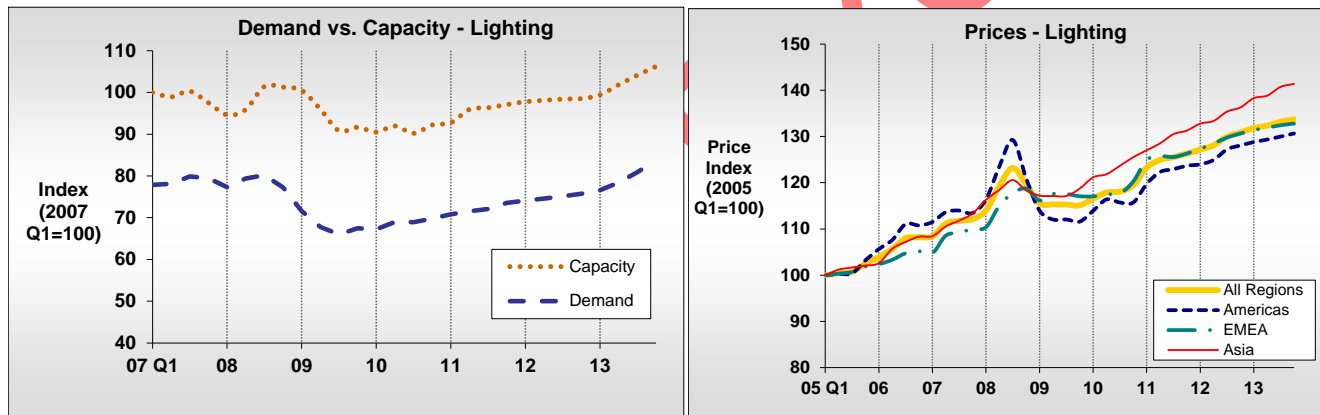


# 1 Industrial Lighting

Sales rose only 1% in Q3 due to a slow recovery of construction activity, and will rise 2% in Q4 and 1% in 2012 Q1 on government incentives in Asia to promote LEDs. A weak economy in 2012 will drive only a 3% sales increase before jumping 10% in 2013 on a revival in global construction. Philips and Zumtobel will add 2% to industry capacity in Q4, however, still lagging demand growth, which will push capacity utilization up 1% to 76%. Utilization will rise to 79% over the next two years, as additions by Nichia, Philips, and Myled will fall short of demand growth by 4%. Lead times will decline half a week to 7.5 weeks in Q4 as the low utilization will prevent significant backlogs from building. Lead times will then remain stable through 2013. Prices rose only 0.5% in Q3 owing to declining metal costs and will increase another 0.5% on average in Q4 as LED prices decline 7%. Prices will only rise 4% in 2012 and further decelerate to 2% in 2013 due to a 2.5% decline in steel costs in 2012 and a 3.5% decline in hot rolled steel costs in 2013. The price of fluorescent lamps will fall in 2013 due to a drop in rare earth metals costs.

Figure 1: Key Indicators for Industrial Lighting

Key Indicators	Q4 2011 - Q1 2012	Q4 2011 - Q4 2013
Demand	▲ 0.8%	▲ 14.0%
Order Lead Time	▲ 1.1%	▲ 2.7%
Prices	▲ 0.7%	▲ 5.9%
Capacity Utilization	▲ 0.1%	▲ 3.2%
Supplier Concentration	▶ 0.2%	▶ 2.0%



Osram (Siemens) acquired Encelium Technologies, a US specialist in advanced lighting control and energy management systems. GE acquired Israeli Lightech for its energy efficient SSL systems with intelligent power supply technology. Schneider partnered with NVC to increase its market share in small Chinese cities through NVC's 3,000 retail outlets. Dialight introduced DuroSite<sup>®</sup> LED area lights, a Safe Site certified product suitable for oil & gas industries, saving 70% energy compared to 250W HID's.

Figure 2: Industrial Lighting Suppliers

	Name	Home Country	3-Year Annual Growth Rate	Electrical as a % of Sales	2010 Lighting Revenues (\$M US)	R&D % of Sales 2010	Stock Price Change Last 90 Days	Q4 News
1	Siemens	Germany	-2.3%	31%	\$7,899	5.1%	5%	Bought Encelium for its energy management capabilities
2	Philips	Netherlands	-3.6%	21%	\$6,994	6.2%	19%	Invested \$8m to expand LED capacity in Argentina
3	Cooper	USA	-11.9%	67%	\$1,204	3.0%	22%	New LightBAR <sup>™</sup> using 75% less energy compared to HID's
4	Acuity	USA	-10.4%	73%	\$1,184	1.7%	18%	Sales rose 12% YOY on increased sales in North America
5	GE	USA	-8.9%	4%	\$1,082	3.3%	15%	Bought Lightech for its advanced SSL technology
6	Zumtobel	Austria	-13.7%	60%	\$894	4.0%	-5%	To invest \$27m in Austria to add 70% capacity by 2020
7	NVC	China	31.2%	100%	\$472	N/A	N/A	Sold 9% of shares to Schneider for long-term sustainability
8	Foshan	China	8.6%	100%	\$297	0.2%	-16%	N/A
9	Iguzzini	Italy	5.3%	100%	\$250	N/A	N/A	To light the prestigious Nevsky Avenue in Saint Petersburg
10	Dialight	UK	17.8%	100%	\$155	3.8%	-1%	New LED saves 70% energy compared to 250W HID's

## 1.1 Sourcing Recommendations – Industrial Lighting

1. Incorporate an adjustment factor for changes in rare earth metal prices in long-term framework agreements for fluorescent lamps. The price of rare earths, which has peaked in 2011 Q3, will fall on a two-year horizon, as the Chinese near monopoly power will degrade when new mines in Western Australia, South Africa, and India become operational in 2013.
2. Do not agree to fixed price medium- or long-term contracts with LED manufacturers, as the price of LEDs has dropped unexpectedly through 2011 (e.g. prices dropped 62% in China from September-November) and will most likely continue to do so in the coming years with technological breakthroughs. The replacement of costly sapphire substrates in LED chips with GaAr (or another relatively cheaper material) will be one such breakthrough.
3. Require suppliers of integral lamps and luminaires based on LED technology to present certificates of quality tests from their LED supplier (such as those provided by Cree) to avoid safety hazards arising from insufficient lighting and replacement of LEDs in newly installed luminaires. It has become an increasingly standard practice for luminaire suppliers to blame failures on component suppliers, leaving buyers to bear the burden of costly replacements.
4. Invite Osram to demonstrate how the lighting control and energy management technology recently acquired with Encilium Technologies can help bring down energy related costs in office buildings and hydrocarbon processing plants. Siemens/Osram has previously guaranteed 50% electricity savings when retrofitting major facilities and often exceeded the target by 5-10%.

## 1.2 Sales will grow 2% in Q4 on government incentives in Asia to encourage adoption of LED. Sales growth will pick up at 10% in 2013, compared to just 3% in 2012, driven by a surge in construction.

Lighting sales grew only 1% in Q3 as the revival in construction activity was sluggish with a quarterly growth rate of just 2% in Q3. The increase in construction was restricted by tight financing, as lenders are still reluctant to fund projects over fears of the world economy slipping into a new recession due to a weak recovery from the 2008-09 recession.

Asia and EMEA led the growth in demand with increases of 1.3% each in Q3. Asian sales were driven by a 4% increase in Asian construction activity. The sales increase in EMEA was driven by a similar 4% increase in Eastern European construction activity and a 3.5% increase in the MENA region.

In contrast, lighting sales in the Americas were stagnant due to slow growth in commercial lighting fixture sales – both increased 0.5% in Q3. When correcting for general inflation this equals zero growth in the actual volume sold. With construction declining in the US depicted by a decrease in the American Institute of Architects' Architecture Billings Index. The index is an indicator of non-residential constructions, where a value below 50 indicates that billings declined. This index value fell to 45.1 in July 2011. Sales in the Americas were primarily driven by replacements to increase energy efficiency.

Lighting sales will rise 2% in Q4 on a 1% increase in demand for commercial lighting fixtures, which will primarily be driven by replacement of existing incandescent lights with more energy efficient