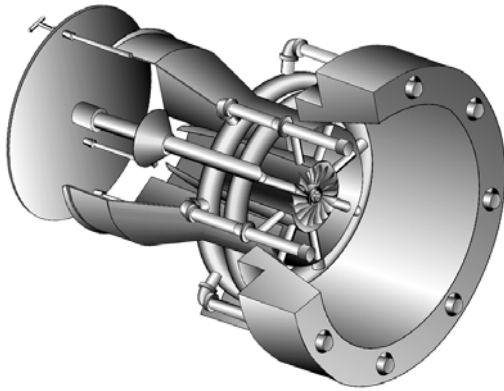


## THE DELTA-NOx ULN BURNER

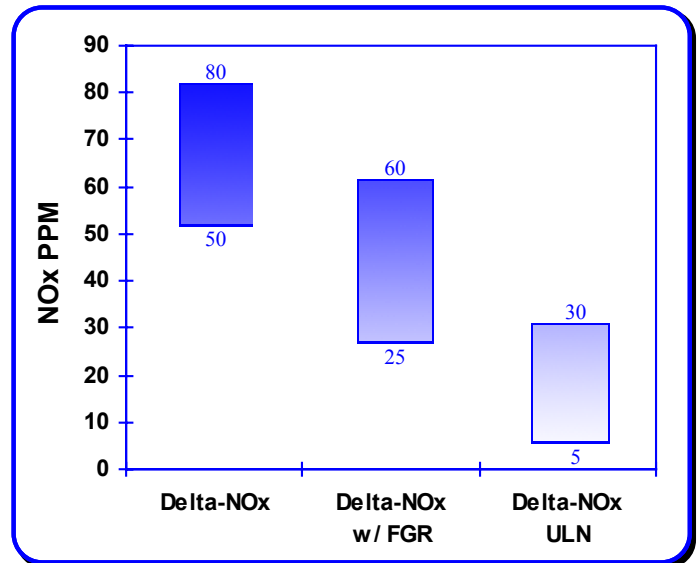


### THE NEW ULTRA LOW NOx SOLUTION

#### Innovative Ultra Low NOx Technology

Coen's well-known Delta-NOx burner, the industry's Low NOx burner of choice, exceeded 150 installations worldwide in just over four years. The Delta-NOx, designed for 50-80 ppm without FGR, can easily meet 25-30 ppm NOx with minimum FGR. And now, with new Ultra Low NOx (ULN) technology, the Delta-NOx can achieve 5-9 ppm. The Delta-NOx can now be tailored to meet any customer's NOx requirements.

Unlike other ultra low NOx techniques, the new Delta-NOx ULN's simple, yet innovative technology provides a low cost solution to meet any NOx requirement. By varying the air fuel ratio at strategic locations in the burner, the Delta-NOx ULN provides exceptional stability, even with large amounts of FGR. Maximum thermal and prompt NOx reductions are possible for the first time with a diffusion flame burner. Standard burner management and controls further simplify the design to help lower costs.



#### Benefits of Delta-NOx ULN

- Ultra Low NOx performance
- Extremely stable combustion
- Refinery gas compatible
- Ideal for single or multi-burner applications
- Safe operation with simple controls
- High burner turndown
- Low NOx capability with oil firing
- Improved air distribution promotes low CO
- Simple rugged design with no moving parts
- Existing Delta-NOx units easily modified to ULN

## Initial Testing

The Delta-NOx ULN performed exceptionally well in preliminary testing conducted at the Coen Research and Development Facility. It achieved as low as 3 ppm NOx with the use of 30% FGR. In testing, the Delta-NOx ULN produced virtually no CO emissions at all burner loads.

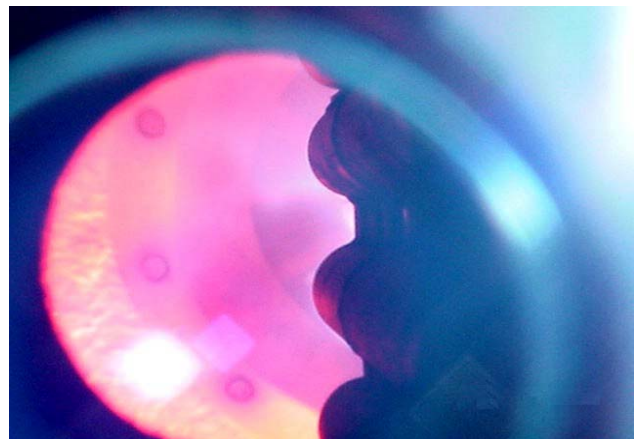
## Delta-NOx ULN Meets Project Goals

Coen successfully applied the ULN technology to an existing Delta-NOx installation at a Calpine facility in Pryor, Oklahoma. Calpine retrofitted their existing Delta-NOx 42 burner with the ULN technology on a refractory lined 170,000 lb/hr A-Type packaged boiler firing natural gas with flue gas recirculation. The boiler started up in a short time with NOx emissions below 7.5 ppm.

*“The burner certainly is exciting to work with, especially when we noted the burner’s excellent flame stability when rapidly changing loads. This is something I haven’t seen before in other low NOx burners”* commented William Stan Kee, Technical Advisor, Calpine Power Plant Technology



Delta-NOx ULN Installation at Calpine



Furnace Rearwall View of ULN Flame

Customer Needs	Operations	Air Quality
<ul style="list-style-type: none"><li>✓ Easy to Install</li><li>✓ Quick Start Ups</li><li>✓ Lower Cost</li><li>✓ Fast Delivery</li><li>✓ Trouble Free Design</li></ul>	<ul style="list-style-type: none"><li>✓ Simple Controls</li><li>✓ Excellent Turndown</li><li>✓ Fast Ramp Up Rates</li><li>✓ 10:1 Turndown</li><li>✓ No Moving Parts</li></ul>	<ul style="list-style-type: none"><li>✓ Meets BACT</li><li>✓ Ultra Low NOx</li><li>✓ Low CO</li><li>✓ Low Emissions Over Turndown Range</li></ul>

With Ultra Low NOx performance, lower energy consumption, higher turndown, and a simpler design than conventional burners, Coen’s new Delta-NOx ULN burner is ready to challenge all competitors in setting the new standard for low emissions.

For more information, talk to your Coen Representative about designing a dependable, integrated system to your company’s specifications using the new Delta-NOx ULN or any of Coen’s other outstanding products.



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