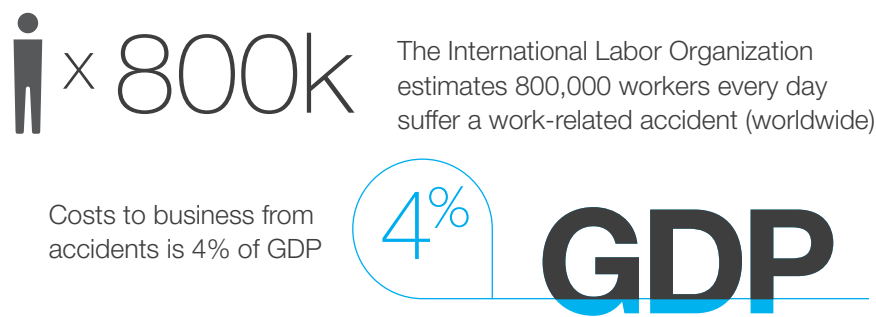


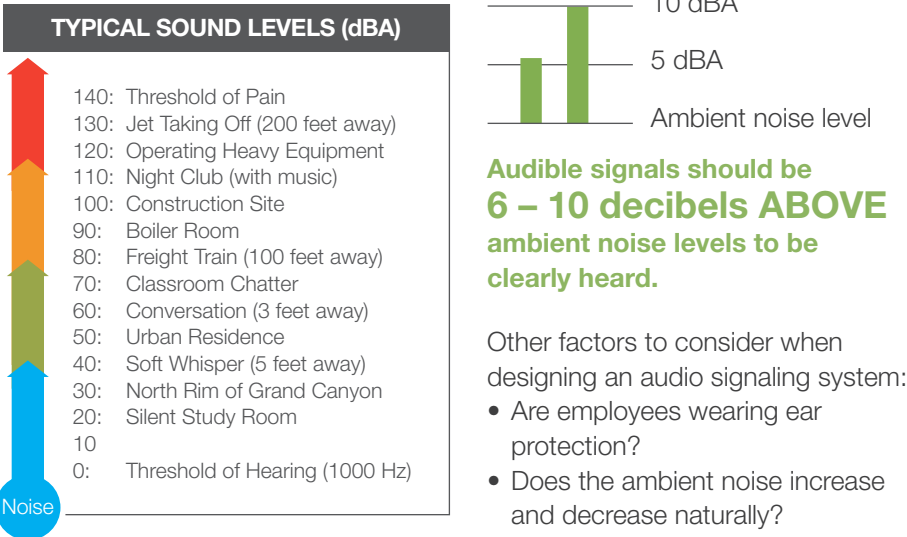
Signaling and Alarm Guide

FOR PLANT SAFETY

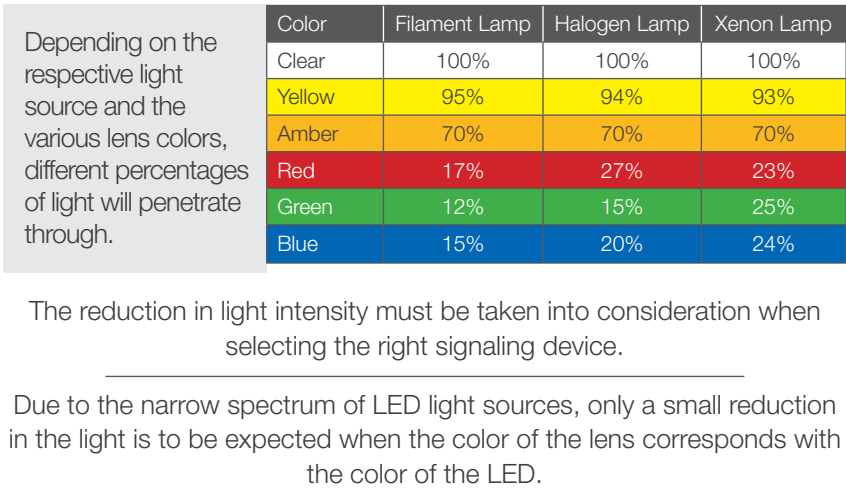
Safety Stats



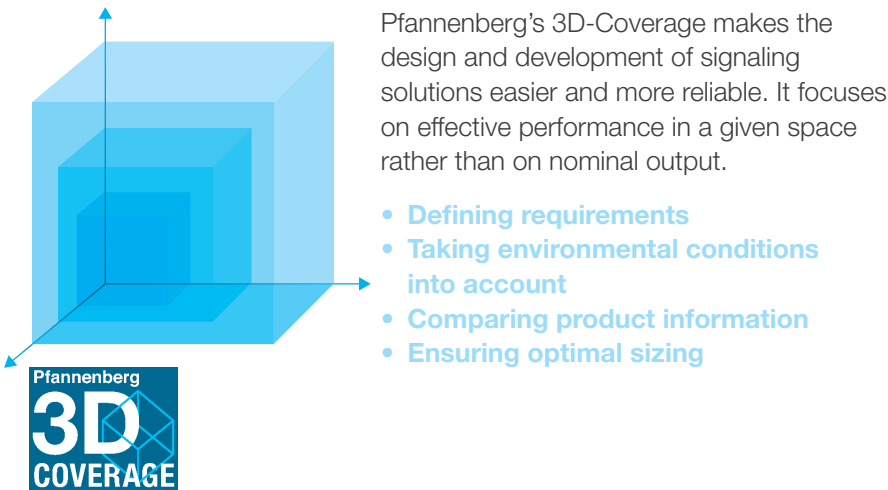
Audible and Visual Alarms



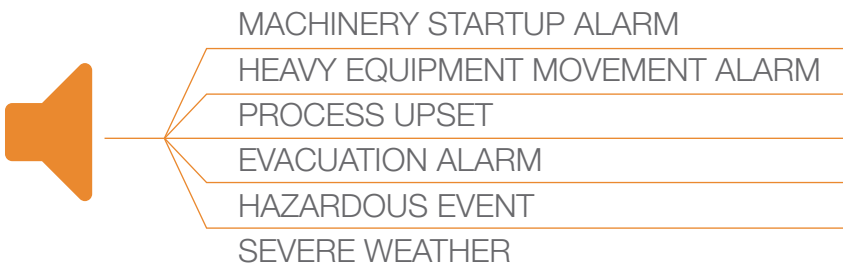
Light Intensity



3D Coverage NEW STANDARD



Typical Signal Applications



Signal Colors

The alarm color can indicate different situations.

| | |
|---|--|
| RED: EMERGENCY Message: Danger/Act immediately/ Urgent rescue or protection measure Example: Acute health risk/ Machine or process critical error/ Maximum tolerance exceeded | GREEN: NORMAL Message: Normal status/No danger/ Return to normal process Example: Process is running |
| YELLOW/AMBER: ABNORMAL Message: Attention required/ Act if necessary Example: Moving vehicle or machine/ Corrective action needed on a machine/ Health hazard | BLUE: SPECIFIED MEANING Message: Action/Protection/ Extraordinary attention/ Safety-relevant regulation Example: Toxic gas leak (ammonia) |

Alarm System Effectiveness

3 factors that compromise alarm system effectiveness:

- 1 Original manufacturer-specified audible alarms may not perform adequately in a given plant environment
- 2 Alarm "flood" and confusion (close proximity of multiple pieces of equipment)
- 3 Improper personnel training and/or poor alarm design; operators must be trained to know what the alarms mean

Planning a Signaling Solution

- Planning a signaling solution must factor in the following:
- ✓ Considering the environmental conditions is CRUCIAL
 - noise and light level, coverage area
 - ✓ Where are people situated?
 - ✓ What influences and risks are they exposed to?
 - ✓ What are the features of the building?



A Robust Signaling System



A robust signaling system has the following:

- Consistent signal characteristics throughout the plant
- Ability to easily add new signals based on changing conditions in the plant (e.g., new equipment)
- Stages and tones adapted to different events