



**Statement of Work
 Catalog Parts Internal to the Seismometer Vacuum Pods
 for Advanced LIGO BSC-ISI**

The following documents are incorporated into and made a part this purchase order. Click on the following LIGO Document Control Center (DCC) links to access these documents or go on line to the LIGO Public DCC at <https://dcc.ligo.org/> to access the DCC#.

1.0 Terms:

<u>DCC #</u>	<u>Description</u>
C080185-v1	Laser Interferometer Gravitational Wave Observatory (LIGO) Commercial Items or Services Contract General Provisions California Institute of Technology “Institute”, LIGO Rev 11/12/08
F0810001-v4	Technical Direction Memorandum.

2.0 Quality Control:

<u>DCC #</u>	<u>Description</u>
Q0900001-v4	Advanced LIGO Supplier Quality Requirements, dated 4/15/09, describes following contractor/supplier QA/QC actions for this procurement:
<input type="checkbox"/> 3.1 Pre-Award Inspection	<input type="checkbox"/> 3.9 Discrepant Material Storage
<input type="checkbox"/> 3.2 Supplier In Process Quality Control	<input checked="" type="checkbox"/> 3.10 Quality Records
<input type="checkbox"/> 3.3 In Process Inspection	<input type="checkbox"/> 3.11 Drawing and Specification Change Control
<input type="checkbox"/> 3.4 Pre-Ship Inspection	<input type="checkbox"/> 3.12 Welding Certification
<input checked="" type="checkbox"/> 3.5 Receiving Inspection	<input checked="" type="checkbox"/> 3.13 End Item Data Package (including Certifications of Compliance)
<input type="checkbox"/> 3.6 Discrepant Material	<input type="checkbox"/> 4.1 Design Verification
<input type="checkbox"/> 3.7 Material Review Action	<input type="checkbox"/> 4.2 Raw Material Procurement
<input type="checkbox"/> 3.8 Material Review Actions at Contractor	<input checked="" type="checkbox"/> 4.3 Traceability of Materials
	<input type="checkbox"/> 4.4 Calibration Program
	<input type="checkbox"/> 4.5 Critical Interface
	<input checked="" type="checkbox"/> 4.6 Cleanliness
	<input checked="" type="checkbox"/> 4.7 Packaging
	<input type="checkbox"/> 4.8 Storage
	<input checked="" type="checkbox"/> 4.9 Transport
	<input type="checkbox"/> 4.10 Customs

For the above list the Supplier shall: 1) Identify the corresponding sections/paragraphs in their existing QA/QC system 2) meet or exceed the design requirements contained in the attached engineering documents for each area called out.

3.0 End Item Data Package:

At the time of delivery of the parts, the Supplier shall also provide the following data, as a minimum:

- o Dimensional & QC inspection reports—this shall include a report showing that parts have been inspected and fall within specified tolerances.
- o Certification that each of the electrical feedthroughs have been helium leak tested to assure that the leak rate is less than 10⁻⁹ torr-liter/sec.

4.0 Scope:

This RFQ is for parts used in Vacuum Pods in the Advanced LIGO BSC ISI.

5.0 Parts Required:

Parts are referenced below by manufacturer for the sake of description. Equivalent items by other manufacturers will also be considered.

CF Flange 2-3/4 Nominal OD copper Gasket like Nor-Cal G-275 or equivalent	total quantity: 192
UHV compatible 9pin D-Type Feedthrough on a 2.75" CF Flange, with Beryllium Copper pins and a dielectric with CTE matched to the pins --With Certification that each of the feedthroughs have been tested to assure that the helium leak rate is less than 10 ⁻⁹ torr-liter/sec	total quantity: 192
CF Flange 10 inch nominal od copper gasket like Nor-Cal G-1000 or equivalent	total quantity: 96
CF Flange 6" nominal OD copper Gasket like Nor-Cal G-600 or equivalent	total quantity: 96
CF Flange copper gasket 4.5" Nominal OD like Nor-Cal G-450 or equivalent	total quantity: 48
CF Flange copper gasket 12" nominal OD like Nor-Cal G-1200 or equivalent	total quantity: 48
25 pin D-Type Feedthrough for a 4.5" CF Flange, with Beryllium Copper pins and a dielectric with CTE matched to the pins --With Certification that each of the feedthroughs have been tested to assure that the helium leak rate is less than 10 ⁻⁹ torr-liter/sec	total quantity: 48

6.0 Delivery Requirements:

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.

Shipping Location:

These items will be shipped to:

LIGO Livingston Observatory (LLO)
Attn: Joe Hanson and Tom Gentry
19100 LIGO Lane
Livingston, LA 70754

Shipping Containers:

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

7.0 Delivery Schedule:

The requested delivery for these parts is 1/3 quantity of each item on the following three dates:

May 10, 2010 1/3 quantity of each of the seven (7) unique parts

May 31, 2010 1/3 quantity of each of the seven (7) unique parts

June 14, 2010 1/3 quantity of each of the seven (7) unique parts

		ship to LLO by 5/10/2010	ship to LLO by 5/31/2010	ship to LLO by 6/14/2010
CF Flange 2-3/4 Nominal OD copper Gasket like Nor-Cal G-275 or equivalent	total quantity: 192	64	64	64
UHV compatible 9pin D-Type Feedthrough on a 2.75" CF Flange, with Beryllium Copper pins and a dielectric with CTE matched to the pins --With Certification that each of the feedthroughs have been tested to assure that the helium leak rate is less than 10 ⁻⁹ torr-liter/sec	total quantity: 192	64	64	64
CF Flange 10 inch nominal od copper gasket like Nor-Cal G-1000 or equivalent	total quantity: 96	32	32	32
CF Flange 6" nominal OD copper Gasket like Nor-Cal G-600 or equivalent	total quantity: 96	32	32	32
CF Flange copper gasket 4.5" Nominal OD like Nor-Cal G-450 or equivalent	total quantity: 48	16	16	16
CF Flange copper gasket 12" nominal OD like Nor-Cal G-1200 or equivalent	total quantity: 48	16	16	16
UHV compatible 25 pin D-Type Feedthrough for a 4.5" CF Flange, with Beryllium Copper pins and a dielectric with CTE matched to the pins --With Certification that each of the feedthroughs have been tested to assure that the helium leak rate is less than 10 ⁻⁹ torr-liter/sec	total quantity: 48	16	16	16

If the bidding vendor cannot meet this delivery requirement, an alternate plan submitted by the bidding vendor will be considered as part of the bid evaluation.