

# New Suspension for Mark II

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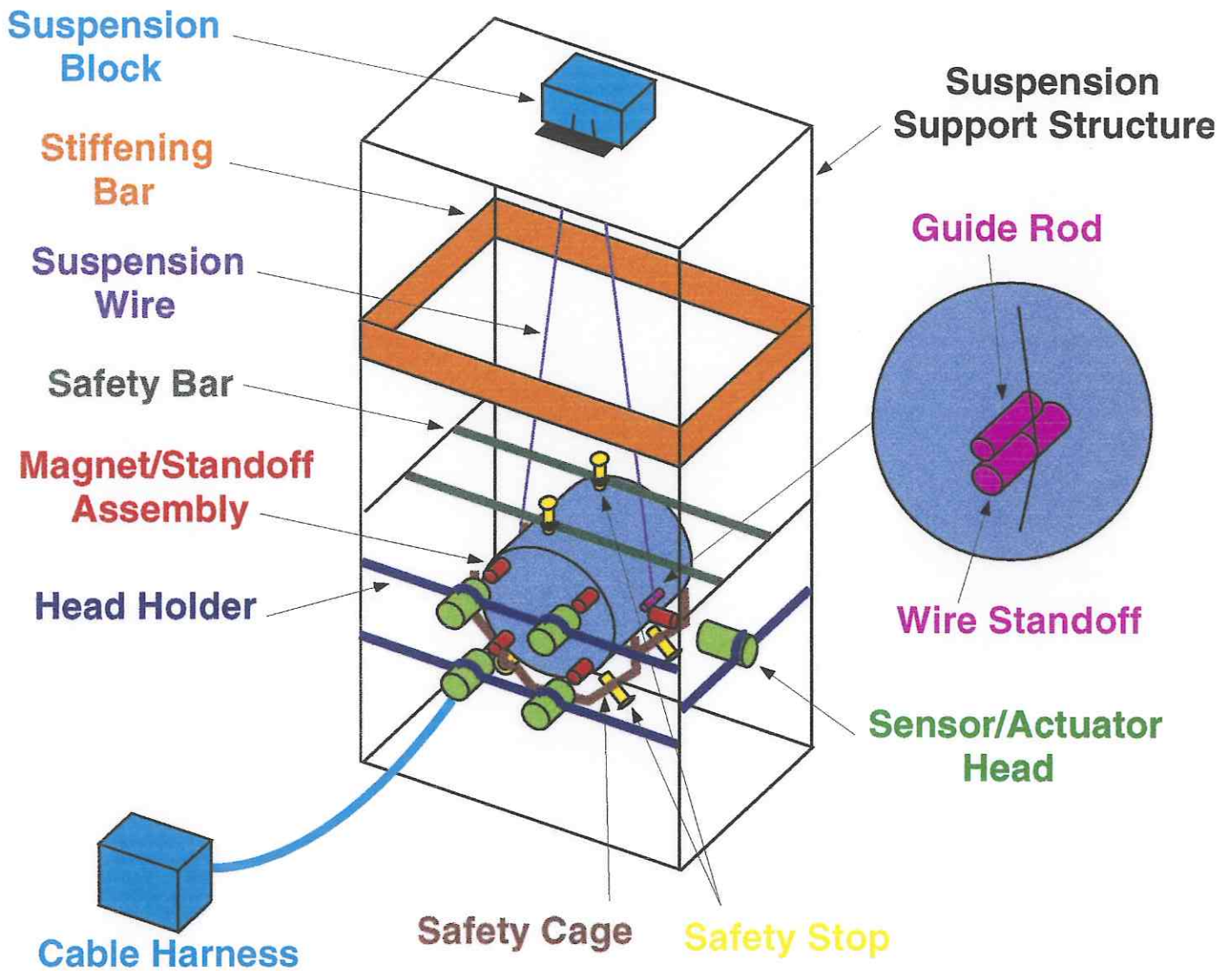
- Objectives
- Design
- Features
- Noise
- Implementation

# Objectives

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- Removal of control block
  - ›› Elimination of the 80 Hz and 109 Hz peaks
  - ›› Possible reduction of the existing 100 Hz - 200 Hz noise
- Improvement in reliability
- Fortification against earthquake
- Simplification in installation and alignment
- Further reduction of the control noise
- Test of the LIGO suspension design

# Design (Mechanical Part)

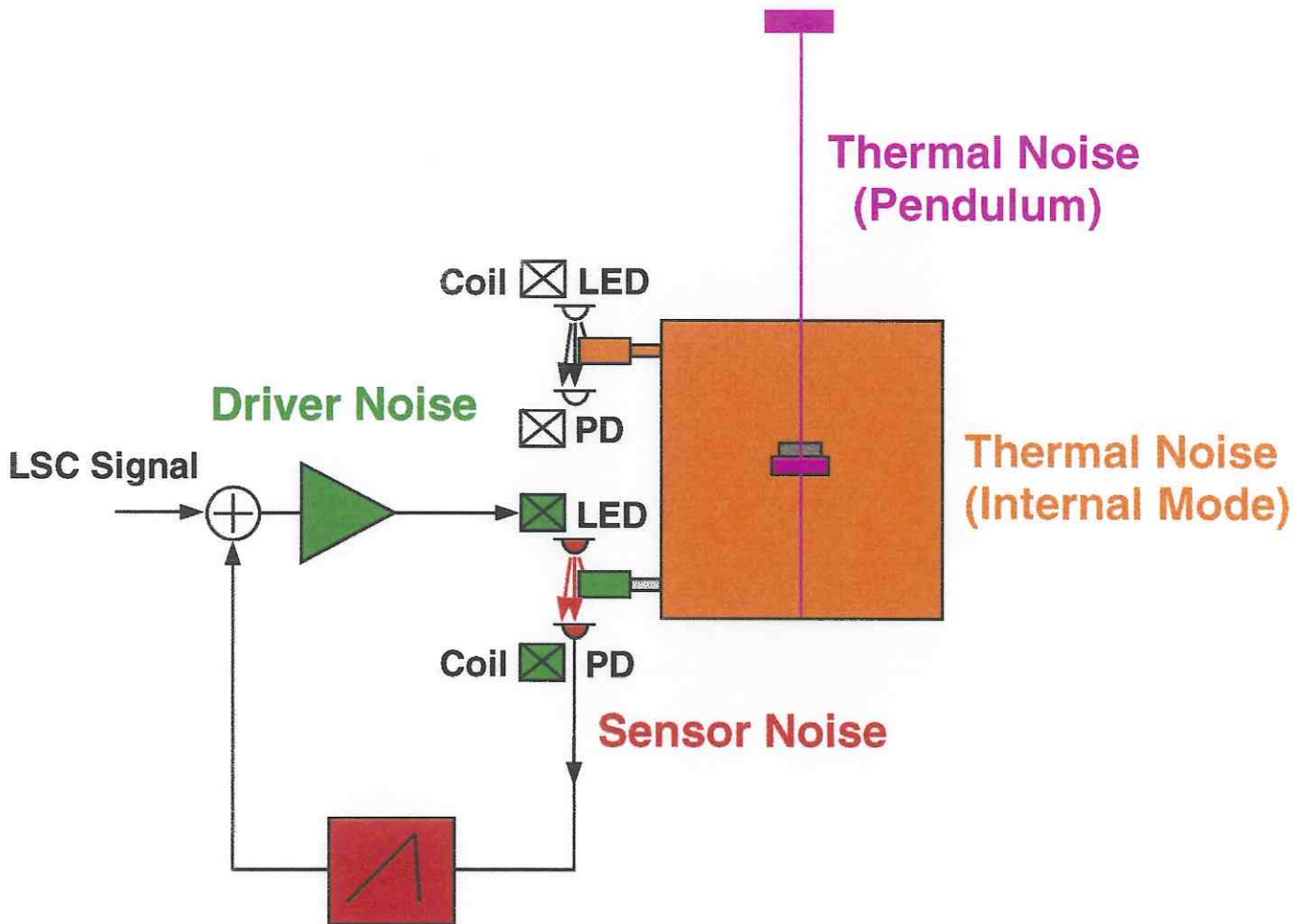


# Features

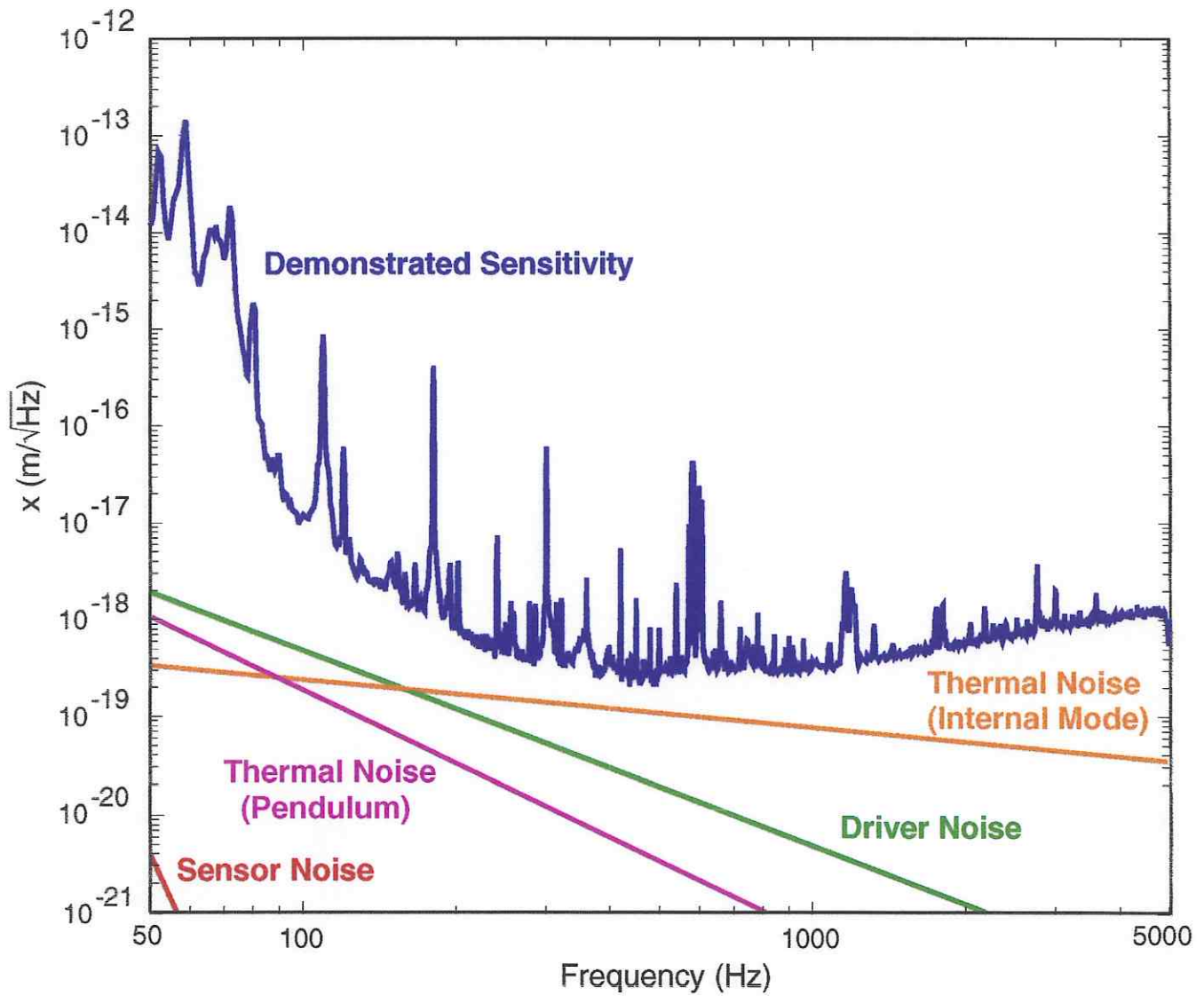
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- One-body modular type suspension assembly
- Single loop of wire
- No control block
- Grooved wire standoff & guide rod
- Edge sensor
- No vane
- No active stabilization of LED intensity
- No preamplifier in the vacuum
- Cradle type safety cage
- Easy access to safety cage screw
- Low noise
- Low eddy current damping
- High resonance frequency of the structure

# Noise Entries



# Noise Estimate



# Implementation

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- Design (- Aug. 95)
- Fabrication (Sep. 95 - Nov. 95)
- Test on bench (Nov. 95)
- Installation and characterization (Dec. 95 - Jan.96)
- Modification and design of the BS suspension (Feb. 96)
- Fabrication (Feb. 96 - Apr. 96)
- Test/preparation (May. 96)
- Installation (Jun. 96)