



LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

LIGO Laboratory / LIGO Scientific Collaboration

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LIGO

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*ISC Electronics Racks and Cabling: Acceptance
Documentation*

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1 Requirements documentation

This acceptance package covers the ISC electronics racks and cabling design. Note that it does not include the modules in the racks, as those have been separately reviewed.

Requirements: The only document that is applicable here is [LIGO-T060123](#), *Standard LIGO Electrical Interfaces*.

2 Design overview and detailed design documentation

Design documentation is in the aLIGO DCC tree, starting at:

[LIGO-E1200173](#): aLIGO, ISC, Electronics, Physical Layout

[LIGO-E1200174](#): aLIGO, ISC, Electronics, Wiring & Cabling Design

The first tree contains links to rack locations and rack design. The second tree contains links to wiring diagrams and cable pull tables.

Note: ISC table enclosure patch panels and RF distribution cabling have already been included in other acceptance packages. The EtherCAT system will be included in a separate acceptance package.

a) *Final Design Document (FDD)*: The layout drawing [LIGO-D1000653](#) was part of the FDR package, but note that it has been superseded by D1200666.

b) *Review reports*: FDR report, [T1000334-v1.pdf](#). Section 1.1 of the report contains actions regarding racks and cabling; these actions were carried out. A couple of additional comments are found at the top of p10 of the report – these were addressed in the design.

c) *Supporting design documents: models, analyses, specifications, etc.*

All in the DCC tree.

d) *Drawings: cite the top level assembly drawing for each major assembly or subsystem.*

The file card [LIGO-E1400180](#) contains links to each of the rack drawings.

e) *Bill(s) of Materials (BOM): cite any collected BOMs. If the BOMs are only to be found on the Assembly and Sub-Assembly drawing sheets, then state so.*

The closest things to a BOM for this package are probably the cable pull tables, for example [LIGO-E1200408](#).

f) *Interface control: cite any documents (such as RODAs) with interface definition/control and/or cite the relevant sections of the DRD and FDD.*

g) *Software: cite any software design description documentation.*

No software.

h) *Design source data:*

- *Confirm that all mechanical design CAD models are in the SolidWorks/PDMWorks vault, or explain what is not and why.*

- *Confirm that all electronics design CAD models (schematics and PWB layouts) are backed up*

and available on LIGO Lab archives, or explain what is not and why.

Source files are included in the DCC file cards (e.g., Altium project files for the cable layout drawings).

3 Materials and fabrication specification

Any special materials, or treatment of materials including preparation for in-vacuum use; this may be integrated into the Design documentation.

No special materials.

4 Parts and in-process spares inventoried

Racks and in-air cabling are not kept in ICS.

5 Assembly procedures

None.

6 Installation procedures

The cable pull list documents are used for installing the cabling. Racks are loaded up just following the rack drawings.

7 Test documents

None.

8 User interface software

None.

9 Operation Manual

None.

10 Safety

Safety documentation must be in the DCC for all phases of the subsystem development, including any needed for normal use or foreseen maintenance/repair scenarios.

None.