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An Introduction to Continuous Dry Kiln Technology by Valutec Wood Dryers Inc.


“Europe’s largest and leading supplier of dry kilns“.

Company Presentation

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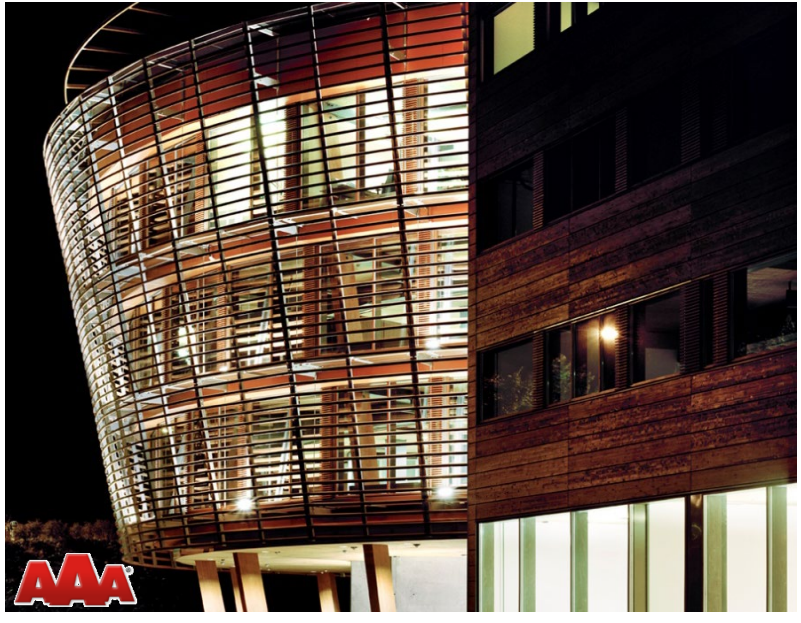
- Valutec Group
  - Valutec Inc
  - Valutec AB
  - Valutec Oy
    - Valutec LLC



Since 1922

Delivered more than:
2000 Progressive kilns
3000 Chamber kilns

Turnover ~ 70 M$

The Valutec Purpose

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- **We love our forests**
- **We believe in lumber as the best and most sustainable building material**
- **We want to support the sawmilling industry**
- **That's why we build service friendly stainless steel dry kilns with the most modern control systems and an attention to detail formerly not know in the industry**

Major differences in drying systems

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Scandinavia	North America
■ Fork lift loaded batch kilns and continuous kilns	■ Mainly trolley loaded double stack kilns
■ Continuous kilns used for over 70 years	■ Continuous kilns used since 2005
■ Continuous kilns with infeed / outfeed in one direction (including doors and vents)	■ Continuous kilns in dual path counter flow design (no doors, no vents, infeed / outfeed on either side)
■ Mainly conventional temperature drying around 176° F	■ Conventional to high temperature drying around 203° F to 266° F
■ Hot water heated	■ Heated with steam, thermal oil and direct fired
■ Stainless Steel Structure	■ Aluminum Structure
■ Mineral wool insulation	■ Prefab wall panels with polyiso foam
■ Focus more on quality	■ Focus more on capacity

Why Continuous Drying?

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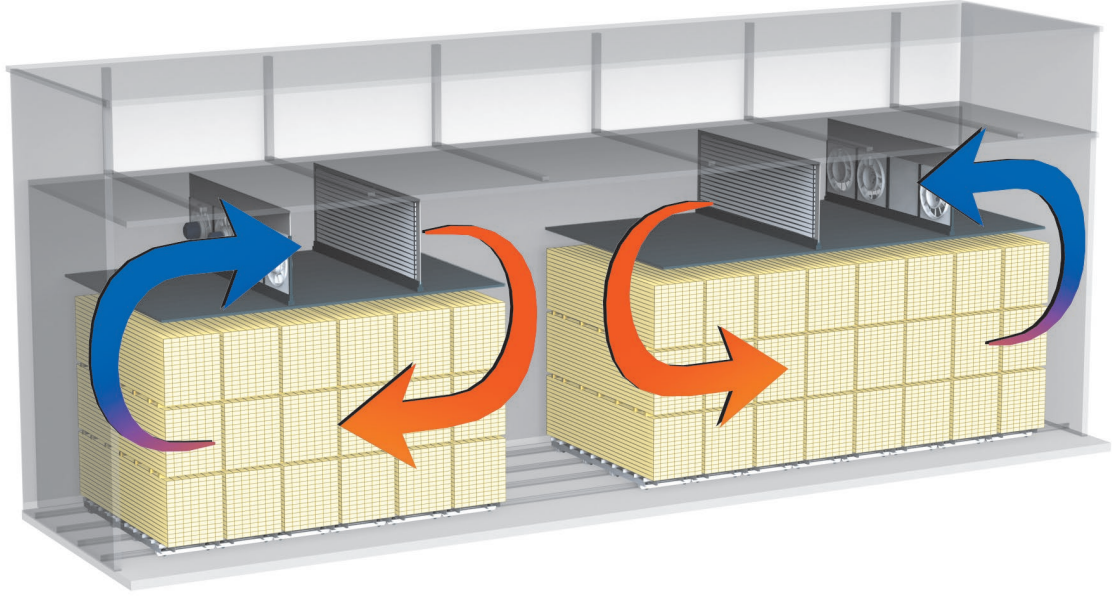
- **Steady work flow and easy planning of production**
- **Less usage of fork lifts**
- **Better lumber quality due to lower drying temperatures**
- **Very low standard deviation**
- **Less wets**
- **Less over drying**
- **Better for further processing (for example easier to plane)**
- **A much better energy efficiency due to an even heat demand**

Valutec Continuous kilns

FB / OTC – Side loaded with two zones
Ideal for stud mills



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The Valutec TC Continuous Kiln

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New TC at Moose River Sawmill

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TC – Longitudinally loaded with multiple drying zones. Extremely flexible
Ideal for all mills

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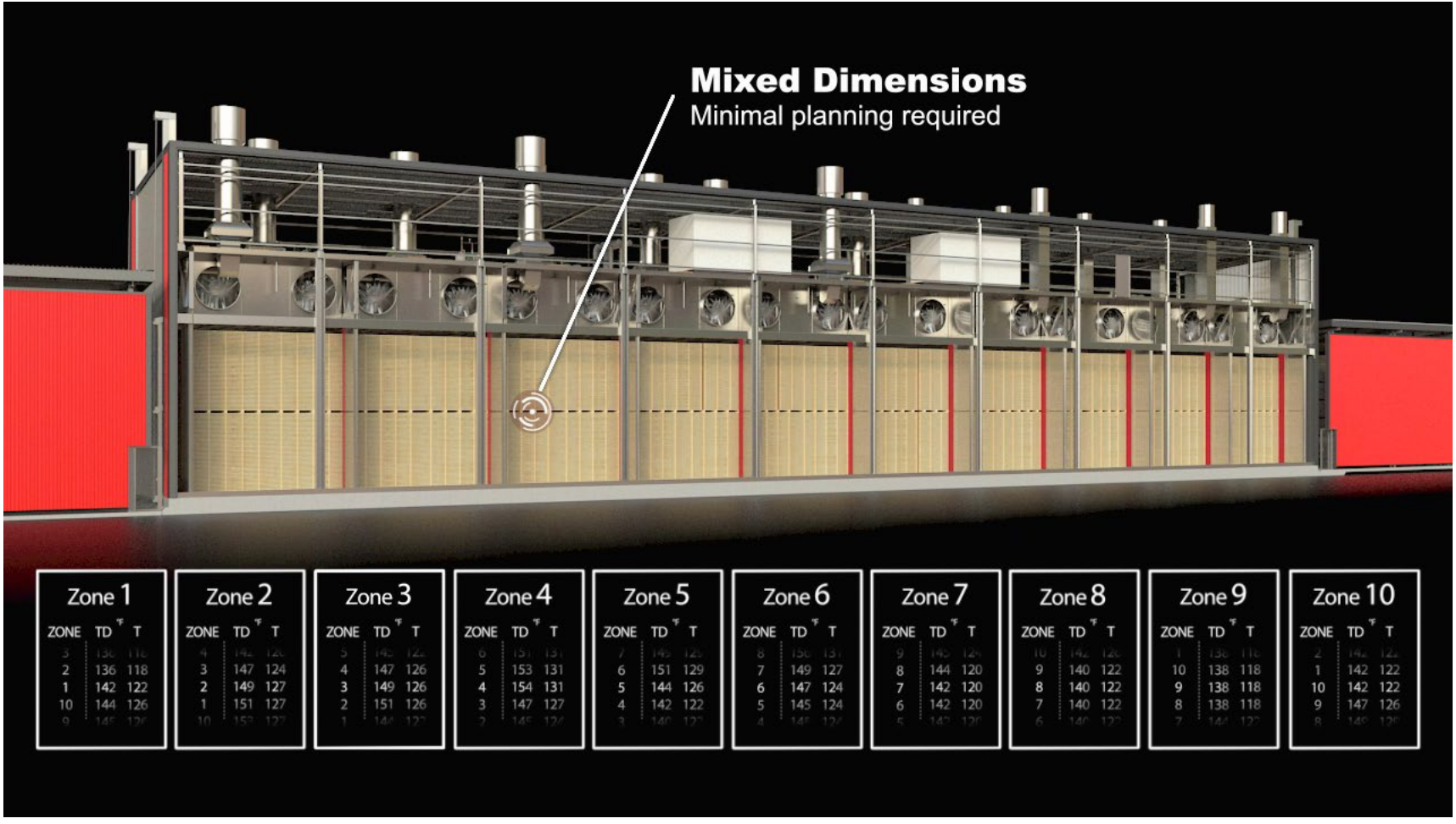

The Moose River Sawmill Challenge

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What they told us their log diet was when we sold the kiln:
90% Spruce, 10% Balsam Fir

What their log diet was when we commissioned the kiln:
90% Balsam Fir, 10% Spruce

The Results

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- Drying Balsam Fir from green to 19% in 66h with a final standard deviation of 4% (due to sinkers)
- Average steam consumption 12,000 lps/h
- Top layers straight
- Bright lumber

Moose River decided to use our kiln only to dry Balsam Fir. They dry Spruce in their old kilns.

Capacity meets Quality – The TC Kiln

"The Valutec TC Kiln does a great job in a lot less time we are used to and puts out a much better product."

Fred Haigis, Lumber Jard Manager, Moose River Sawmill.

TC

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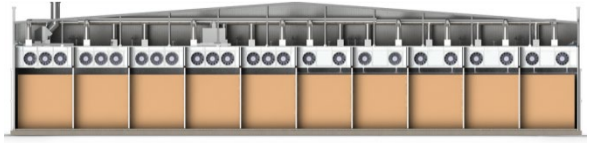
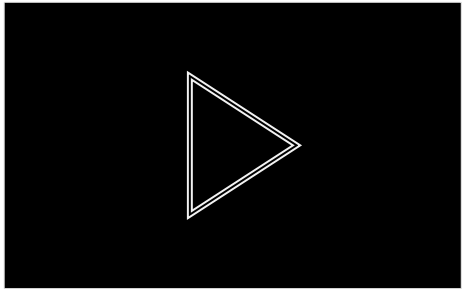


- 1 pcs TC continuous,10 zones
- Pressure frames
- Stainless steel
- Heat recovery
- Capacity: up to 125 mmbf nominal / year



Details Of The Feeding System

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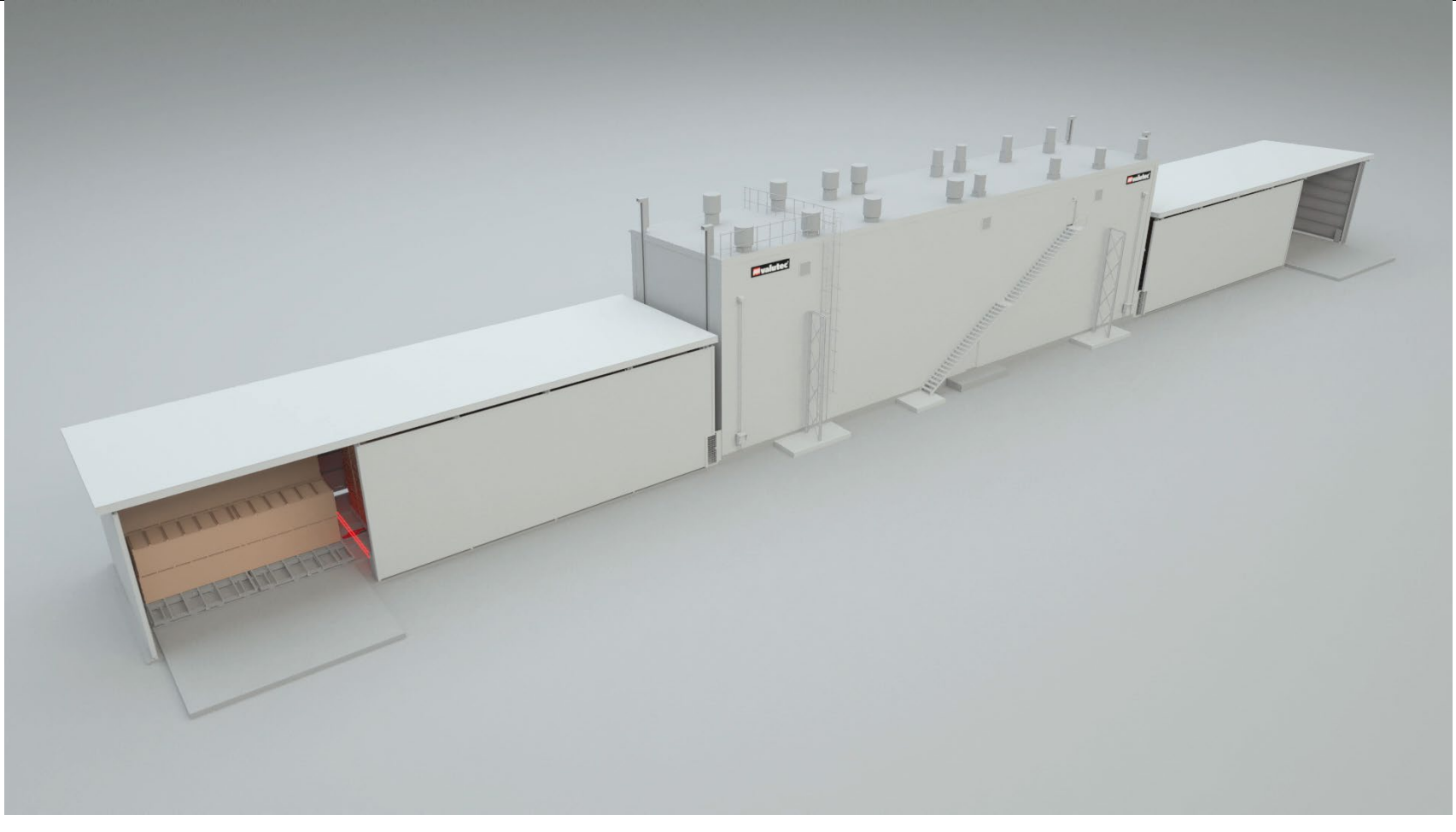

VALMATICS 4.0

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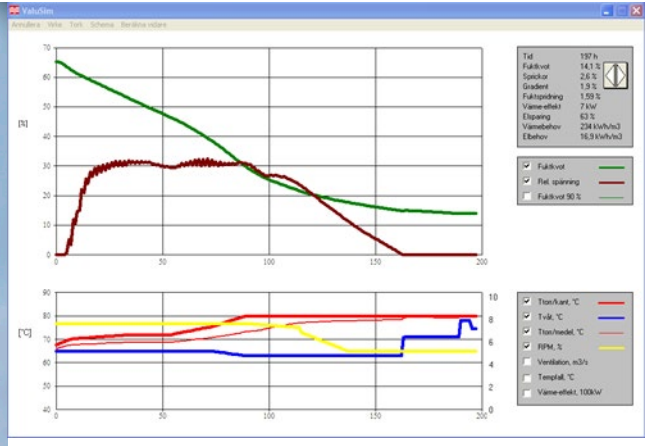
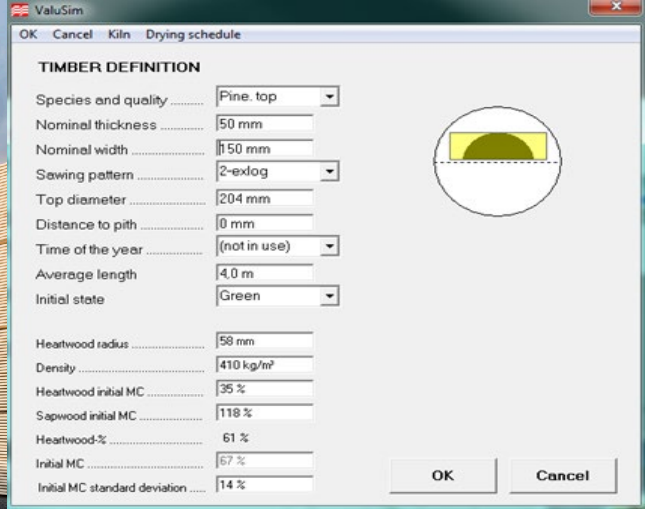
Expert system with integrated drying simulator

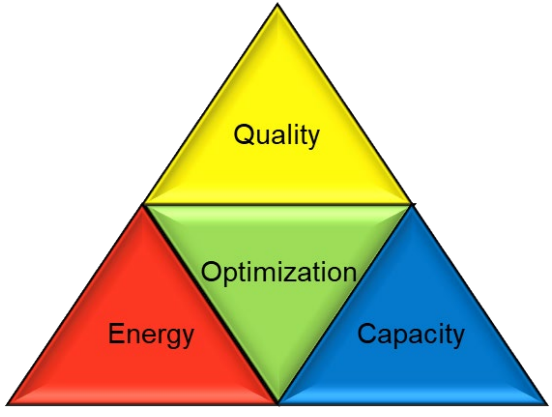
Process optimization according to:

- Quality
- Capacity
- Energy

Simultaneously!







Thank you for your time!

Before you ask any questions to the presenter please read the following cartoon: