



## 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 registered office at Praha 8, Na Slovance 2, PSČ 182 00

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

Registered in the register of public research institutions of the Ministry of Education, Youth and Sports of the Czech Republic

Id. No.: 68378271

Tax Id. No.: CZ68378271

(hereinafter the “**Buyer**”)

and

2. Seller:

**Manx Precision Optics limited.**

with its registered office at Units 11-12A, The Freeport, Ballasalla, Isle of Man IM92AP

represented by: Chris Bridle- Key Account Manager

Id. No. (if any): N/A

(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 from 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 “L2BT Uncoated Mirrors TP22\_043” (hereinafter the “**Public Contract**”).

### III. Subject of the Contract

- 3.1 Under this Contract, the Seller shall design, manufacture and deliver to the Buyer a set of uncoated mirrors in the number, as specified and under the conditions stipulated herein and in Annex No 1 hereto Requirements Specification Document (hereinafter the “**Mirrors**” and “**RSD**”).

The Mirrors shall be manufactured from the material identified by the Seller in its bid submitted within the Public Contract awarding procedure. The Seller may use other material only if it conforms with the material specifications of Annex No 1 hereto and subject to prior written approval of the Buyer.



- 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.
- 3.3 If it is requested in the RSD that the Buyer exercise best efforts to achieve certain result they are obliged to exercise all due professional care (expectable from an excellent professional in the given field) to achieve the result. If the result is not achieved by the Seller they have to present to the Buyer which appropriate technical measures were taken to achieve it, mainly focused on the fact the Seller did not resign on achieving the result.

#### **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 (art. 8.3 hereof).

The ownership title to the Mirrors shall pass to the Buyer upon execution of the acceptance protocol or of a partial acceptance protocol (art. 8.4 hereof).

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

- 5.1 The purchase price for the Mirrors is stipulated in Annex No 2 hereto Prices (hereinafter the "**Purchase Price**").
- 5.2 All the prices set out in this Contract are exclusive of VAT paid in the Czech Republic which will be paid by the Buyer. The Seller, if applicable, is responsible for clearing the Mirrors for export (export customs formalities and financial duties). The Buyer is responsible for clearing the Mirrors for import (import customs formalities and financial duty if any).
- 5.3 The Purchase Price includes all the costs related to the performance of the subject of this Contract. The Purchase Price is the maximum permissible price. The Purchase Price is independent of the development of subsupplier prices and currency exchange rates.
- 5.4 The Purchase Price shall be paid on the basis of tax documents – invoices, to the account of the Seller designated in the invoice.

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

- 40 % of the Purchase Price after the approval of the Qualified Design;
- 50 % of the Purchase Price after completion of verification of the manufactured Mirrors; in case that the verification of individual Mirrors will be done in different times, the Seller is entitled to invoice 50% of the price of each successfully verified Mirror;
- 10 % of the Purchase Price after the signature of the acceptance protocol by the Buyer pursuant to this Contract; in case that the acceptance of individual Mirrors will be done in different times, the Seller is entitled to invoice 10% of the price of each successfully accepted Mirror.

- 5.5 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. The tax documents – invoices shall have properties of a tax document according to applicable legal regulation. Furthermore, they have to include:

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;

And must also be in conformity with any double taxation treaties applicable to the given case.

The Buyer shall advise the Seller on the proper contents of invoices prior invoicment.

- 5.6 Invoices shall be submitted to the Buyer only in the electronic form on the email address: [efaktury@fzu.cz](mailto:efaktury@fzu.cz)
- 5.7 If the Seller performs the subject-matter hereof duly in line herewith without substantial breaches of the Contract and if there are no obvious reasons for doubts on continuing of the due performance hereof by the Seller, by taking into account the overall approach of the Seller to the Contract performance (presented particularly by due preparation for performance of follow-up activities), and if it might ease further performance



hereof by the Seller, the Buyer reserves the right fully on its discretion to provide the Seller with the Purchase Price instalments sooner than scheduled hereunder or in higher amount than stipulated herein (i.e. any instalments might be increased with proportional decreasing of subsequent instalments). If the conditions stipulated above are met, the Buyer is entitled to modify the payment schedule stated herein anyhow in favour of the Seller and to provide it with any prepayment.

## **VI. Delivery Period**

The Seller shall deliver the Mirrors to the place of delivery **within 31 weeks** from the signature of this Contract.

## **VII. Place of delivery**

The place of delivery shall be ELI Beamlines facility, Za Radnicí 836, ZIP 252 41, Dolní Břežany, district Prague-west, the Czech Republic.

## **VIII. Delivery Phasing and Acceptance of the Mirrors**

### Qualification of Design

- 8.1 The Seller shall submit to the Buyer manufacturing drawings and design supporting documentation in line with 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 submitted by the Seller within 10 business days from receiving it. Potential necessity of implementation of any comments of the Buyer does not postpone the delivery deadline stipulated hereby if the above deadline is met by the Buyer. If the deadline for provision of the statement is not met by the Buyer the delivery deadline extends accordingly.

### Manufacture, Verification and Delivery

- 8.2 The Seller shall carry out manufacture, factory testing and verification of the Mirrors and transport the Mirrors to the place of delivery in line with Annex No 1 hereto (RSD).
- 8.3 The Buyer shall confirm the delivery of the Mirrors to the place of delivery to the Seller or to a carrier designated by the Seller.
- 8.4 The Mirrors shall be accepted in the place of delivery on the basis of an acceptance protocol according to Annex No 1 hereto (RSD). Partial acceptance is possible.

## **IX. Warranty and Claims Based on Defects of the Supply**

- 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 Buyer's site (non-conformity with requirements of this Contract) 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 defect of the Mirrors is detected during verification process at the Seller's site, the Seller shall present a defect removal schedule under which the defect is 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 defect. If the Seller removes the defect within the agreed additional time, the additional time for the defect removal shall not be taken into account in terms of meeting the delivery deadline (Art. VI hereof). The rules of this Art. 9.2 shall similarly apply also in case of defects that occur prior to verification process where it is obvious that the original delivery deadline can't be met (e.g. sudden damage during manufacture).
- 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.

### Hidden defects



- 9.4 Acceptance of the Mirrors in the Buyer's site 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 due to the nature of the verification and inspection methods). In such a case, Art. 9.6 – 9.8. hereof apply.

#### Warranty (Quality Guarantee)

- 9.5 The Seller provides the warranty of quality for each Mirror for a period of 6 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.
- 9.6 The Seller shall remove the defect for which it is responsible free of charge.
- 9.7 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 three months and (ii) in case the removal requires remanufacture, the defect shall be removed within 30 weeks from raising the warranty claim.
- 9.8 The Parties shall execute a record on removal of the defect, in which they shall confirm that the defect has been removed.
- 9.9 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**

- 10.1 If the Seller is in delay with the due delivery of any Mirror to the place of delivery, the Seller shall pay to the Buyer a contractual penalty in the amount of 0,1 % of the price of the respective Mirror without VAT (as stipulated in Annex No 2 hereto Prices) for every (even commenced) day of delay.
- 10.2 If the Seller is in delay with the removal of a defect, the Seller shall pay to the Buyer a contractual penalty in the amount of 0,02 % of the price of the respective Mirror without VAT (as stipulated in Annex No 2 hereto Prices) for every (even commenced) day of delay.
- 10.3 Should a delay of the Seller be caused by a documented impact of the Covid-19 pandemic or of the war in Ukraine on the course of performance of this Contract by the Seller (e.g. sick workers, sub-supplies delays or failures, etc.), the contractual penalties for delay above do not apply. The Seller shall in sufficient detail document when an obstacle occurred and how long it lasted. The penalties do not apply also in the case of such obstacle caused by Covid-19 pandemic or by the war in Ukraine, which could have been overcome but only with unreasonable efforts or disproportionate costs.
- 10.4 The Seller shall pay contractual penalties within fifteen (15) days from the day, on which the Buyer enumerated their claim. The payment of contractual penalties shall not affect the right of the Buyer to damages to the extent to which such damages exceed the contractual penalty.
- 10.5 Total amount of contractual penalties that the Buyer is entitled to claim shall not exceed 10 % of the Purchase Price without VAT.
- 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.

#### **XI. Termination of the Contract**

- 11.1 This Contract may be terminated by agreement of the Parties or 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;
  - ii) insolvency proceedings are initiated against the Seller's assets;



iii) the Seller is in delay with the delivery of the Mirror more than by 6 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.

## **XII. Representatives, Notices**

12.1 The Seller has appointed the following authorised representative for communication with the Buyer in technical matters:

Chris Bridle

E-mail: xxxxxxxx

12.2 The Buyer has appointed the following authorised representative for communication with the Seller in technical matters:

Dr. Daniel Kramer, e-mail: xxxxxxxxxxxx

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 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 application of any of the Parties.

## **XIV. Export Control**

Export law of US or other countries may require an end-user statement regarding use and may also require an export license. In the event that such items are required, the supply of the Mirrors is subject to receipt of an end-user statement from the Buyer and approval of application for an export license. The resale of Mirrors is subject to written approval of the Seller. Buyer shall not deliver the Mirrors to countries, where such delivery would constitute a violation of US or any other country export regulations and/or laws.

## **XV. Social, Ecological and Innovative Aspects**

The Buyer aims to conclude contracts with Sellers that take into account and implement the principles of social responsibility, ecological sustainability and innovation. Therefore, the Seller shall ensure that:

- a) this Contract is fulfilled only by persons that are employed in accordance with the applicable legal regulations (no illegal or child workers);
- b) while performing this Contract, all applicable health and safety regulations and rules at work place are observed;
- c) all persons performing this Contract are employed under fair and non-discriminatory working conditions;
- d) if presented with different manners of fulfilling this Contract, the Seller shall select the solution/process that is in accordance with the principles governing nature conservation and nature protection, ecological sustainability and ecological waste management; and
- e) if presented with different manners of fulfilling this Contract, the Seller shall select the solution/process that is the



most innovative.

#### **XVI. Assignment**

- 16.1 The Seller shall not be entitled to assign any rights or obligations arising in connection herewith to a third party.
- 16.2 The Buyer makes the Seller aware that the Buyer is going with anticipated effect as of 1.1.2023 to transfer the ELI Beamlines research facility (now owned and operated by the Buyer) for construction and operation of which is the supply under this Contract being agreed to to The Extreme Light Infrastructure ERIC (ELI ERIC). The ELI ERIC is a legal person set up under Regulation (EC) No 723/2009 and it is the future long term owner and operator of the ELI Beamlines facility. The Seller by entering this Contract agrees to the assignment of all rights and obligations from this Contract by the Buyer to ELI ERIC. The Buyer shall inform the Seller on the completed assignment without undue delay and the assignment shall become effective at the moment of its notification to the Seller. The supply supplied under this Contract will be used exclusively in the ELI Beamlines facility.

#### **XVII. Final provisions**

- 17.1 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.
- 17.2 The Contract represents the entire and comprehensive agreement between the Buyer and the Seller.
- 17.3 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.
- 17.4 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.
- 17.5 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.
- 17.6 This Contract is executed only electronically. The following Annexes are integral parts of the Contract:  
Annex No. 1: Requirements Specification Document,  
Annex No. 2: Prices.
- 17.7 The Parties, manifesting their consent with its entire contents, affirm the Contract with their signature.

For: Fyzikální ústav AV ČR, v. v. i.

For: Manx Precision Optics limited.

On November 28<sup>th</sup> 2022

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

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Name: Chris Bridle  
Title: Key Account Manager



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>BL - Restricted for internal use</i>                                           | <b>TC ID / Revision</b> | 00338855/C |
| <b>Document Status</b>       | <i>Document Released</i>                                                          | <b>Document No.</b>     | N/A        |
| <b>PBS code</b>              | RA1.L2.L2_1.CMP.O.1-17;<br>SE.BDS.BT.L2BT.S1.FM.10-12; SE.BDS.BT.L2BT.S5.FM.2-10; |                         |            |
| <b>OBS code</b>              | 912 L2 DUHA Laser                                                                 |                         |            |
| <b>Project branch</b>        | <i>Engineering &amp; Scientific documents (E&amp;S)</i>                           |                         |            |
| <b>Document Type</b>         | <i>Specification (SP)</i>                                                         |                         |            |

**[RSD product category B]**

## **L2BT uncoated mirrors**

### **TP22\_043**



#### **Keywords**

Mirror, optics, polishing, beam transport

|                           | <b>Position</b>                               | <b>Name</b> |
|---------------------------|-----------------------------------------------|-------------|
| <b>Responsible person</b> | Group leader of Optical Materials Development | XXXXX       |
| <b>Prepared by</b>        | Group leader of Optical Materials Development | XXXXX       |

| <i>RSS TC ID/revision</i> | <i>RSS - Date of Creation</i> | <i>RSS - Date of Last Modification</i> | <i>Systems Engineer</i> |
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| <b>Reviewed By</b>     |                                                      |             |                        |
|------------------------|------------------------------------------------------|-------------|------------------------|
| <i>Name (Reviewer)</i> | <i>Position</i>                                      | <i>Date</i> | <i>Signature</i>       |
| xxxxx                  | Group Leader of L1 Allegra Laser                     |             | NOTICE                 |
| xxxxx                  | Beam Transport Manager                               |             | <a href="#">Via TC</a> |
| xxxxx                  | Research Assistant (Optical Materials Development)   |             | NOTICE                 |
| xxxxx                  | Group leader of L2 DUHA                              |             | NOTICE                 |
| xxxxx                  | Legal Group leader                                   |             | Via e-mail             |
| xxxxx                  | Group Leader of Quality and Planning                 |             | NOTICE                 |
| xxxxx                  | Group Leader of Safety                               |             | <a href="#">Via TC</a> |
| xxxxx                  | Cleanroom Group Leader                               |             | NOTICE                 |
| xxxxx                  | Group Leader of Installations                        |             | <a href="#">Via TC</a> |
| xxxxx                  | Head of Department of Building Infrastructure and IT |             | NOTICE                 |

| <b>Approved by</b>     |                                     |             |                  |
|------------------------|-------------------------------------|-------------|------------------|
| <i>Name (Approver)</i> | <i>Position</i>                     | <i>Date</i> | <i>Signature</i> |
| xxxxx                  | Head of department of Laser Systems |             |                  |
| xxxxx                  | Group Leader of L1 Allegra Laser    |             |                  |

| <b>Revision History / Change Log</b> |                  |             |                                            |                |
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## 1. Introduction

### 1.1. Purpose

This Requirements Specification Document (RSD) lists the technical requirements and constraints on product applying in RA1 Program of the ELI project. This can lead to the identification of product interfaces with the ELI science based technology and ELI building facility. This RSD also acts as the parent document for the technical requirements that need to be addressed in lower level design description documents.

### 1.2. Scope

This RSD contains all of the technical requirements: functional, performance, operational & design, transportation, safety & quality requirements for the following products: **L2 uncoated mirrors (TP22\_043)**, further referenced as **Mirrors**.

The products are integral parts of the standalone **L2 DUHA Beam Transport laser system**.

In addition to the requirements specified in this RSD, the Mirrors shall comply completely with the requirements given in the Reference documents [see chapter 1.4].

The mirrors will be later coated by multilayer dielectric coatings that are not subject of this tender. Within the tolerances specified in RD-01, CA prefers concave shape rather than convex for the S1 surfaces.

### 1.3. Terms, Definitions and Abbreviations

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

| Abbreviation | Meaning                                                      |
|--------------|--------------------------------------------------------------|
| CA           | Contracting Authority (Institute of Physics AV CR, v. v. i.) |
| ELI          | Extreme Light Infrastructure                                 |
| QR           | Quality Report                                               |
| RA1          | Research Activity 1                                          |
| RMS          | Root Mean Square                                             |
| RSD          | Requirements Specification Document                          |
| VCD          | Verification Control Document                                |

## 1.4. Reference Documents

| Number of doc. | Title of Document/File |
|----------------|------------------------|
| RD-01          | Drawings.rar           |

Detailed list of drawings included within **RD-01** archive:

| Type # | Drawing Name | Drawing Number | Sheets | File format |
|--------|--------------|----------------|--------|-------------|
| 1      | L2-M1        | 00338737/01    | 1      | PDF         |
| 3      | L2-M3        | 00338739/03    | 1      | PDF         |
| 4      | L2-M4        | 00338740/01    | 1      | PDF         |
| 5      | L2-M5        | 00338741/01    | 1      | PDF         |
| 6      | L2-PM1       | 00338742/01    | 1      | PDF         |
| 7      | L2-DM1       | 00338743/01    | 1      | PDF         |
| 8      | L2BT-FM45    | 00338749/01    | 1      | PDF         |

## 1.5. References to Standards

If this document includes references to standards or technical documents the CA allows/permits also another equal solution to be offered. If the Supplier offers another equal solution the CA shall not reject its bid, once the Supplier by appropriate means in the bid proves that the offered supplies, services or works meet in an equivalent manner the requirements including references to standards or technical documents.

## 2. Functional, Performance and Design Requirements

Functional, performance and design requirements for the **Mirrors** are summarized within reference drawings **RD-01** (see Chapter 1.4).

### 2.1. General Requirements

REQ-034963/A

The Supplier shall deliver within the firm scope of delivery the number of **Mirrors** given in Table 1.

*NOTE: Type 2 (L2-M2) was removed, as it is identical to L2BT-FM45.*

**Table 1 – number of elements to be delivered**

| Type # | Drawing Name | Pieces required |
|--------|--------------|-----------------|
| 1      | L2-M1        | 2               |
| 3      | L2-M3        | 2               |
| 4      | L2-M4        | 2               |
| 5      | L2-M5        | 3               |
| 6      | L2-PM1       | 3               |
| 7      | L2-DM1       | 3               |
| 8      | L2BT-FM45    | 13              |

REQ-034965/A

The Supplier shall provide the manufacturing drawings for the **Mirrors** in conformity with reference document **RD-01** (see chapter 1.4) for the review as agreed with the CA.

*NOTE: It is not necessary to disclose any proprietary information but to make sure all the requirements related to production from this RSD were correctly taken into account.*

REQ-034966/A

The parameters of the uncoated **Mirrors** shall correspond to the requirements given in the reference document **RD-01** (see Chapter 1.4).

---

Verification method: T – Test: QR-I, QR-II, QR-III, QR-V

REQ-034967/A

The substrate material of each **Mirror** shall be selected according to **RD-01**. CA allows also high quality fused quartz for all mirrors **except** for **L2-M4**.

---

Verification method: T – Test: QR-IV

REQ-034968/A

Each **Mirror** shall be delivered with 2pc of 50.8 mm (+0/-0.5 mm) diameter witness samples polished with the same technology and made from same material as the main parts. The thickness shall be  $(9.5 \pm 0.5)$  mm and wedge 10 to 35 arc min.

---

Verification method: T – Test: QR-IV

REQ-034984/A

The transmitted wavefront error of **Mirrors M4** shall be according to the requirements given in the reference document **RD-01** (see Chapter 1.4). Equivalent measurement under normal incidence is allowed.

---

Verification method: T – Test: QR-VI

## 2.2. Marking

REQ-034969/A

Each **Mirror** shall be marked according to the reference document **RD-01** with Part Name and Unique Part identifier (EUN). **Laser Engraving** is allowed too. Alternative marking methods must be agreed with CA in advance. The respective EUNs and part names are listed in Table 2.

**Table 2: names and serial numbers for marking**

| Element type   | Element type # | Part Name | Unique part identifier EUN |
|----------------|----------------|-----------|----------------------------|
| M1             | 1              | L2-M1     | 22080046                   |
| M1_spare       | 1              | L2-M1     | 22080047                   |
| M2             | 8              | L2-M2     | 22080048                   |
| M2_SPARE       | 8              | L2-M2     | 22080049                   |
| M3             | 3              | L2-M3     | 22080050                   |
| M3_SPARE       | 3              | L2-M3     | 22080051                   |
| M4             | 4              | L2-M4     | 22080052                   |
| M4_SPARE       | 4              | L2-M4     | 22080053                   |
| M5             | 5              | L2-M5     | 22080054                   |
| M6             | 5              | L2-M5     | 22080055                   |
| M5_SPARE       | 5              | L2-M5     | 22080056                   |
| PM1            | 6              | L2-PM1    | 22080057                   |
| PM2            | 6              | L2-PM1    | 22080058                   |
| PM1_SPARE      | 6              | L2-PM1    | 22080059                   |
| DM1            | 7              | L2-DM1    | 22080060                   |
| DM2            | 7              | L2-DM1    | 22080061                   |
| DM1_SPARE      | 7              | L2-DM1    | 22080062                   |
| BT FOLD MIRROR | 8              | L2BT-FM45 | 22080063                   |
| BT FOLD MIRROR | 8              | L2BT-FM45 | 22080064                   |
| BT FOLD MIRROR | 8              | L2BT-FM45 | 22080065                   |
| BT FOLD MIRROR | 8              | L2BT-FM45 | 22080066                   |
| BT FOLD MIRROR | 8              | L2BT-FM45 | 22080067                   |
| BT FOLD MIRROR | 8              | L2BT-FM45 | 22080068                   |
| BT FOLD MIRROR | 8              | L2BT-FM45 | 22080069                   |
| BT FOLD MIRROR | 8              | L2BT-FM45 | 22080070                   |
| BT FOLD MIRROR | 8              | L2BT-FM45 | 22080071                   |
| BT FOLD MIRROR | 8              | L2BT-FM45 | 22080072                   |
| BT FOLD MIRROR | 8              | L2BT-FM45 | 22080073                   |

## 2.3. Transportation Requirements

REQ-034971/A

The transportation to the final destination of the **Mirrors** shall be conducted by the Supplier within the time stipulated in the contract.

*NOTE: The Supplier is fully responsible for the delivery of undamaged mirrors.*

## 2.4. Packaging Requirements

REQ-034972/A

All the **Mirrors** shall be cleaned and packed in a clean environment of Class 7 according to ČSN EN ISO 14644 (equivalent to ISO 14644) or cleaner.

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

REQ-034973/A

Each **Mirror** shall be placed in a separate (ideally a PET-G) container preventing damage, degradation and contamination. The containers shall be packed in a minimum of one plie separate clean packaging and placed in a sufficiently padded box for transport. Transport boxes shall contain tilt and shock sensors. Alternative solution consisting i.e. of metallic or plastic containers with compliant inserts has to be approved by CA in advance.

## 3. Quality Control

### 3.1. Quality Reports (QRs)

REQ-034974/A

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

- I. Cosmetic quality report listing the main defects and locations;
- II. Microroughness report from center and 1 corner;
- III. Dimensional report listing main dimensions;
- IV. Substrate material report;
- V. Interferometric report of surface flatness over the clear aperture including wavefront slope error. Subaperture measurement is possible for spatial periods smaller than 6 mm. Equivalent measurement at normal incidence is allowed;
- VI. Interferometric report of transmitted wavefront error over the clear aperture including wavefront slope error. Subaperture measurement is possible for spatial periods smaller than 6 mm.

### 3.2. Documentation and Data Control

REQ-034975/A

For each **Mirror** the Supplier shall provide an Outgoing control report or the Report of compliance with technical requirements defined by the product RSD and ensure completeness of the products.

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Verification method: QR-I

REQ-034976/A

The Supplier shall use following data formats:

- \*.dat (Zygo MX compatible binary file format for interferograms)
- \*.JPG, \*.PDF/A, \*.HTML
- CAD 2D: \*.dwg
- CAD 3D: \*.stp; \*.ste; \*.step or other 3D CAD formats agreed with the CA
- text processors \*.doc, \*.docx, OpenDocument Format
- spreadsheet processors \*.xls, \*.xlsx, OpenDocument Format
- presentations \*.ppt, \*.pptx; OpenDocument Format

REQ-034977/A

The Supplier shall provide following type of documents:

- 3D model (if available);
- 2D manufacturing drawings;
- Printable format for text documents;
- Binary format for interferometric data readable by Zygo MX Software

### 3.3. Non-Conformity Control System

REQ-034978/A

The Supplier shall establish and maintain a non-conformance control system compatible with ČSN EN ISO 9001 (equivalent to EN ISO 9001).

*NOTE: It is not required to have the ISO 9001 certification. The requirement refers to the process of receiving, archiving, solving and realization of preventive actions if the non-conformity occurs. If the non-conformity process is valid and used in the way to satisfy the customer, the requirement is considered fulfilled.*

## 4. Verification Requirements for the Supplier

The verification process will be performed by the Supplier to demonstrate that the **Mirrors** meet the specified requirements of the CA.

## 4.1. 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**

### 4.1.1. Qualification of Design

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

Output of this phase is **Qualified Design**.

REQ-034979/A

The Supplier shall present to the CA the following documents for approval:

- detailed procedures related to the testing during Manufacturing phase;
- final manufacturing drawings and metrology layout (see REQ-034976/A and REQ-034977/A). No proprietary information shall be revealed to the CA on the drawings.

REQ-034980/A

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

- structure and content of quality reports (see REQ-034974/A);
- **HOW** and **WHEN** each of the technical requirements related to the final product will be verified (through QR, see REQ-034974/A).

REQ-034981/A

Before the ending of Qualified Design phase the Supplier and the CA shall agree on:

- detailed procedures related to the testing during Manufacturing phase;
- common non-conformance control system (see REQ-034978/A);
- packaging type.

### 4.1.2. Manufacturing

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

This quality gate concerns primarily:

- **Testing at Supplier's site** (factory testing);
- **Packaging**

Output of this phase is the **Final Product**.

REQ-034982/A

The results of verification within the Manufacturing phase shall be recorded by the Supplier in corresponding QRs (see REQ-034974/A) and provided to the CA for approval (see chapter 4.1.3.).

### 4.1.3. Acceptance

The Acceptance phase (as defined in the Contract) shall demonstrate the following:

- Final products have been successfully verified and this process has been documented in an appropriate way through QRs (see REQ-034974/A);
- All detected non-conformities have been solved in accordance with REQ-034978/A;
- Final products are free of fabrication errors.

Output of this phase is a **Final Verified Product**.

In case of successful acceptance phase the CA shall provide to the Supplier signed acceptance protocol.

In case of unsuccessful acceptance stage the CA shall provide to the Supplier Non-Conformity Report (NCR) and ELI non-conformity control process shall be applied (see REQ-034978/A).

REQ-034983/A

Verification process shall be carried out by the Supplier and it is successfully completed when the final products comply with all specifications and the results of this process are documented in an appropriate way through QRs (see REQ-034974/A).

The Acceptance shall be carried out by the CA (or if required, representatives/contractors appointed by the CA) on the final products at the **CA's site**.



## Annex No. 2 Prices

| Type                         | Item      | Quantity [pcs] | Price per item without VAT [EUR] | Price per quantity without VAT [EUR] |
|------------------------------|-----------|----------------|----------------------------------|--------------------------------------|
| 1                            | L2-M1     | 2              | [erased]                         | [erased]                             |
| 3                            | L2-M3     | 2              | [erased]                         | [erased]                             |
| 4                            | L2-M4     | 2              | [erased]                         | [erased]                             |
| 5                            | L2-M5     | 3              | [erased]                         | [erased]                             |
| 6                            | L2-PM1    | 3              | [erased]                         | [erased]                             |
| 7                            | L2-DM1    | 3              | [erased]                         | [erased]                             |
| 8                            | L2BT-FM45 | 13             | [erased]                         | [erased]                             |
| <b>Total bid price [EUR]</b> |           |                |                                  | <b>196 250,00</b>                    |