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| Date: | 29 June 2012  | Refer to: | D1200073-v2 |
| Title: | aLIGO Top Level Assembly Document for Optical Levers |

# Introduction

In lieu of an actual drawing, this is the Bill of Materials for the Optical Levers for the aLIGO Interferometers.

# Related Drawings

Floor Occupancy Drawings:

* [G1000740](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=G1000740&version=): Floor Occupancy, Optical Levers, LHO Corner Station
* [G1000719](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=G1000719&version=): Floor Occupancy, OpLev & PCal, LHO X-End Station
* [G1000739](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=G1000739&version=): Floor Occupancy, OpLev & PCal, LHO Y-End Station
* [G1000702](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=G1000702&version=): Floor Occupancy, OpLev & PCal, LLO Y-End Station
* [G1000700](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=G1000700&version=): Floor Occupancy, Optical Levers, LLO Corner Station
* [G1000701](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=G1000701&version=): Floor Occupancy, OpLev & PCal, LLO X-End Station

Interface Control Drawing

* [E1100221](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?docid=39552): ICD for Optical Levers

# Optical Lever Assemblies

1. **Hanford 1**
	1. Input Test Mass, X-arm

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| Item | Number | Description | Quan |
| 1 | [D1001339](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001339&version=) | Transmitter Assy (33" dwarf) | 1 |
| 2 | [D1001325](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001325&version=) | Receiver Assy (LH Leaner) | 1 |

* 1. Input Test Mass, Y-arm

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| Item | Number | Description | Quan |
| 1 | [D1001339](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001339&version=) | Transmitter Assy (33" dwarf) | 1 |
| 2 | [D1001330](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001330&version=) | Receiver Assy (RH Leaner) | 1 |

* 1. End Test Mass, X-arm

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| Item | Number | Description | Quan |
| 1 | [D1001339](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001339&version=) | Transmitter Assy (33" dwarf) | 1 |
| 2 | [D1001330](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001330&version=) | Receiver Assy (RH Leaner) | 1 |

* 1. End Test Mass, Y-arm

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| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001339](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001339&version=) | Transmitter Assy (33" dwarf) | 1 |
| 2 | [D1001325](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001325&version=) | Receiver Assy (LH Leaner) | 1 |

* 1. Beam Splitter

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| Item | Number | Description | Quan |
| 1 | [D1200640](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1200640&version=) | Mounting Assy (shelf & adapter plate) | 1 |
| 2 | [D1100625](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1100625&version=) | Periscope Assy | 1 |

* 1. Power Recycling Mirror3

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| Item | Number | Description | Quan |
| 1 | [D1001334](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001334&version=) | Transmitter Assy (24" dwarf) | 1 |
| 2 | [D1200072](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1200072&version=) | Receiver Assy (LH Giraffe) | 1 |

* 1. Signal Recycling Mirror 3

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| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001334](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001334&version=) | Transmitter Assy (24" dwarf) | 1 |
| 2 | [D1200071](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1200071&version=) | Receiver Assy (RH Giraffe) | 1 |

* 1. Ham 2 Table Mirror

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| Item | Number | Description | Quan |
| 1 | [D1001851](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1001851&version=) | Transceiver Assy (31" dwarf) | 1 |
| 2 | [D1101392](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1101392&version=) | HAM Table Mirror Assy  | 1 |

* 1. Ham 3 Table Mirror

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| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001851](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1001851&version=) | Transceiver Assy (31" dwarf) | 1 |
| 2 | [D1101392](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1101392&version=) | HAM Table Mirror Assy  | 1 |

* 1. Ham 4 Table Mirror

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| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001851](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1001851&version=) | Transceiver Assy (31" dwarf) | 1 |
| 2 | [D1101392](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1101392&version=) | HAM Table Mirror Assy  | 1 |

* 1. Ham 5 Table Mirror

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| Item | Number | Description | Quan |
| 1 | [D1001851](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1001851&version=) | Transceiver Assy (31" dwarf) | 1 |
| 2 | [D1101392](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1101392&version=) | HAM Table Mirror Assy  | 1 |

* 1. System Software
1. **Hanford 2**
	1. Input Test Mass, X-arm

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| Item | Number | Description | Quan |
| 1 | [D1001339](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001339&version=) | Transmitter Assy (33" dwarf) | 1 |
| 2 | [D1001325](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001325&version=) | Receiver Assy (RH Leaner) | 1 |

* 1. Input Test Mass, Y-arm

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| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001339](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001339&version=) | Transmitter Assy (33" dwarf) | 1 |
| 2 | [D1001330](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001330&version=) | Receiver Assy (RH Leaner) | 1 |

* 1. End Test Mass, X-arm

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| Item | Number | Description | Quan |
| 1 | [D1001339](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001339&version=) | Transmitter Assy (33" dwarf) | 1 |
| 2 | [D1001330](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001330&version=) | Receiver Assy (RH Leaner) | 1 |

* 1. End Test Mass, Y-arm

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| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001339](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001339&version=) | Transmitter Assy (33" dwarf) | 1 |
| 2 | [D1001325](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001325&version=) | Receiver Assy (LH Leaner) | 1 |

* 1. Beam Splitter

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| Item | Number | Description | Quan |
| 1 | [D1200640](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1200640&version=) | Mounting Assy (shelf & adapter plate) | 1 |
| 2 | [D1100625](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1100625&version=) | Periscope Assy (-1 version) | 1 |

* 1. Fold Mirror X-arm

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| Item | Number | Description | Quan |
| 1 | [D1200640](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1200640&version=) | Mounting Assy (shelf & adapter plate) | 1 |
| 2 | [D1100625](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1100625&version=) | Periscope Assy (-2 version) | 1 |

* 1. Fold Mirror Y-arm

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| Item | Number | Description | Quan |
| 1 | [D1200640](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1200640&version=) | Mounting Assy (shelf & adapter plate) | 1 |
| 2 | [D1100625](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1100625&version=) | Periscope Assy (-2 version) | 1 |

* 1. Power Recycling Mirror3

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| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001334](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001334&version=) | Transmitter Assy (24" dwarf) | 1 |
| 2 | [D1200072](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1200072&version=) | Receiver Assy (LH Giraffe) | 1 |

* 1. Signal Recycling Mirror 3

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| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001334](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001334&version=) | Transmitter Assy (24" dwarf) | 1 |
| 2 | [D1200071](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1200071&version=) | Receiver Assy (LH Giraffe) | 1 |

* 1. Ham 8 Table Mirror

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| Item | Number | Description | Quan |
| 1 | [D1001851](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1001851&version=) | Transceiver Assy (31" dwarf) | 1 |
| 2 | [D1101392](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1101392&version=) | HAM Table Mirror Assy  | 1 |

* 1. Ham 9Table Mirror

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| Item | Number | Description | Quan |
| 1 | [D1001851](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1001851&version=) | Transceiver Assy (31" dwarf) | 1 |
| 2 | [D1101392](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1101392&version=) | HAM Table Mirror Assy  | 1 |

* 1. Ham 10 Table Mirror

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| Item | Number | Description | Quan |
| 1 | [D1001851](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1001851&version=) | Transceiver Assy (31" dwarf) | 1 |
| 2 | [D1101392](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1101392&version=) | HAM Table Mirror Assy  | 1 |

* 1. Ham 11Table Mirror

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| Item | Number | Description | Quan |
| 1 | [D1001851](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1001851&version=) | Transceiver Assy (31" dwarf) | 1 |
| 2 | [D1101392](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1101392&version=) | HAM Table Mirror Assy  | 1 |

* 1. System Software
1. **Livingston 1**
	1. Input Test Mass, X-arm

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| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001339](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001339&version=) | Transmitter Assy (33" dwarf) | 1 |
| 2 | [D1001325](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001325&version=) | Receiver Assy (LH Leaner) | 1 |

* 1. Input Test Mass, Y-arm

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| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001339](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001339&version=) | Transmitter Assy (33" dwarf) | 1 |
| 2 | [D1001330](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001330&version=) | Receiver Assy (RH Leaner) | 1 |

* 1. End Test Mass, X-arm

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| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001339](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001339&version=) | Transmitter Assy (33" dwarf) | 1 |
| 2 | [D1001330](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001330&version=) | Receiver Assy (RH Leaner) | 1 |

* 1. End Test Mass, Y-arm

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| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001339](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001339&version=) | Transmitter Assy (33" dwarf) | 1 |
| 2 | [D1001325](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001325&version=) | Receiver Assy (LH Leaner) | 1 |

* 1. Beam Splitter

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1100302](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1100302&version=) | Mounting Assy (shelf & adapter plate) | 1 |
| 2 | [D1100625](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1100625&version=) | Periscope Assy | 1 |

* 1. Power Recycling Mirror3

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001334](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001334&version=) | Transmitter Assy (24" dwarf) | 1 |
| 2 | [D1200072](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1200072&version=) | Receiver Assy (LH Giraffe) | 1 |

* 1. Signal Recycling Mirror 3

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001334](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=d1001334&version=) | Transmitter Assy (24" dwarf) | 1 |
| 2 | [D1200071](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1200071&version=) | Receiver Assy (RH Giraffe) | 1 |

* 1. Ham 2 Table Mirror

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001851](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1001851&version=) | Transceiver Assy (31" dwarf) | 1 |
| 2 | [D1101392](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1101392&version=) | HAM Table Mirror Assy  | 1 |

* 1. Ham 3 Table Mirror

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001851](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1001851&version=) | Transceiver Assy (31" dwarf) | 1 |
| 2 | [D1101392](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1101392&version=) | HAM Table Mirror Assy  | 1 |

* 1. Ham 4 Table Mirror

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001851](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1001851&version=) | Transceiver Assy (31" dwarf) | 1 |
| 2 | [D1101392](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1101392&version=) | HAM Table Mirror Assy  | 1 |

* 1. Ham 5 Table Mirror

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Number | Description | Quan |
| 1 | [D1001851](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1001851&version=) | Transceiver Assy (31" dwarf) | 1 |
| 2 | [D1101392](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?.submit=Number&docid=D1101392&version=) | HAM Table Mirror Assy  | 1 |

* 1. System Software