

# Advanced LIGO Engineering Change Request (ECR)

**ECR: HAM2 viewports**

**DCC No: E1800131-v1**

**Date: 5/2/2018**

**Requester: Daniel Sigg**

**Impacted Subsystem(s):**

**VAC/Aux optics**

**Description of Proposed Change(s):**

- Add inspection viewport at A1F2 of HAM5
- Add inspection viewport at D8 of HAM5 (requires a zero-length reducer)

Viewports are of type VP800/450009.

**Reason for Change(s):** HAM5 currently employs 3 viewports:

- A1F3 for the illuminator
- A2F3 for inspection (side view of OFI)
- A2F4 for SRM CO2 laser heater (ZnSe)

We would like to add the top D8 viewport so we can look down on the OFI and we would like to add the A1F2 viewport to have a look at the other side of the OFI as well as SR3 and SRM.

**Estimated Cost:** \$2000, for zero-length reducer (12" to 10")

**Schedule Impact Estimate:** small

**Nature of Change (check all that apply):**

- Hardware Safety
- Correct Hardware
- Correct Documentation

- Improve Hardware/Software
- Improve/Clarify Documentation
- Change Interface
- Change Requirement

**Importance:**

- Desirable for ease of use, maintenance, safety
- Desirable for improved performance, reliability
- Essential for performance, reliability
- Essential for function
- Essential for hardware safety

**Urgency:**

- No urgency
- Desirable by date/event:
- Essential by date/event:
- Immediately (ASAP)

**Impacted Hardware (select all that apply):**

- Repair/Modify. List part & SNs: \_\_\_\_\_
- Scrap & Replace. List part & SNs: \_\_\_\_\_
- Installed units? List IFO, part & SNs: \_\_\_\_\_
- Future units to be built

**Impacted Documentation (list all dwgs, design reports, test reports, specifications, etc.):**

[T1200243](#), WHAM5 Viewports As-Installed  
E1200445, Survey of installed viewports at LLO  
T1200220, LHO H1 Viewports-As Installed  
D0900457, VE HAM5-L1, Vacuum Equipment Assembly  
D0901130, VE HAM5-H1, Vacuum Equipment Assembly

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## Disposition of the proposed change(s):

The disposition of this proposed engineering change request is to be completed by Systems Engineering and indicated in the “Notes and Changes” metadata field in the DCC entry for this ECR. The typical dispositions are as follows:

- **Additional Information Required:** in which case the additional information requested is defined. The ECR requester then re-submits the ECR with the new information using the same DCC number for the ECR but with the next version number.
- **Rejected:** in which case the reason(s) for the rejection are to be given
- **Approved**
- **Approved with Caveat(s):** in which case the caveat(s) are listed
- **TRB:** the ECR is referred to an ad-hoc Technical Review Board for further evaluation and recommendation. It is the System Engineer’s (or designee’s) responsibility to organize the TRB. The System Engineer (or designee) then makes a technical decision based on the TRB’s recommendation. Links to the TRB’s documentation (charge, memos, final report, etc.) are to be added to the “Related Documents” field for this ECR.
- **CCB:** a change request for approval of additional funds or schedule impact is to be submitted to the Configuration Control Board. Links to the CCB’s documentation (CR, etc.) are to be added to the “Related Documents” field for this ECR.

## Concurrence by Project Management:

Acknowledgement/acceptance/approval of the disposition is to be indicated by the electronic “signature” feature in the DCC entry for this ECR, by one the following personnel:

- Systems Scientist
- Systems Engineer
- Deputy Systems Engineer