



Emission Compliance with Confidence™



Retrofit Technologies For California Ports

Bob Towle,
Ironman Emission Consultant

*Faster Freight, Cleaner Air
Conference – Feb. 2007*



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California chooses...



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Emission Retrofit Focus



Leading Retrofit Installer



**Trusted Technology Partners
Claire, Donaldson, JM**



Ironman Emission Program

- Consultative Retrofit Strategy
- Emissions Rules & Technology Solutions
- Data Logging / Equipment Assessment
- Funding / Grant Assistance
- Backed by Industry Leaders
- Program Management
- Mobile Services





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Port Experience

Ports of Los Angeles, Long Beach,
Oakland, and San Diego



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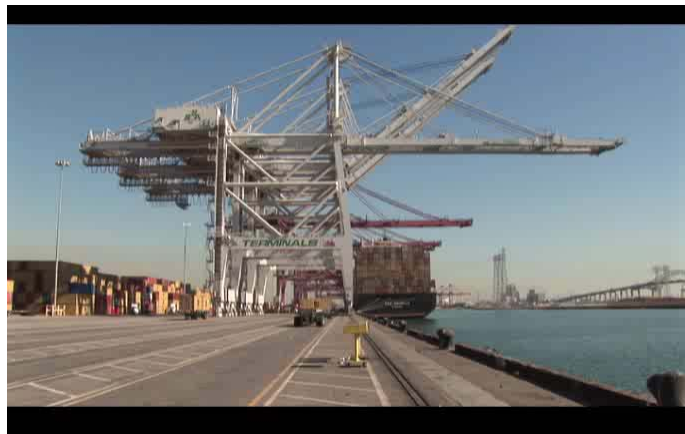


Proud partners of proactive
San Pedro Ports.

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SSA Terminals – Port of Long Beach

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Port Experience



Port Trucks

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Port Experience



RTG's

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Port Experience



Top / Side Picks

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Port Experience



Yard Hustlers

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BACT

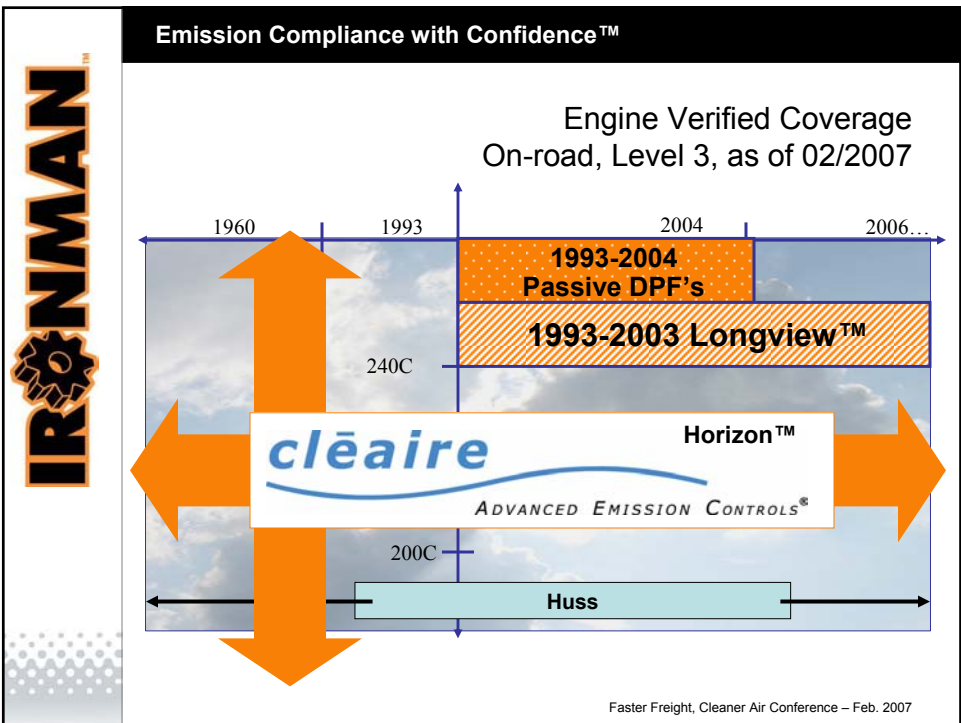
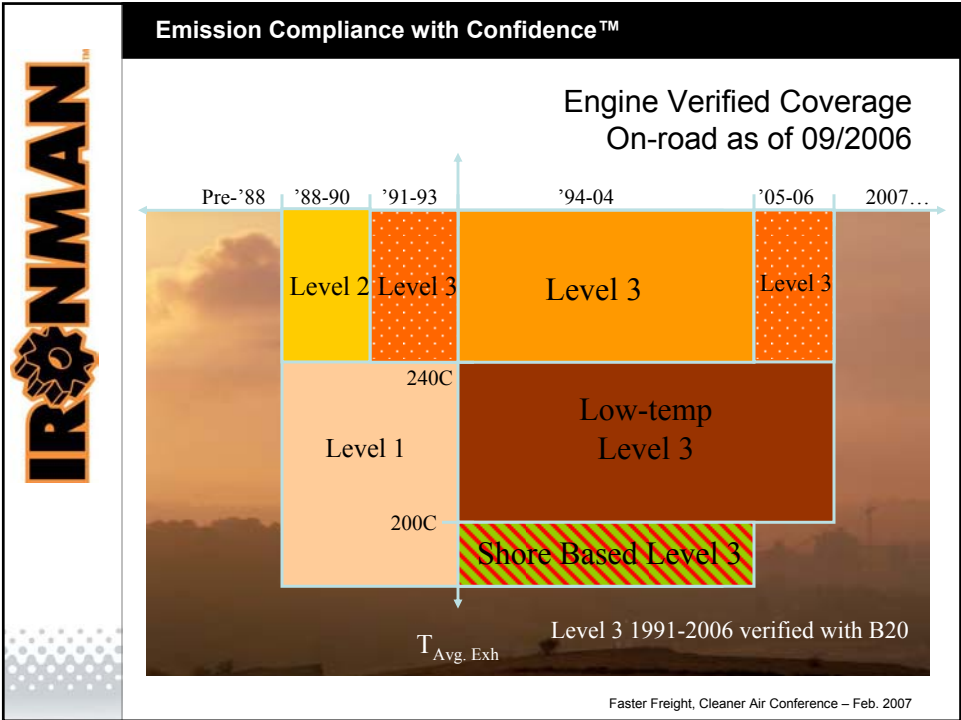
- Level 3 Applications

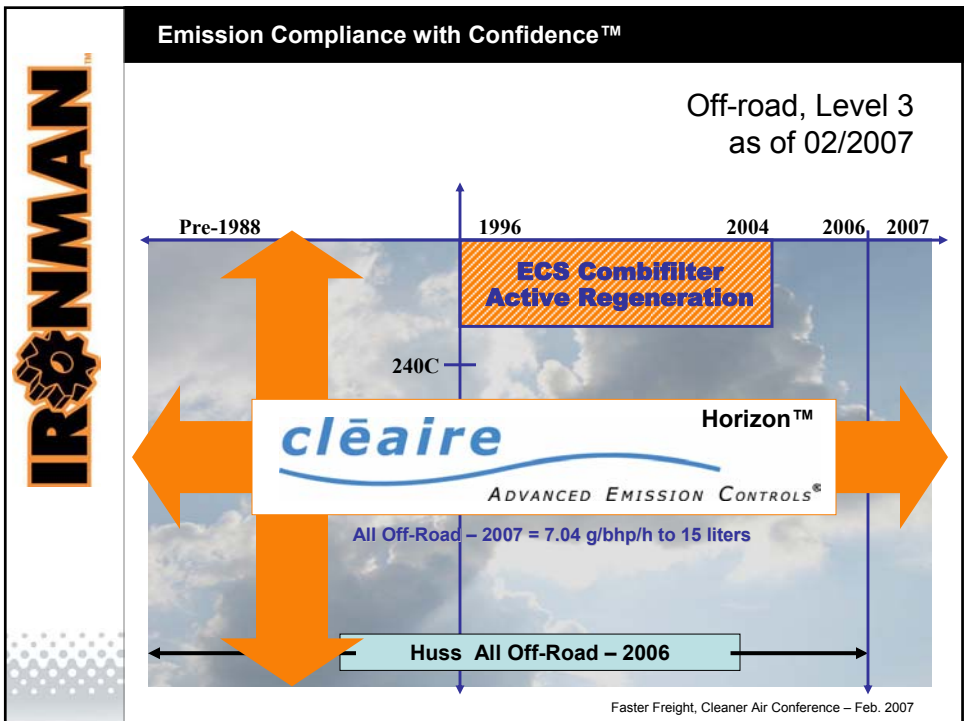
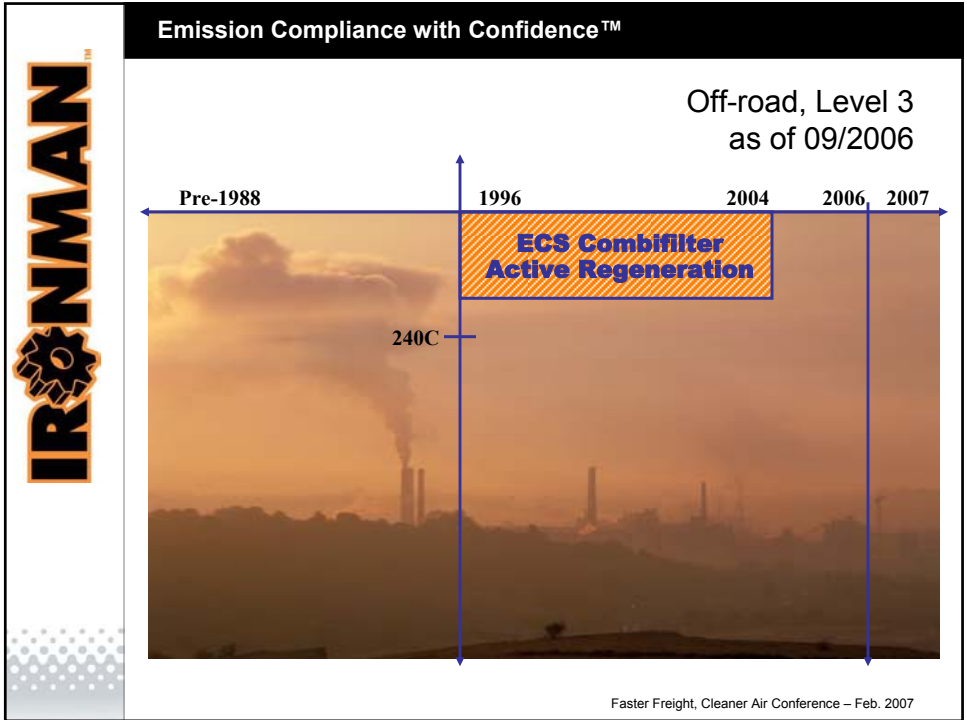
– 85+% PM Reduction

– Passive or Active Systems, Passive Systems with Nox Reduction

– Crankcase Emissions Reduction

Evolving Technologies





Horizon M™



“No Engine Too Old or Too Cold”

Horizon M™

Active

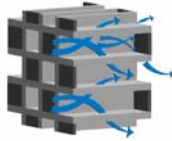


- Recent Verification for Off-Road Applications (1/07)
- Level 3 (>85%) PM Control
- Meets CARB NO2 Compliance Standards
- All Exhaust Temperature Profiles
- On-Road Verifications soon for 1960-2006 MY
- Service Intervals Based on Engine Efficiency



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DPF™



Exploded view illustration of a Donaldson Diesel Particulate Filter Muffler



- Provides up to 90% PM Reduction
- CARB-Verified for MY 1994-2002
- Requires De-Ashing (HAZMAT)

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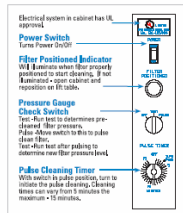


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DPF Pulse Cleaner DPF Cleaning System - Stage 1

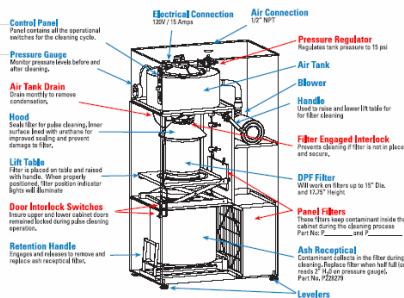
Part No. X007954



Measured in inches of water. Cleaning is complete when the final pressure reading is 1/2" or more of the pre-cleaning final pressure reading.



Cabinet Dimensions
76.2" H x 47" L x 23" W



- Safety Features
- System Features

Compressed Air Source: 90 psi
Approximate Energy Consumption: 3000
Warranty: 1 year parts and workmanship
Service Parts: Ash Recipient and Panel Filters, others to include.
Cabinet Access: Two doors (top and lower portion) on front facing side of cabinet.
Estimated Time to Install: 1 hour
Estimated Energy Consumption based on 500W/KW
1000W AC 2500
2000W AC 5000
3000W AC 7500

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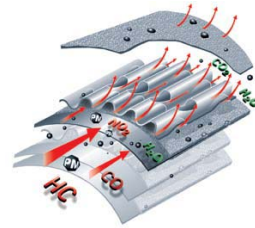


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DMF™



- 70%+ PM Reduction
- '91 – '02 Engine years
- Meets CARB NO2 Standards
- Does not require cleaning



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Longview™

- Level 3 (>85%) PM Control
- ≥25% NOx Control
- Verified On-Road 1993-2003 MY
- Meets CARB NO2 Compliance Standards
- Uses Diesel Fuel Rather than Ammonia or Urea
- Cost-effective NOx and diesel particulate (PM) reductions for in-use diesel engines.



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Spiracle™



- **90%+** Reduction in Crankcase Emissions including PM, hydrocarbons, blow-by gasses, and engine oil contaminants
- Reduces Engine Oil Consumption by 2-6 Gal. / Yr.
- Operates independently of retrofit devices

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Technology Partners:



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Emissions Technology Workshops

- ½ day educational seminar on emissions regulations, BACT retrofit technology
- Your location or ours



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“Clean Drive for the Ports”

- Enter drawing to win \$500 prizes
- Test your driving skills
- Meet Ironman representatives



Agreement with the level of 100%

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For More Information
Ironman Booth #325

Thank you...

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