

## Projector Lamp Problem

### Problem 1

An FMEA is being done on a projector lamp, with a function "Provide reliable light for image transfer at a minimum of 1000 lumens for 2000 hours of operation." One possible failure mode is "lamp burns out prematurely." Identify one or two other possible failure modes. For the failure mode "lamp burns out prematurely," identify two possible causes. Try to include at least one underlying failure mechanism.

### Problem 2

Referencing the Projector Lamp Design FMEA, one of the failure modes is "low light output," with a cause "slow gas leak due to customer abuse during installation." The Recommended Action is "Modify lamp durability test #456 to include moderate customer abuse during installation process." What potential recommended actions are missing?

## Projector Lamp Solution

### Problem 1

An FMEA is being done on a projector lamp, with a function "Provide reliable light for image transfer at a minimum of 1000 lumens for 2000 hours of operation." One possible failure mode is "lamp burns out prematurely." Identify one or two other possible failure modes. For the failure mode "lamp burns out prematurely," identify two possible causes. Try to include at least one underlying failure mechanism.

**Answer:** Reference the Projector Lamp Design FMEA, "Excerpt from Projector Lamp Design FMEA." Compare answers to this FMEA excerpt.

### Problem 2

Referencing the Projector Lamp Design FMEA, one of the failure modes is "low light output," with a cause "slow gas leak due to customer abuse during installation." The Recommended Action is "Modify lamp durability test #456 to include moderate customer abuse during installation process." What potential recommended actions are missing?

**Answer:** The current recommended action is intended to address the high detection risk. Missing are recommended actions to address the high occurrence risk. With an RPN of 288 and Occurrence of 6, the FMEA team should take action to reduce the frequency of occurrence of the failure mode/cause, thus bringing down the overall risk to an acceptable level.