

Energy Technologies for Sustainable Buildings

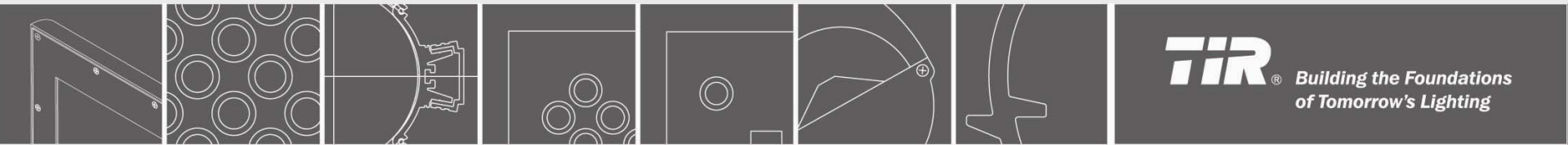
# Solid-State-Lighting: Today and Tomorrow

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TIR SYSTEMS LTD

March 3<sup>rd</sup> 2006

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# TIR Systems Ltd – Our Business

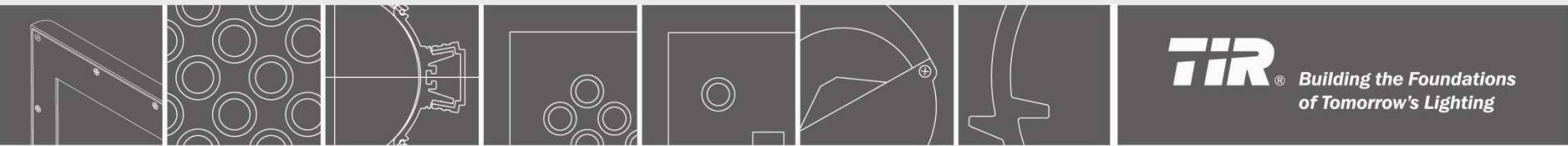
Established: 1982 (UBC Spin-Off Company)  
Recognized Leader in Solid-State-Lighting

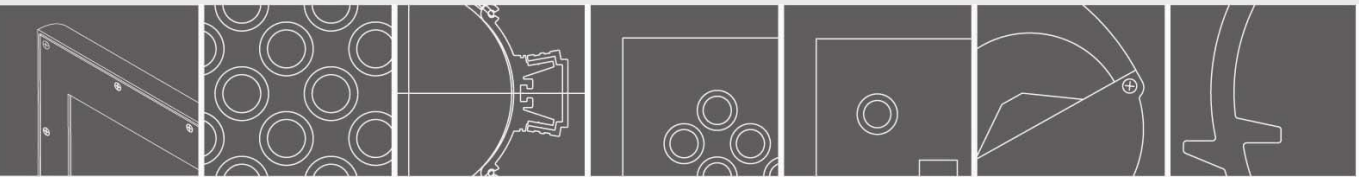
Location: Burnaby, BC

Revenues ('05): 17M

TSX Symbol: TIR

BC Technology Industries Association:  
Emerging Company of the Year (2004)



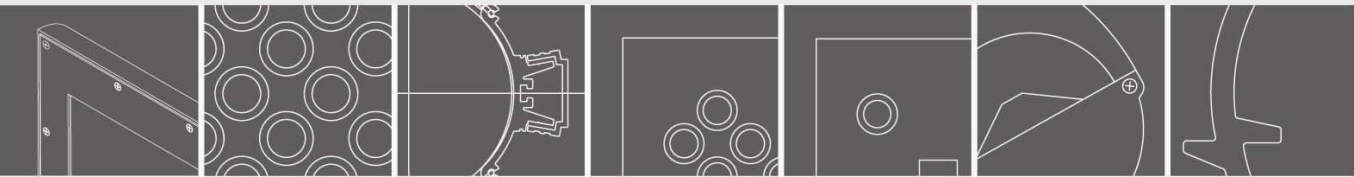
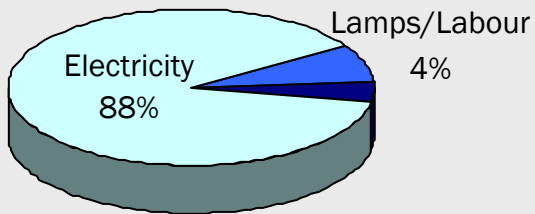


# Solid State Lighting Will Displace the Light Bulb

Lighting is long overdue for a transformation – it is one of the last major industries that uses primarily a 19<sup>th</sup> Century technology.

- 20% of the world's electricity is used for lighting
- In the most common bulb 90% of that energy is wasted as heat

## Cost of Light 2006



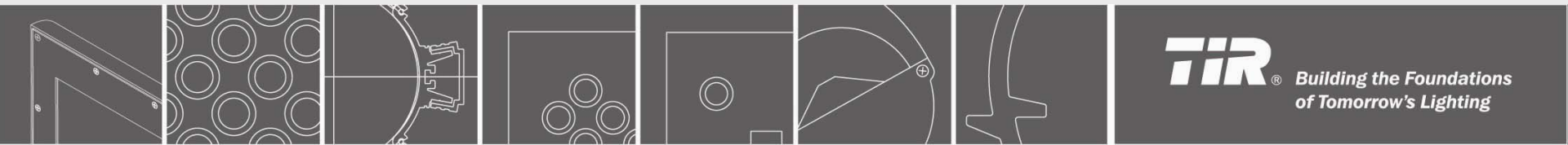
# Light Source Comparison - Efficacy



LAMP TYPE	Lm / Watt
Incandescent	15
Fluorescent	80

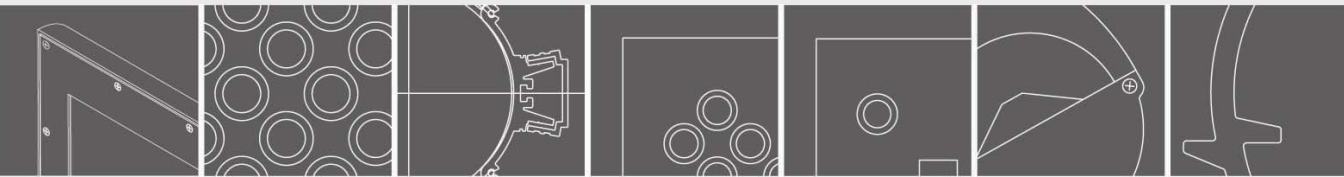
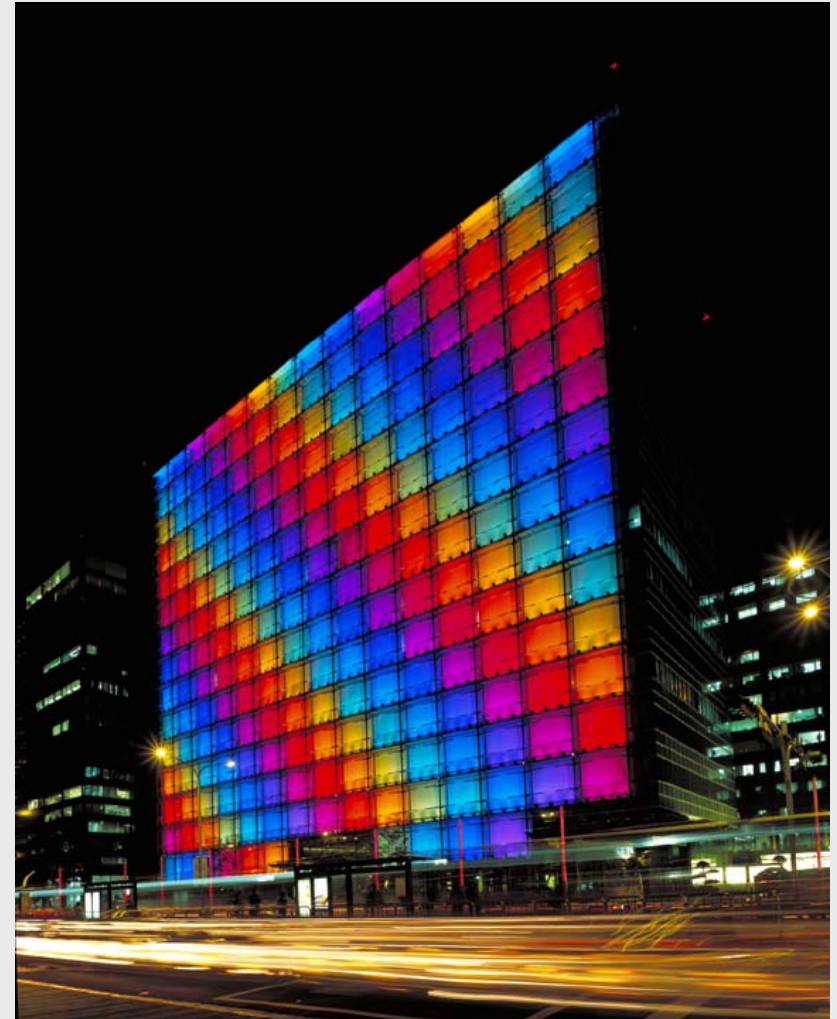


SSL 2003	15 <small>(30)</small>
SSL 2006	30 <small>(90)</small>
SSL 2012+ (Industry Goal)	150



# Today's Early Adopter: Architectural Color-Changing Luminaires

High-Efficiency and Long-Life allow  
for Unique Specialty Applications





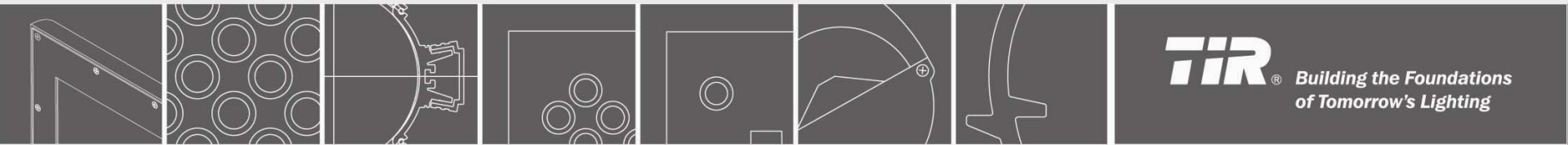
# Today's Early Adopter: Neon Replacement

High-Efficiency and Long-Life allow  
for significant energy savings:

**Early Adopter Customer:**

~ \$5M / yr in Energy Costs

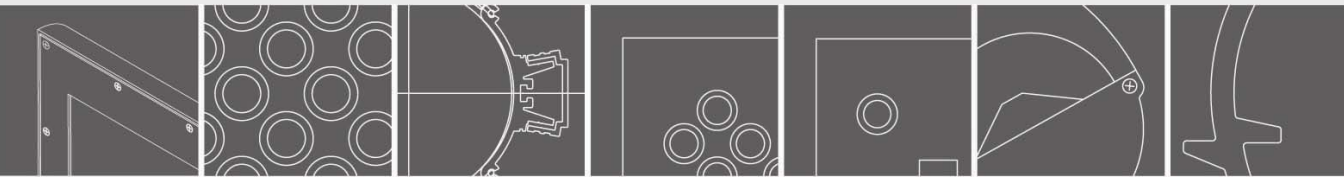
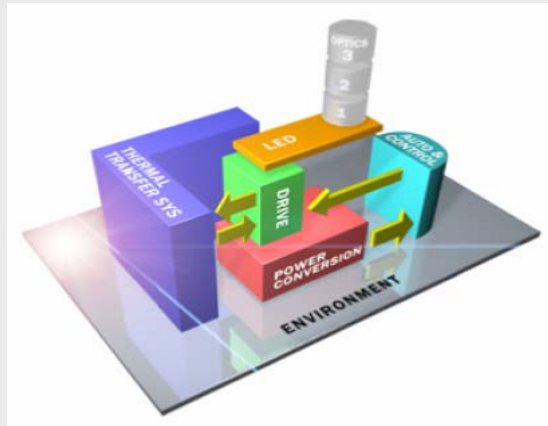
(1% of a power plant – 10 Mega-Watts)



# Tomorrow's Adoption: TIR Recently introduced a white light technology

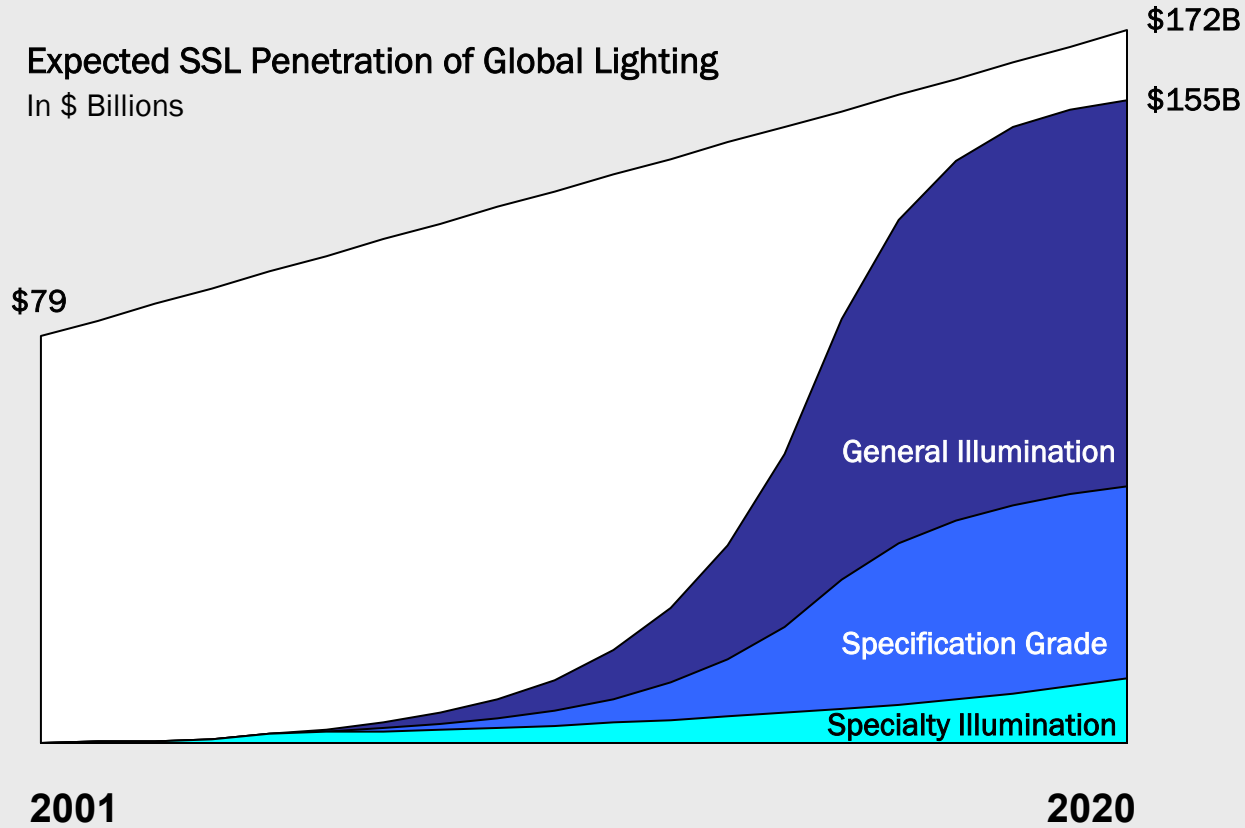
## Patented Breakthrough in SSL efficiency

- Highly Efficient use of LED sources
- Full Colour Control
- Long Life (50x)
- 25+ Patent Filings

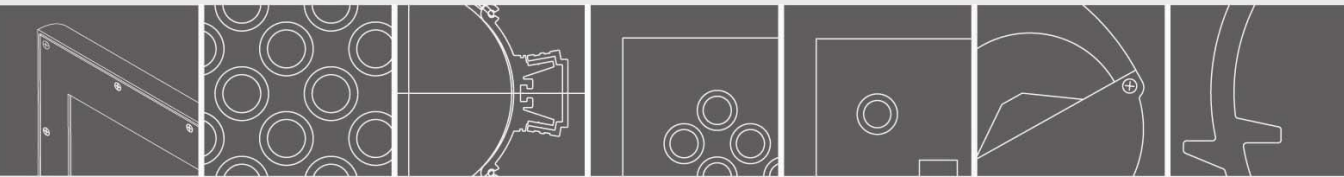




# US DOE projections – Massive SSL Adoption by 2020



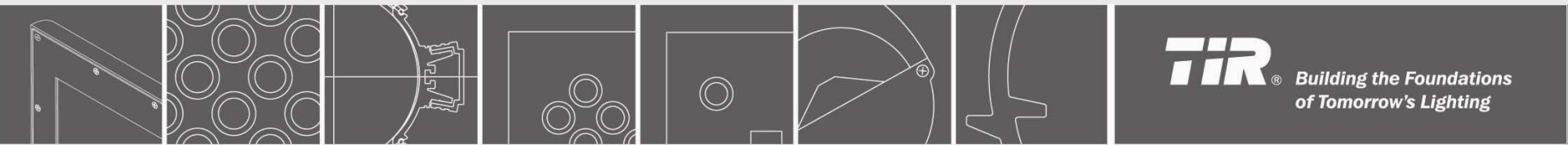
- TIR has strategically positioned itself as a leader in the early adopter specialty illumination market
- By 2020 the US DOE expects SSL to have 90% penetration of the annual lighting market



# Energy Savings Will Drive Mass Adoption of SSL

US DOE:

- By 2025, SSL is expected to reduce North American electricity consumption by 29%, leading to \$128.6B in energy savings
- SSL Adoption will avoid construction of approximately 41 – GigaWatt power plants
- Reduced energy usage would lower carbon emissions by 50%





# THANK YOU

