2 |
| 68 | ADAFCPM1 | FC/PC to FC/PC or FC/APC to FC/APC Mating Sleeve Wide Precision Key (2.2 mm) Square Flange | 5 |
| 69 | ADAFC3 | FC/APC to FC/APC Mating Sleeve Narrow Key (2.0 mm) Square Flange | 10 |
| 70 | ADAFC2 | FC/PC to FC/PC Mating Sleeve Wide Key (2.2 mm) Square Flange | 10 |
| 71 | VRC6SM1 | SM1-Threaded MIR Alignment Disk 1.5 to >13.2 µm | 3 |
| 72 | VRC6SCPT | 30 mm Cage System Alignment Plate with MIR Disk 1.5 to >13.2 µm | 3 |
| 73 | LVL01 | 1.25" Circular Bullseye Level | 5 |
| 74 | DV1550AA | Digital Variable Optical Attenuator 1250 - 1650 nm SM Fiber Coupled FC/APC | 1 |
| 75 | LDM9LP | LD/TEC Mount for Thorlabs Fiber-Pigtailed Laser Diodes | 1 |
| 76 | SM1MP | Externally SM1-Threaded Adapter for Ø1" Off-Axis Parabolic Mirrors | 1 |
| 77 | MP254P2/M | M4-Threaded Adapter for Ø1" Off-Axis Parabolic Mirrors | 1 |
| 78 | MP127P2/M | M4-Threaded Adapter for Ø1/2" Off-Axis Parabolic Mirrors | 1 |
| 79 | SM05MP | Externally SM05-Threaded Adapter for Ø1/2" Off-Axis Parabolic Mirrors | 1 |

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| 80 | RCR50A-P01 | Protected Silver Compact Reflective Collimator 450 nm - 20 µm RFL = 50.8 mm FC/APC | 1 |
| 81 | MAX313D/M | 3-Axis NanoMax Stage Differential Drives No Piezos Metric | 1 |
| 82 | PM61C | Fiber Optic Power Meter with Visual Fault Locator 800 - 1700 nm -70 dBm to 13 dBm (100 pW to 20 mW) | 1 |
| 83 | PM20-LC | LC/PC Fiber Adapter Cap with Internal SM05 (0.535"-40) Threads | 1 |
| 84 | PM20-SC | SC/PC Fiber Adapter Cap with Internal SM05 (0.535"-40) Threads | 1 |
| 85 | PM20-APC | FC/APC Fiber Adapter Cap with Internal SM05 (0.535"-40) Threads Wide Key (2.2 mm) | 1 |
| 86 | GR1325-30035 | Ruled Reflective Diffraction Grating 300/mm 3.5 µm Design Wavelength 12.5 x 25.0 x 9.5 mm | 2 |
| 87 | GR25-1210 | Ruled Reflective Diffraction Grating 1200/mm 1 µm Blaze 25 mm x 25 mm x 6 mm | 2 |
| 88 | WPQSM05-1064 | Ø1/2" Zero-Order Quarter-Wave Plate SM05-Threaded Mount 1064 nm | 1 |
| 89 | WPHSM05-1064 | Ø1/2" Zero-Order Half-Wave Plate SM05-Threaded Mount 1064 nm | 1 |
| 90 | WPHSM05-1310 | Ø1/2" Zero-Order Half-Wave Plate SM05-Threaded Mount 1310 nm | 4 |
| 91 | WPQSM05-1310 | Ø1/2" Zero-Order Quarter-Wave Plate SM05-Threaded Mount 1310 nm | 4 |
| 92 | KM100PM/M | Kinematic Prism Mount 25.4 mm Deep M4 Taps | 10 |
| 93 | PM3/M | Small Adjustable Clamping Arm M4 x 0.7 Threaded Post | 10 |
| 94 | PM4/M | Large Adjustable Clamping Arm M4 x 0.7 Threaded Post | 10 |
| 95 | LA1213-C | N-BK7 Plano-Convex Lens Ø1/2" f = 50 mm AR Coating: 1050 - 1700 nm | 2 |
| 96 | LA1131-C | N-BK7 Plano-Convex Lens Ø1" f = 50 mm AR Coating: 1050 - 1700 nm | 2 |
| 97 | AX2520M-C | 20.0° 1050 - 1700 nm AR Coated UVFS Ø1" (Ø25.4 mm) Axicon SM1-Threaded Mount | 1 |
| 98 | AX1240M-C | 40.0° 1050 - 1700 nm AR Coated UVFS Ø1/2" (Ø12.7 mm) Axicon SM05-Threaded Mount | 1 |
| 99 | AX125M-C | 5.0° 1050 - 1700 nm AR Coated UVFS Ø1/2" (Ø12.7 mm) Axicon SM05-Threaded Mount | 1 |
| 100 | CM508-050-M01 | Ø2" Gold-Coated Concave Mirror f = 50.0 mm | 1 |
| 101 | KM200 | Kinematic Mirror Mount for Ø2" Optics | 1 |
| 102 | CM508-200-M01 | Ø2" Gold-Coated Concave Mirror f = 200.0 mm | 1 |
| 103 | PBS124 | 1/2" Polarizing Beamsplitter Cube 1200 - 1600 nm | 2 |
| 104 | LA1908-A | N-BK7 Plano-Convex Lens Ø1" f = 500 mm AR Coating: 350 - 700 nm | 4 |
| 105 | KM05FL/M | Rear-Loaded Left-Handed Clear-Quadrant Mirror Mount Metric | 2 |
| 106 | P3-1064PM-FC-5 | PM Patch Cable PANDA 1064 nm Ø3 mm Jacket FC/APC 5 m Long | 2 |
| 107 | P3-488PM-FC-5 | PM Patch Cable PANDA 488 nm Ø3 mm Jacket FC/APC 5 m Long | 2 |
| 108 | F240APC-1064 | 1064 nm f = 8.07 mm NA = 0.50 FC/APC Fiber Collimation Pkg. | 1 |

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| 109 | F220APC-1310 | 1310 nm f =11.26 mm NA = 0.25 FC/APC Fiber Collimation Pkg. | 2 |
| 110 | F280APC-B | 633 nm f = 18.24 mm NA = 0.15 FC/APC Fiber Collimation Pkg. | 1 |
| 111 | LJ1629RM-C | f = 150.0 mm Ø1" N-BK7 Mounted Plano-Convex Round Cyl Lens ARC: 1050 - 1700 nm | 2 |
| 112 | LJ1695RM-C | f = 50.0 mm Ø1" N-BK7 Mounted Plano-Convex Round Cyl Lens ARC: 1050 - 1700 nm | 2 |
| 113 | ADAFCPM2 | FC/PC to FC/PC or FC/APC to FC/APC Mating Sleeve Narrow Precision Key (2.0 mm) Square Flange | 2 |
| 114 | LP1310-SAD2 (241008-48) | 1310 nm 2 mW TO Can DFB Laser SM Fiber Internal Isolator FC/APC | 1 |

## 3. MODALITA' DI EROGAZIONE DELLA PRESTAZIONE

Nell'offerta dovranno essere incluse tutte le spese di trasporto e consegna della fornitura, inclusi gli imballi e le coperture da garanzia, che saranno a cura della Vs Spett.le Società.

## 4. TEMPISTICA

La consegna dovrà essere effettuata entro 12 settimane dall'ordine

## 5. CONSEGNA DEI SERVIZI/FORNITURA

Consegna del materiale presso:

ASI - AGENZIA SPAZIALE ITALIANA – sede di Matera

Localita Terlecchia snc (75100-MT),

La consegna andrà concordata con Stefano Dello Russo

e-mail: stefano.dellorusso@asi.it – tel 0835/377584 – cell. +39 3493277492

In caso di non reperibilità contattare anche Mario Siciliani de Cumis

e-mail: mario.sicilianidecumis@asi.it – tel 0835/377553

## 6. FATTURAZIONE E MODALITÀ DI PAGAMENTO

La fattura elettronica relativa al materiale consegnato, sarà emessa nei confronti dell'Agenzia Spaziale Italiana e dovrà contenere l'indicazione, per singola voce, di imponibile ed Iva secondo le attuali regole, ma dovranno altresì recare la dizione "scissione dei pagamenti ex art. 17-ter del Dpr 633/72". Nella fattura elettronica, quanto sopra si realizza mediante l'inserimento della lettera "S" nel campo destinato ad indicare l'esigibilità dell'imposta. Il pagamento delle fatture

sarà effettuato quindi da parte dell'Agenzia Spaziale Italiana al netto dell'IVA in quanto provvederà l'ASI stessa a versare l'IVA all'Erario. Non potranno invece essere accettate né tantomeno pagate fatture senza la lettera "S" inserita nel campo destinato ad indicare l'esigibilità dell'imposta.

Il pagamento, verrà effettuato, previa verifica della fornitura, entro 30 giorni ed a mezzo di bonifico sulle coordinate bancarie indicate in fattura.