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Signal Recycling Cavity Baffles Production Plan

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Michael Smith, Lisa C. Austin

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of the LIGO Laboratory.

**California Institute of Technology**  
**LIGO Project – MS 18-34**  
**1200 E. California Blvd.**  
**Pasadena, CA 91125**  
Phone (626) 395-2129  
Fax (626) 304-9834  
E-mail: info@ligo.caltech.edu

**Massachusetts Institute of Technology**  
**LIGO Project – NW22-295**  
**185 Albany St**  
**Cambridge, MA 02139**  
Phone (617) 253-4824  
Fax (617) 253-7014  
E-mail: info@ligo.mit.edu

**LIGO Hanford Observatory**  
**P.O. Box 159**  
**Richland WA 99352**  
Phone 509-372-8106  
Fax 509-372-8137

**LIGO Livingston Observatory**  
**P.O. Box 940**  
**Livingston, LA 70754**  
Phone 225-686-3100  
Fax 225-686-7189

<http://www.ligo.caltech.edu/>



**Abstract**

This document describes the plan for acquisition of parts, components, and materials needed for fabrication of three (3) SR3 HR Baffles, three (3) SR3 AR Baffles, three (3) SR2 Scraper Baffles, nine (9) HAM Scraper Baffles, and three (3) SRM AR Baffles.

## 1 Introduction

This document describes the plan for acquisition of parts, components, and materials needed for fabrication of three (3) SR3 HR Baffles, three (3) SR3 AR Baffles, three (3) SR2 Scraper Baffles, nine (9) HAM Scraper Baffles, and three (3) SRM AR Baffles.

### 1.1 Scope

The cost of the production plan is limited to the hardware acquisition costs of the Signal Recycling Cavity Baffles. It does not include labor for procurement, assembly, pre-alignment, test, and installation.

## 2 Production Plan

### 2.1 Fabrication

The Signal Recycling Cavity Baffle subassemblies will be manufactured by selected machine shops.

### 2.2 Assembly and Test

The Signal Recycling Cavity Baffle assemblies will be pre-assembled in a clean room and delivered assembled to the chamber. No testing is required.

The SR2 Scraper Baffle will have the Table Extension assembled to the HAM ISI, and then the SR2 Scraper will be attached to the Extension Table. No testing is required.

## 3 Baffle Cost

### 3.1 Baffle Estimated Unit Cost

SR3 HR Baffles	2431
SR3 AR Baffles	2431
SR2 Scraper Baffles	3140
SR2 Scraper Baffles Extension Table	????
HAM Scraper Baffles	2779
SRM AR Baffles	2431

### 3.2 Total Cost for all Signal Recycling Cavity Baffles

3 ea	SR3 HR Baffles	7293
3 ea	SR3 AR Baffles	7293
3 ea	SR2 Scraper Baffles	9420
3 ea	SR2 Scraper Baffles Extension Table	????
9 ea	HAM Scraper Baffles	25011
3 ea	SRM AR Baffles	7293

**Total Cost** **\$56,310**

### 3.3 Comparison with Cost Book

The 12/14/2011 AOS cost revision is detailed in the Advanced LIGO [ACR-110041 - AOS Budget Additions to SLC, TMS, IAS and Viewports \(M1100292\)](#).

Total Budget for Signal Recycling Cavity Baffles per ACR-110041	\$67,492
Current Estimated Cost of Signal Recycling Cavity Baffles, <b>less SR2 Scraper Baffle Extension Table</b>	<b>\$56,310</b>

Differences since ACR-110041:

- 1) HAM Scraper Baffle design change
- 2) HAM Scraper Baffle quantity change (was 6, is 9)
- 3) Elimination of HAM Flat Beam Dump
- 4) **Addition of SR2 Scraper Baffle Extension Table**
- 5) **Material and design changes due to FEA results**

Estimated Shipping Cost	<u>\$ 1,000</u>
Estimated Procurement Cost of all Baffles	<b>\$57,310</b>

## 4 Procurement Plan

April 2012	Signal Recycling Cavity Baffles	<b>\$56,310</b>
	Shipping	<u>\$ 1,000</u>
<b>TOTAL</b>		<b>\$57,310</b>

The cleaning of the baffle mirrored polished stainless steel parts will be performed in-house at CIT.

The oxidation bake is budgeted and expensed in groupings with other baffles as they become available for processing.