



## **Statement of Work Fabrication of Machined Table Masses for Advanced LIGO BSC-ISI**

### **1.0 Scope (SEI)**

### **2.0 Document Access**

Many supplemental documents and specifications are incorporated into and made a part this Statement of Work. Click on the document links to access these documents from the LIGO Document Control Center (DCC) or go on line to the LIGO Public DCC at <https://dcc.ligo.org/> to access the DCC#.

### **3.0 Commercial Terms and Applicable LIGO Specifications:**

**Note: The documents listed below are invoked for this Statement of Work and comprise additional requirements which are integral to this Statement of Work.**

- [LIGO-C080185-v1](#) LIGO Commercial Items or Services Contract General Provisions
- [LIGO-Q0900001-v5](#) Advanced LIGO Supplier Quality Requirements
- [LIGO-Q1100003-v1](#) Acceptable Quality Level (AQL) for Inspection of LIGO Components
- [LIGO-E0900364-v8](#) Metal Components for use in the Advanced LIGO Vacuum System

### **4.0 Quality System:**

Referring to the above referenced LIGO Specification Q0900001, Suppliers should include a copy of their current ISO 9001, AS9100, or TS16949 certification in their bid package. Suppliers lacking current certification should send a copy of their Quality Manual with their bid package.

### **5.0 Parts/Assemblies to be manufactured, Quantity Required, and Inspection requirements:**

Note: refer to Section 8.0 for delivery schedule and location

This SOW is for the fabrication of 5 unique parts detailed in the drawing included in this package. These parts will be used in Advanced LIGO as part of the BSC ISI. Please note that both fabrication and quality control reports are requested as part of this SOW.

The drawings cited in this SOW are only partially dimensioned. In addition to the drawings, the contractor will be provided with CAD solid models of the parts (SolidWorks Professional 2012)

<i>DCC#</i>	<i>Description</i>
<a href="#">D1003123-v1</a>	Drawing: Trim Mass Mount Plate

- [D1003163-v1](#) Drawing: Trim Mass, 10 Kg
- [D1003164-v1](#) Drawing: Trim Mass, 5 Kg
- [D1003167-v1](#) Drawing: Trim Mass, .5 Kg
- [D1003168-v1](#) Drawing: Trim Mass, .25 Kg

## 6.0 Quantity Required:

part number	description	total quantity =	quantity for LHO	+	quantity for LLO	AQL number (Inspection Frequency)
D1003123-v1	Trim Mass Mount Plate	69	46		23	1.0
D1003163-v1	Trim Mass 10 kg	69	46		23	1.0
D1003164-v1	Trim Mass 5 kg	69	46		23	1.0
D1003167-v1	Trim Mass .5 kg	228	152		76	1.0
D1003168-v1	Trim Mass .25 kg	246	164		82	1.0

Note: refer to [LIGO-Q1100003-v1](#) for the AQL table.

## 7.0 Manufacturing:

### 7.1 Requirements:

Suppliers must refer to the LIGO Specifications referenced in Section 3 for additional, and in some cases, non-industry standard requirements.

### 7.2 Sub-Contracted Work:

- LIGO expects that at least 2/3 (by dollar value) of the contracted work be performed by the Supplier named on the Purchase Order. The Supplier shall be responsible for all sub-contracted work.

### 7.3 Precedence:

The drawings typically represent the finished part as needed for use in service. There may be requirements on the drawing (such as coatings) which are specifically defined as not the responsibility of the supplier in this SOW. Suppliers should always contact a LIGO representative to resolve any discrepancies uncertainties in the documentation or instructions.

## 8.0 End Item Data Package:

Before delivery of the parts, the Supplier shall provide the following data, as a minimum:

- Any as-built modifications (with approval of the LIGO Contracting Officer) as mark-ups to the drawings
- Material certifications
- Heat Treat and/or Stress Relief certifications, if applicable
- Electro-polish certifications, if applicable
- Pickle/Passivation certifications, if applicable

- Inspection reports of all dimensional features for the number of parts specified per the AQL number and referenced in the AQL table [LIGO-Q1100003-v1](#) and any other inspection requirements detailed in Section 5 of this SOW
- Certificate of compliance for each part number stating conformance to contract and drawing requirements

## 9.0 Delivery Requirements:

### 9.1 Shipping Containers and Packaging:

The contractor is responsible for providing shipping containers and transportation which protects these parts from damage from the transportation environment (weather, handling, accidents, etc.). Mating edges of parts should be especially protected from damage during shipping.

### 9.2 Shipping Destination(s):

The deliveries are FOB at these destinations, i.e. the Supplier has the responsibility for shipping title and control of goods until they are delivered and the transportation has been completed. The contractor selects the carrier and is responsible for the risk of transportation and for filing claims for loss or damage.

These items will be shipped to:

#### LIGO Livingston Observatory (LLO)

Attn:  
19100 LIGO Lane  
Livingston, LA 70754  
Attn : Adrien Le Roux

#### LIGO Hanford Observatory (LHO)

Attn:  
127124 North Route 10  
Richland, WA 99354  
Attn.: Mitchell Robinson

### 9.3 Delivery Schedule:

Delivery of parts can be in shipments of partial quantity of each part by the following schedule:

Quantity for LLO 6 weeks ARO

Quantity for LHO 8 weeks ARO

The deliveries are FOB at these destinations, i.e. the contractor has responsibility for shipping title and control of goods until they are delivered and the transportation has been completed. The contractor selects the carrier and is responsible for the risk of transportation and for filing claims for loss or damage.