



*LIGO Laboratory / LIGO Scientific Collaboration*

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Arm Cavity Baffle Production Plan

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**Abstract**

This document describes the plan for acquisition of parts, components, and materials needed for fabrication ten (10) Arm Cavity Baffles.



## 1 Introduction

This document describes the plan for acquisition of parts, components, and materials needed for fabrication ten (10) Arm Cavity Baffles.

### 1.1 Scope

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

## 2 Production Plan

### 2.1 Fabrication

The Arm Cavity Baffle subassemblies consist of the following items: 1) Suspension assembly, 2) Baffle assembly, and 3) Photodetector assembly.

All mechanical subassemblies will be manufactured by selected machine shop.

The photodetectors are catalog items and will be purchased from appropriate vendors. Vent holes will be added to the photodetector housing by LIGO personnel.

The photodetector cabling will be manufactured by LIGO CDS.

### 2.2 Assembly and Test

All the optical components and mechanical components will be cleaned and baked, then assembled in a clean facility at the IFO sites.

Pre-alignment and testing of the Arm Cavity Baffle assemblies will be done in a clean facility at the sites.

## 3 Arm Cavity Baffle Unit Cost

ARM CAVITY BAFFLE-1 HOLE QPD	12998
ARM CAVITY BAFFLE-2 HOLE QPD	13843
ARM CAVITY BAFFLE-NO QPD	12153

### 3.1 Total Cost for all Arm Cavity Baffles

4 ea	ARM CAVITY BAFFLE-1 HOLE QPD	51994
4 ea	ARM CAVITY BAFFLE-2 HOLE QPD	55374
2 ea	ARM CAVITY BAFFLE-NO QPD	<u>24307</u>
Total Cost		<b>\$131,674</b>

### 3.2 Comparison with Cost Book

The 8/26/10 AOS cost revision is detailed in the Advanced LIGO [Change Request No. ACR-100016](#).

Arm Cavity Baffles (this includes the Baffle F ETM plus shipping)	<b>\$149,841</b>
Other Baffles and Beam Dumps	<u>\$445,263</u>
Total ACR-100016 AOS Budget & Schedule Revision 8/26/10	\$599,644

Estimated Procurement Cost of Arm Cavity Baffles	\$131,674
Estimated Procurement Cost of Baffle F ETM	\$ 18,707
Estimated Shipping Cost	<u>\$ 4,000</u>
Estimated Procurement Cost of all AC Baffles	<b>\$154,381</b>

### 4 Procurement Plan

March 2011	Arm Cavity Baffles	\$131,674
	Shipping	\$ 800
May 2011	Baffle F ETM	\$ 18,707
	Shipping	<u>\$ 3,200</u>
TOTAL		<b>\$154,381</b>