Active vs Passive DPFs

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Active vs Passive DPFs

• What is a DPF?
• Where are DPFs used / required?
• Active vs Passive technology
• Market trends
• Summary
What is a DPF?

• Diesel particulate filter
  – Catches PM / soot
    • 85% + reduction
  – Burns off PM / regeneration
Why use DPFs?

• 95% Compliance – Federal, State and Local
• 5% Good corporate citizenry
• Desire to be green, Employee health and safety
• Aesthetics
Types of DPFs

- Passive
- Active
Passive DPF

- Elevated exhaust gas temp
  - Load banks
- “Pollute to control”
- Engine backpressure
- Maintain and clean
- Engine shut down / fire hazard
Active DPF

- Fuel burner
- Electrically self-regenerating
Active DPF

- Backpressure
  - Porosity
  - Continually monitored
- Independent of exhaust gas temp
- Automatic
- Low fuel penalty
- Low maintenance
- Flexibility in design
Active Regeneration Technology

Diesel Particulate Filters

- Passive
  - Oxidation Catalysts
  - Fuel Born Catalyst

- Passive
  - Active
    - Electrically Regenerated
      - On-Line (while engine is in operation, <1% penalty)
      - Off-Line (typically plugged in while engine is off)

- Active
  - Fuel Regenerated (3-6% Fuel penalty)

Rypos core technology
Market Trends

- EPA Tier 4
- Demand Response programs
- Awareness in design
- Health and Safety
- Title 5 sites
- Replacement of passive DPFs