



## Purchase Contract

pursuant to Section 2079 et seq. of Act No. 89/2012 Coll., the Civil Code, as amended (hereinafter the “**Civil Code**”)

### I. THE PARTIES:

1. Buyer:

**Fyzikální ústav AV ČR, v. v. i.**

*(Institute of Physics of the Czech Academy of Sciences, public research institution)*

with its principal office at Praha 8, Na Slovance 2, PSČ 182 00

represented by: RNDr. Michal Prouza, Ph.D., the Director

registered in the Registry of public research institutions kept by the Ministry of Education, Youth and Sports of the Czech Republic

Id. No.: 68378271

(hereinafter the “**Buyer**”)

and

2. Seller:

**OptiXs, s.r.o.**

with its principal office at Křivoklátská 37/3, Letňany, 199 00 Praha 9

represented by: Ing. Martin Klečka, statutory representative

registered in the commercial register kept by Municipal court in Prague, item C 212818

Id. No. (if any): 02016770

(Hereinafter the “**Seller**”; the Buyer and the Seller are hereinafter jointly referred to as the “**Parties**” and each of them individually as a “**Party**”).

enter, on the present day, month and year, into this Purchase Contract (hereinafter the “**Contract**”)

### II. Fundamental Provisions:

- 2.1 The Buyer is a beneficiary of a subsidy granted by the Ministry of Education, Youth and Sports of the Czech Republic within the Operational Programme “Research, Development and Education”.
- 2.2 The Seller has been awarded the public contract entitled “Spherical Stretcher Mirrors TP20\_049” (hereinafter the “**Public Contract**”).

### III. Subject of the Contract

- 3.1 Under this Contract the Seller shall design, manufacture and deliver to the Buyer two spherical mirrors (hereinafter the “**Mirrors**”) as specified herein and under the conditions stipulated herein including Annexes to this Contract, especially Annex No 1 Requirements Specification Document (hereinafter the “**RSD**”).
- 3.2 The Buyer shall take over the Mirrors with all the required documentation and pay the Purchase Price for them to the Seller as specified in Art. V. hereof.



#### **IV. Risk of Loss and Ownership Title**

The risk of loss or damage to the Mirrors shall pass to the Buyer upon their delivery to the Place of Delivery (upon offloading from the means of transport designated by the Seller).

The ownership title to the Mirrors shall pass to the Buyer upon provision of the final instalment of the Purchase Price.

#### **V. Purchase Price and Payment Terms**

5.1 The total purchase price for the Mirrors is **257 990 USD** excl. VAT (hereinafter the "**Purchase Price**"). The price of the individual Mirrors is:

Mirror No	Price in USD excl. VAT
Concave mirror M1	[vypuštěno]
Convex mirror M2	[vypuštěno]

5.2 All prices stipulated in this Contract are exclusive of VAT payable in the EU that will be paid by the Buyer in the Czech Republic.

5.3 The Seller, if applicable, is responsible for clearing the Mirrors both for export from the country of origin and for import to the EU (export and import customs formalities and financial duties). The Buyer shall provide all needed assistance and carry out activities needed for completion of import procedures. The Buyer shall formally apply that the Mirrors are admitted to the EU free of import financial duties (customs) if the law of the European Union provides for such admission.

5.4 The Purchase Price includes all costs related to the performance of the subject-matter of this Contract of which the Seller knew or should have known including all manufacturing costs, costs of transport, packaging, proper level of insurance and any other direct or indirect costs needed to perform this Contract duly and in time (but excluding VAT payable in the EU). The Purchase Price for the subject of performance set out in Art. V.1. hereof is the maximum permissible price. The Purchase Price is independent of the development of prices and currency exchange rates.

5.5 The Purchase Price for the Mirrors shall be paid based on tax documents – invoices, to the account of the Seller designated in the invoice.

The Seller is entitled to invoice the Purchase Price as follows:

- 30 % of the Purchase Price upon Qualified Design approval;
- 20% of the Purchase Price upon verification of the Mirrors after completion of the manufacturing process (factory testing);
- 50 % of the Purchase Price upon acceptance of the Mirrors in the Place of Delivery.

5.6 Invoices shall be payable within thirty (30) days from their delivery to the Buyer (hereinafter the "**Maturity Period**"). If the Seller indicates any shorter maturity period in an invoice, such other period is deemed irrelevant and the period set out herein applies. Payment of the invoiced amount is considered executed on the date of its remitting to the Seller's account. In conformity with the applicable tax regulations of the Czech Republic, the tax documents – invoices issued by the Seller hereunder shall include particularly the following details:

- a) the business name/designation and registered office of the Buyer
- b) the tax identification number of the Buyer
- c) the business name/designation and registered office of the Seller
- d) the tax identification number of the Seller
- e) the registration number of the tax document
- f) the scope and object of the taxable supply
- g) the date of issue of the tax document
- h) the date of the supply or the date of acceptance of the consideration, whichever is earlier, if it differs from



the date of issue of the tax document

- i) the price of the supply
- j) a declaration that the invoiced performance is provided for the purposes of the "Advanced Research Using High Intensity Laser Produced Photons and Particles" project, reg. No. CZ.02.1.01/0.0/0.0/16\_019/0000789 or any other project in accordance with instructions provided by the Buyer in advance

and must also be in conformity with any double taxation treaties applicable to this Contract.

5.7 Invoices shall be submitted to the Buyer only in the electronic form to the email address: [efaktury@fzu.cz](mailto:efaktury@fzu.cz)

## **VI. Delivery Deadline**

The Seller shall deliver the Mirrors to the Place of Delivery within 30 weeks from conclusion of this Contract.

## **VII. Place of Delivery**

The place of delivery shall be the ELI Beamlines facility, Za Radnicí 836, ZIP 252 41, Dolní Břežany, district Prague-west, the Czech Republic (hereinafter the "**Place of Delivery**").

## **VIII. Production Phasing, Verification, Transport and Acceptance of the Mirrors**

### **8.1 Qualification of Design**

The Seller shall submit to the Buyer final manufacturing drawings and other documentation and information in line with art. 4.3.1 of Annex No 1 hereto (RSD) for approval before manufacture of the Mirrors.

The Buyer shall provide a statement (approval or any comments) on the manufacturing drawings and related documentation and information submitted by the Seller within 10 business days from receiving them. Potential necessity of implementation of any comments of the Buyer does not postpone the delivery deadline stipulated hereby if the Buyer meets the 10-business-day deadline. Should the deadline for provision of the statement not be met by the Buyer, the delivery deadline extend accordingly.

### **8.2 Manufacture and Verification**

The Buyer shall carry out verification of the Mirrors (or any Mirror separately) at the Seller's site in line with art. 4.3.2 of Annex No 1 hereto (RSD). If the Mirrors comply with all requirements stipulated herein and the results of the verification process are documented through documentation requested under this Contract, the Buyer shall approve the verification results with a verification protocol. The Buyer is entitled to take part personally in the verification process.

### **8.3 Delivery and Acceptance of the Mirrors**

The inspection of the Mirrors in terms of potential damage incurred during transport shall be carried out by the Buyer immediately after delivery of the Mirrors to the Place of Delivery. The Buyer shall confirm due delivery of the Mirrors to the Place of Delivery to the Seller within 5 days, if delivered free of transport damage.

Upon delivery of the Mirrors to the Place of Delivery free of obvious transport damage including complete required documentation (including documentation needed for verification) the Buyer shall issue an acceptance protocol.

## **IX. Defects of the Mirrors and Warranty Claims**

9.1 A Mirror shall be deemed defective if it does not conform to the requirements stipulated herein. The Seller shall be liable for (i) any defects in the Mirrors at the time of their acceptance in the Place of Delivery (non-conformity with requirements of this Contract or transport damage) and (ii) for defects that occur in the Mirrors during the entire warranty period (quality guarantee).

### **Defects Detected during Verification at the Seller's Site**

9.2 If any defects of the Mirrors are detected during verification process at the Seller's site, the Seller shall present a defect removal schedule under which the defects are to be removed with all reasonable expedition and



promptly. The Buyer may (but is not obliged to) agree to such additional time for removing the defects. If the Seller removes the defects within the agreed additional time, the additional time for defects removal shall not be taken into account in terms of meeting the delivery deadline (Art. VI hereof).

- 9.3 The Buyer is also entitled based on its discretion to approve verification of the Mirrors despite defects in them without removing the defects if the Parties agree on an adequate price discount.

#### Defects Caused during Transport

- 9.4 If a defect is detected by inspection of the Mirrors in the Place of Delivery, the defect shall be documented and immediately reported to the Seller. Articles 9.8 – 9.10. hereof apply on the defect removal. The Buyer is also entitled based on its discretion to accept the defective Mirror as is in line with Art. 9.3 hereof.

#### Hidden defects

- 9.5 Acceptance of the Mirrors in the Place of Delivery does not prevent the Buyer from making a later claim for removal of a hidden defect (that was present in a Mirror at the time of acceptance but could not have been detected during verification at the Seller's place or by the inspection upon delivery or during the acceptance procedure due to the nature of the verification and inspection methods). In such a case, Art. 9.8 – 9.10. hereof apply.

#### Warranty (Quality Guarantee)

- 9.6 The Seller provides the warranty of quality for each Mirror for a period of 3 months from the date of acceptance of the Mirror. The Buyer shall raise a warranty claim against the Seller without undue delay after detecting a defect, but not later than on the last day of the warranty period, by means of a written notice sent to the Seller's authorised representative for technical matters set out herein.
- 9.7 The Seller shall remove the defect for which it is responsible free of charge.
- 9.8 The Seller undertakes to remove any defect within a deadline agreed with the Buyer. If the Parties do not reach an agreement, the Seller shall remove the defect (i) within two months and (ii) in case the removal requires remanufacture, the defect shall be removed within 20 weeks from raising the warranty claim.
- 9.9 The Parties shall execute a record on removal of the defect, in which they shall confirm that the defect has been removed.
- 9.10 The warranty shall not apply to defects caused by non-compliance with written rules of operation and maintenance of the Mirrors provided by the Seller, manipulation errors or by normal wear and tear.

### **X. Penalties and vis major circumstances**

#### Penalties

- 10.1 If the Seller is in delay with delivery of the Mirrors within the delivery deadline stipulated in Art. VI hereof, the Seller shall pay to the Buyer a contractual penalty for delay in the amount of 0,05% of the Purchase Price (without VAT) for every (even commenced) day of delay.
- 10.2 The total contractual penalty for delay with delivery of the Mirrors to the Place of Delivery shall not exceed 5% of the Purchase Price (without VAT)
- 10.3 If the Seller is in delay with the removal of a defect in case of hidden defects (Art. 9.5) or a warranty claim (Art. 9.6), the Seller shall pay to the Buyer a contractual penalty for delay in the amount of 0,01 % of the Purchase Price (without VAT) for every (even commenced) day of delay.
- 10.4 The total contractual penalties for delay with removal of defects under this Contract shall not exceed 2% of the Purchase Price (without VAT).
- 10.5 The Seller shall pay contractual penalties within fifteen (15) days from the day, on which the Buyer enumerated their claim.



- 10.6 The Buyer is entitled to unilaterally set off claims arising from the contractual penalties against the claim of the Seller for the payment of the Purchase Price (or any part of it).

Vis major circumstances

- 10.7 Circumstances constituting vis major shall be deemed to have been constituted by such circumstances / obstacles which arose independently of the will of the obliged Party, and which prevent fulfilment of that Party's obligation, provided that it could not be reasonably expected that the obliged Party could overcome or avert this obstacle or its consequences, and furthermore that such Party could foresee such obstacle when it entered into the respective covenants. Vis major shall not be constituted by obstacles that arose only after the obliged Party was in default with fulfilment of its obligations, or which arose in connection with its economic situation.

For the sake of clarity, the Parties agree that any particular effects or impacts on the Seller or his performance under this Contract of the Covid-19 epidemic that meet the conditions set out above in this Art. 10.7 will be considered as vis major cases despite the fact of the existence of the epidemic outbreak on the date of the signature of this Contract.

- 10.8 Should a situation occur, which a Party could reasonably consider to constitute vis major, and which could affect fulfilment of its obligations hereunder, such Party shall as soon as possible notify the other Party and attempt to continue in its performance hereunder in a reasonable degree. Simultaneously, such Party shall inform the other of any and all its proposals, including alternative modes of performance, however, without consent of the other Party, it shall not proceed to effect such alternative performance.
- 10.9 If a situation constituting vis major occurs, the deadlines imposed hereunder shall be extended by the period of the documented duration of the said vis major. The obliged Party shall properly document to the other Party the start and the finish of the vis major period.

**XI. Termination of the Contract**

- 11.1 This Contract may be terminated by withdrawal from the Contract on the grounds stipulated by law or in the Contract.
- 11.2 The Buyer is entitled to withdraw from the Contract without any penalty from Seller in any of the following cases:
- i) material breach of the Contract is committed by the Seller and the Seller has not remedied such breach within 1 month (or another longer period agreed to by the Buyer if to remedy the breach in 1 month is impossible for reasons documented by the Seller) following the sending of a written notice by the Buyer;
  - ii) insolvency proceedings are initiated against the Seller's assets;
  - iii) the Seller is in delay with the delivery of the Mirrors by more than 3 months.
- 11.3 The Seller is entitled to withdraw from the Contract without any penalty from Buyer in the event of material breach of the Contract by the Buyer.
- 11.4 Either Party is entitled to withdraw from the Contract without any penalty in case of a vis major event (Art. 10.7 hereof) that lasts more than six months.

**XII. Representatives, Notices**

- 12.1 The Seller has appointed the following authorised representative for communication with the Buyer in technical matters:
- Ing. Martin Klečka  
E-mail: [klecka@optixs.cz](mailto:klecka@optixs.cz), tel.: +420 607 014 278
- 12.2 The Buyer has appointed the following authorised representative for communication with the Seller in technical matters:



Dr. Jonathan Tyler Green, e-mail: [tyler.green@eli-beams.eu](mailto:tyler.green@eli-beams.eu), tel.: +420 266 051 423.

- 12.3 Unless this Contract stipulates otherwise, any and all notices that are to be or may be made between the Parties under this Contract must be made in writing and delivered to the other Party by an internationally renowned courier service (Federal Express, DHL, etc.), in person (with written confirmation of acceptance) or by registered post.

### **XIII. Choice of Law**

- 13.1 This Contract and all the legal relationships arising out of it shall be governed by the laws of the Czech Republic.
- 13.2 The Parties acknowledge and note that the provisions of the Czech Civil Code shall apply in matters that are not explicitly regulated by this Contract.
- 13.3 Any and all disputes arising out of this Contract or the legal relationships connected with the Contract shall be resolved by the Parties by mutual negotiations. In the event that any dispute cannot be resolved by negotiations within sixty (60) days, the dispute shall be resolved by the competent court in the Czech Republic based on an action of any of the Parties.

### **XIV. Export Control**

In the event that the supply of the Mirrors is subject to an end-user statement regarding use, an export license or any other similar administrative measure, the Buyer shall provide needed cooperation to meet the legal requirements and comply with the applicable rules. However, the Buyer must always remain entitled to use the Mirrors for the operation of the ELI Beamlines research centre in the Czech Republic. Any resale of Mirrors is subject to written approval of the Seller.

### **XV. Final provisions**

- 14.1 The Buyer hereby declares that it is not with respect to the subject hereof an entrepreneur and that the subject of the Contract doesn't fall within the scope of any of its entrepreneurial activities.
- 14.2 The Contract represents the entire and comprehensive agreement between the Buyer and the Seller.
- 14.3 In the event that any of the provisions of this contract shall later be shown or determined to be invalid, ineffective or unenforceable, then such invalidity, ineffectiveness or unenforceability shall not cause invalidity, ineffectiveness or unenforceability of the Contract as a whole. In such event the Parties undertake without undue delay to replace after mutual agreement such invalid, ineffective or unenforceable provision of the Contract by a new provision, that in the extent permitted by the laws and regulations of the Czech Republic, relates as closely as possible to the intentions of the Parties to the Contract at the time of creation hereof.
- 14.4 This Contract shall be valid on the date of the signature of both Parties and effective on the day, on which it was published in the register of contracts within the meaning of the Act no. 340/2015 Coll., on the Register of Contracts.
- 14.5 This Contract may be changed or supplemented solely by means of numbered supplements in writing, furnished with the details of time and place and signed by duly authorised representatives of the Parties.
- 14.6 The following Annexes form an integral part of the Contract:  
Annex No. 1: Requirements Specification Document
- 14.7 The Parties, manifesting their consent with its entire contents, affirm the Contract with their signature.



EUROPEAN UNION  
European Structural and Investing Funds  
Operational Programme Research,  
Development and Education



MINISTRY OF EDUCATION,  
YOUTH AND SPORTS

For: Fyzikální ústav AV ČR, v. v. i.

For: OptiXs, s.r.o.

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Name: RNDr. Michal Prouza, Ph.D.  
Title: Director

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Name: Ing. Martin Klečka  
Title: Statutory representative



EUROPEAN UNION  
European Structural and Investing Funds  
Operational Programme Research,  
Development and Education



MINISTRY OF EDUCATION,  
YOUTH AND SPORTS

## **Annex No. 1 Requirements Specification Document**

<b>Confidentiality Level</b>	<i>PU - Publish</i>	<b>TC ID / Revision</b>	<i>00272121/C</i>
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**[RSD Product Category B]**

## **Spherical Stretcher Mirrors**

### **TP20\_049**



### **Keywords**

n/a

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## 1. Introduction

### 1.1. Purpose

This Requirements Specification Document (RSD) lists the technical requirements and constraints for the selection of a set of 2 spherical mirrors (M1 and M2) which are to be delivered to a laboratory at ELI Beamlines. These mirrors will be used within the scope of the DUHA project. This leads to the identification of interfaces with the ELI science-based technology. This RSD also acts as the parent document for the technical requirements that need to be addressed in lower-level design description documents (see chapter 1.4).

### 1.2. Scope

This RSD contains all of the technical requirements: functional, performance and design, delivery, safety and quality requirements for the following product (*tender number: TP20\_049*): **Spherical Stretcher Mirrors** (further referred to as “**Mirror**” or “**Mirrors**” in plural).

The Mirrors will be located in the L2 laser hall and will be the primary components of the L2 DUHA pre-compressor. The products are registered in the PBS database under the following PBS codes: RA1.L2.L2\_1.FE.STR.CC and RA1.L2.L2\_1.FE.STR.CX.

### 1.3. Terms, Definitions and Abbreviations

For the purpose of this document, the following abbreviated terms are applied:

Abbreviation	Meaning
ELI	Extreme Light Infrastructure
RSD	Requirements Specification Document
CA	Contracting Authority (Institute of Physics AV CR, v. v. i.)
QR	Quality Report
RMS	Root Mean Square
NCR	Nonconformity Report

For the purpose of this document, the following definition is applied:

- **Clear Aperture** is the area of the optical component that must meet specification.

### 1.4. Reference documents

Number of doc.	Title of Document/File
RD-01	00272122-A _DRW-DUHA Stretcher Mirrors_M1-M2.zip

A detailed list of drawings including within **RD-01** archive:

DRAWING/ FILE NAME	FILE FORMAT
CC2200	PDF
CX1100	PDF

## 1.5. References to standards

If this document includes references to standards or standardized/ standardizing technical documents the CA allows/permits also another equal solution to be offered.

## 2. Functional, Performance and Design requirements

### 2.1. General requirements

REQ-029841/A

The **Mirrors** shall meet the general requirements defined in Table 1 and Table 2. The dimensional requirements for substrates are specified in the attached drawings (see **RD-01**; chapter 1.4). The requirements shall be met over the surface defined as clear aperture (defined in Table 1, 1.5 and Table 2, 2.5).

*NOTE: The "horizontal" dimension is in the direction of the long dimension of each mirror face and "vertical" is in the direction of the short dimension of each mirror face.*

REQ-029842/A

The performance and stability parameters of the **Mirrors** specified in Table 1 shall be satisfied for the following ambient environmental conditions: Room temperature 19 °C, stability  $\pm 0.5$  °C, pressure 1.0 bar.

REQ-029843/A

S1 chamfers of the **Mirrors** shall be polished to no visible gray. Chamfers on all edges shall be 1.00 mm  $\times$  45.0°.

*NOTE: The S1 is defined as the spherical, reflective surface for each mirror.*

**Table 1 Technical Parameters of concave mirror M1**

#	Parameter (description)	Required value
1.1	Material	Fused Silica Mirror Grade with total inclusion cross-section < 0.03 mm <sup>2</sup> per 100 cm <sup>3</sup> for inclusions in the first 10 mm of the material at front mirror side, un-specified Homogeneity
1.2	Width (mm) x Length (mm)	500 x 230 ± 1
1.3	Center Thickness (mm)	64 ± 1
1.4	Radius of Curvature on spherical surface (mm)	2200 ± 10 (concave)
1.5	Clear Aperture (mm x mm)	Minimum 474 x 204, larger aperture on best effort basis
1.6	Final surface figure error for spatial features greater than 10 mm after coating P-V (nm)	< 25
1.7	Final surface figure error for spatial features greater than 10 mm after coating RMS (nm)	< 6
1.8	Slope Horizontal (spatial periods 0.5 – 10.0 mm) (μrad)	< 1.5
1.9	Slope Vertical (spatial periods 0.5 – 10.0 mm) (μrad)	< 3
1.10	RMS micro roughness (angstroms)	< 5
1.11	Coating on S1	Enhanced silver > 98% reflectivity over 200 nm centered at 810 nm
1.12	Scratch Dig (after coating)	20-10 per MIL-PRF-13830B
1.13	Damage Threshold	> 0.1 J/cm <sup>2</sup> ; 800 nm; 1.5 ns; 2 W maximum average power

**Table 2 Technical Parameters of convex mirror M2**

#	Parameter (description)	Required value
2.1	Material	Fused Silica Mirror Grade with total inclusion cross-section < 0.03 mm <sup>2</sup> per 100 cm <sup>3</sup> for inclusions in the first 10 mm of the material at front mirror side, un-specified Homogeneity
2.2	Width (mm) x Length (mm)	270 x 80 ± 1
2.3	Edge Thickness (mm)	50.0 ± 1
2.4	Radius of Curvature on spherical surface (mm)	1100 ± 15 (convex)
2.5	Clear Aperture (mm x mm)	Minimum 254 x 64, larger aperture on best effort basis
2.6	Final surface figure error for spatial features greater than 10 mm after coating P-V (nm)	< 25
2.7	Final surface figure error for spatial features greater than 10 mm after coating RMS (nm)	< 6
2.8	Slope Horizontal (spatial periods 0.5 – 10.0 mm) (μrad)	< 1.5
2.9	Slope Vertical (spatial periods 0.5 – 10.0 mm) (μrad)	< 3

#	Parameter (description)	Required value
2.10	RMS micro roughness (angstroms)	< 5
2.11	Coating on S1	Enhanced silver > 98% reflectivity over 200 nm centered at 810 nm
2.12	Scratch Dig (after coating)	20-10 per MIL-PRF-13830B
2.13	Damage Threshold	> 0.1 J/cm <sup>2</sup> ; 800 nm; 1.5 ns; 2 W maximum average power; line beam 120 mm × 0.15 mm (1/e <sup>2</sup> )

*NOTE: Regarding the referred to standard/s the CA allows/permits also another equal solution to be offered.*

## 2.2. Marking

REQ-029844/A

The **Mirrors** shall be marked with bead blasting or with laser engraving, using character size at least 8 mm. The M1 (concave) mirror shall be marked with the "20050155" serial number and the M2 mirror shall be marked with "20050156" serial number.

## 3. Packaging and Delivery requirements

### 3.1. General requirements

REQ-029845/A

All the **Mirrors** shall be cleaned and packaged in the clean environment of class 6 according to ČSN EN ISO 14644 (or equivalent, e.g. EN ISO 14644) on best effort basis.

*NOTE: Regarding the referred to standard/s the CA allows/permits also another equal solution to be offered.*

REQ-029846/A

Each **Mirror** shall be placed in a separate PET-G container preventing damage, degradation and contamination. The PET-G containers shall be packed in a minimum of two plies separate clean packaging and placed in a sufficiently padded box for transport.

### 3.2. Delivery

REQ-029847/A

The transportation to the final destination shall be conducted by the Supplier.

*NOTE: The bid price will be considered by the CA as the final price, including transportation cost.*

## 4. Quality control

### 4.1. Quality Reports (QRs)

REQ-029848/A

For each **Mirror**, the Supplier shall perform the following tests of product quality and provide corresponding **specific quality reports (I - VI)**:

- I. An interferometric report after coating of the mirror surface with a map showing a departure from the ideal reflected wavefront in units of testing wavelength  $\lambda$  and/or nm as well as wavefront RMS, gradient and mid spatial frequencies;
- II. Reflection spectra of each mirror;
- III. Surface quality report with scratch and dig map listing the main defects and their locations;
- IV. Microroughness report. Roughness shall be evaluated with a 10 mm low pass filter at 2 locations for each mirror;
- V. Dimensional report providing information about the measured physical dimension of the manufactured product;
- VI. Material report or certificate showing also the batch number and producer when applicable.

*NOTE 1: The results of the factory verification of the Mirrors shall be provided to the CA before mirror delivery.*

*NOTE 2: The results shall be provided in print as well as in digital formats.*

*NOTE 3: The QRs shall demonstrate compliance with parameters defined in tables 1 and 2 (excluding damage threshold).*

### 4.2. Documentation and data control

REQ-029849/A

The Supplier shall provide Instructions for use (Product User Manual) as part of the delivered Product. The manual shall include the instructions and descriptions regarding the following:

- transport, handling, storage and cleaning;
- safe operation and maintenance procedures.

REQ-029850/A

The Supplier shall supply the following relevant manufacturing documents:

- all approved by the CA manufacturing drawings and design supporting documentation (see chapter 4.3.1);
- all approved by the CA "requests for deviation/wavier from requirements described herein".

REQ-029851/A

For each mirror, the Supplier shall provide a Declaration of Conformity (or the equivalent document) with technical requirements defined by the product RSD and ensure completeness of the products.

REQ-029852/A

The Supplier shall provide the interferometric data from the quality report I (see REQ-029848/A) in a digital form readable by Zygo MX software. Data format shall be agreed with the CA.

REQ-029853/A

The Supplier shall establish and maintain a nonconformity control system compatible with ČSN EN ISO 9001 (or equivalent, e.g. EN ISO 9001).

*NOTE: Regarding the referred to standard/s the CA allows/permits also another equal solution to be offered.*

### 4.3. Phasing of the delivery

This chapter is intended to briefly summarize basic milestones of the Contract delivery. These milestones represent gates (checkpoints) where the quality of the delivery is to be evaluated.

Delivery shall not proceed past these gates unless their satisfactory accomplishment is approved by the CA.

Delivery lifecycle shall contain at least the following phases (**quality gates**):

- **Qualification of Design;**
- **Manufacturing;**
- **Acceptance.**

#### 4.3.1. Qualification of Design

Summary of what has to be provided by the Supplier in terms of documentation (QRs and manufacturing drawings) before starting the manufacturing. The goal is to verify the **manufacturing drawings and design supporting documentation**.

The output of this phase is **the Qualified Design and the agreed scope of technical documentation**.

REQ-029854/A

Before completion of the Qualification Design phase the Supplier shall provide following information that shall be agreed by the CA:

- final manufacturing drawings provided by the Supplier (see REQ-029850/A);
- structure and content of the Quality Reports (QRs, see REQ-029848/A);
- common nonconformity control system (see REQ-029853/A).

### 4.3.2. Manufacturing

The goal is to demonstrate that the manufactured products meet the specified technical requirements (RSD) of the CA.

This quality gate concerns primarily:

- **Inspection of the manufactured products;**
- **Testing at the Supplier's site** (factory testing);
- **Cleaning, Packaging and shipping.**

The output of this phase is the **Verified Final Product**.

REQ-029855/A

The results of the Manufacturing phase of verification shall be recorded by the Supplier in the appropriate **QRs** (or in another factory/quality reports, if not specified in chapter 4.1) and provided to the CA for approval.

*NOTE: The results of all the tests shall be given strictly in units which are used to define the requirements in chapter 2.*

### 4.3.3. Acceptance

Acceptance will be carried out by the CA upon delivery of the Mirrors not obviously damaged during transport. The basis for acceptance will be approved QRs summarizing the overall verification results together with relevant documentation supporting the verification (i.e. approved manufacturing drawings, Instructions for use, Declaration of conformity, etc.).

In case of successful acceptance phase, the CA will provide to the Supplier signed acceptance protocol. In case of unsuccessful acceptance stage the CA will provide to the Supplier Nonconformity Report (NCR) and process in accordance with REQ-029853/A shall be applied.

REQ-029856/A

The Acceptance phase shall demonstrate the following:

- The final products have been successfully verified by the Supplier and the results of this process have been documented in an appropriate way through QRs;
- All detected nonconformities have been solved in accordance with REQ-029853/A;
- The final products are free of fabrication errors and are ready for the intended operational use.