



# Market Segments

# Germicidal



# A Variety of Growth Potential

**Potential  
Growth  
“Water”**

**Waste Water**



**Drinking Water**



**Pool & Spa Water  
Treatment**



**Water Reclamation**



**Aquaculture**



**Life Sciences**



**Odor Control**



**Air Sterilization**



**Food Preservation**

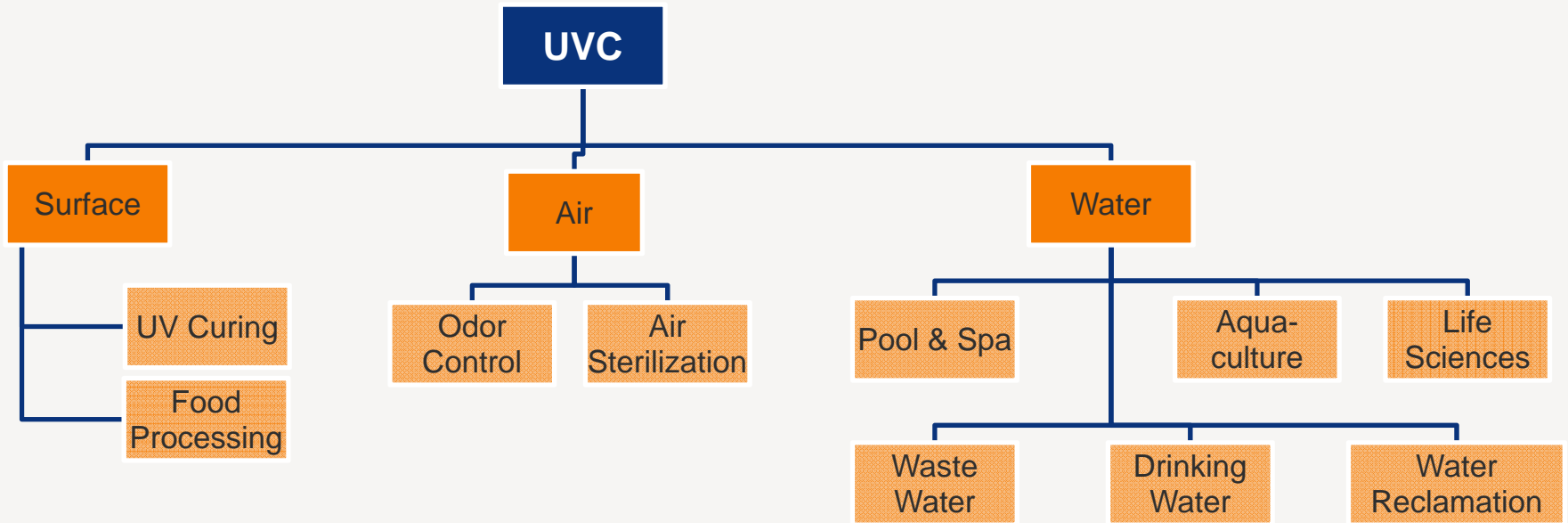


**UV Curing**



**Potential  
Growth “Air  
& Surface  
Market”**

# LSI & LT Downstream Value Chain



# UVC Segment: Water

- **Waste water** is any water that has been adversely affected in quality by anthropogenic influence.
- It comprises liquid waste discharged by domestic residences, commercial properties, industry, and/or agriculture.
- It can encompass a wide range of potential contaminants and concentrations.



# UVC Segment: Water

- Water of sufficient quality to serve as **drinking water** purified and disinfected by a self-contained unit from an untreated source.
- Examples include:
  - rivers
  - recycled water reservoirs
  - aquifers
  - etc.



# UVC Segment: Water

- UV light in the 185nm range, and ozone gas of low concentration is produced.
- Ozone to combine small insoluble particles that would normally pass through a sand filter, into larger particles that can be effectively trapped by the filter.



# UVC Segment: Water

- The process by which water is used in houses and businesses goes down the drain and becomes wastewater.
- Wastewater is then cleaned using, in part, the UVC radiation process so the water can be returned to the environment safely.





# UVC Segment: Water

- The farming of freshwater as well as saltwater organisms and plants.
- UV light maintains a healthy operating environment, free of pathogenic micro-organism, which can have adverse on the controlled ecosystem.



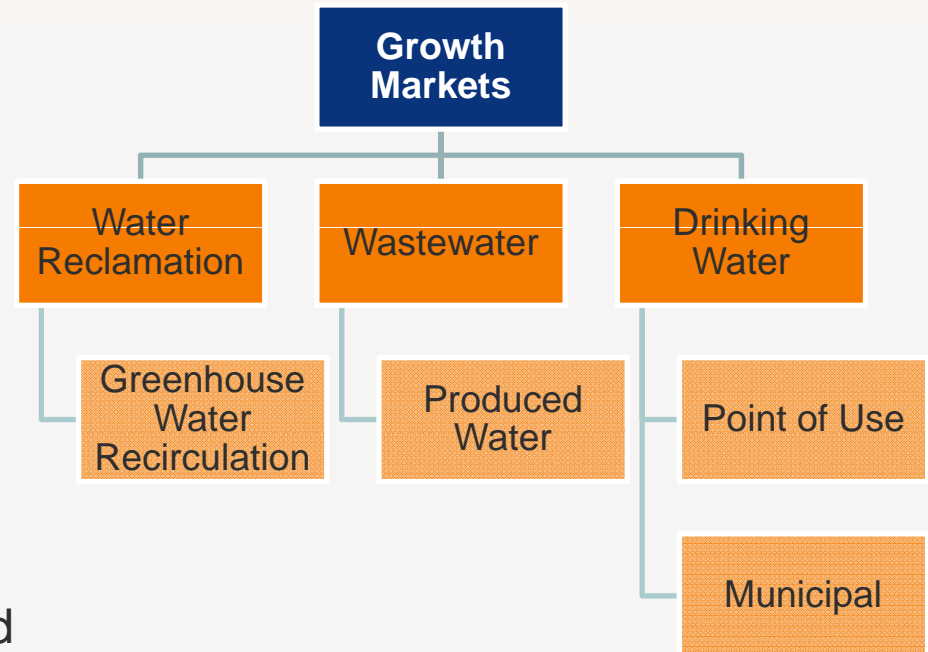
# UVC Segment: Water

- Incorporates sciences and technologies which require a high level of water disinfection.
- Applications for UV include TOC reduction, ozone destruction, and chlorine (or chloramine) destruction.



# Potential Growth “Water”

- U.S Department of Agriculture cites the nursery and greenhouse industry as the fastest growing segment of U.S agriculture.
- Produced Water Utilization Act of 2008 (awaits approval from the Senate) encourages the R&D of environmentally sustainable to utilize produce water.
- There are currently 156,000 public drinking water systems in the United States serving 90% of the population.



# UVC Segment: Air

- The neutralization of unpleasant odors is usually created as a byproduct.
- Sources of odor:
  - Kitchens (HVAC)
  - Wastewater Plants
  - Water
  - Farms



# UVC Segment: Air

- The process of effectively killing or eliminating transmissible agents, fungi, bacteria, viruses, and spores from the air.



# UVC Segment: Surface

- The process of treating and handling food in a way that preserves its edibility and nutrition value.
- The LSI application of this process is known as **Food Irradiation**.



# UVC Segment: Surface

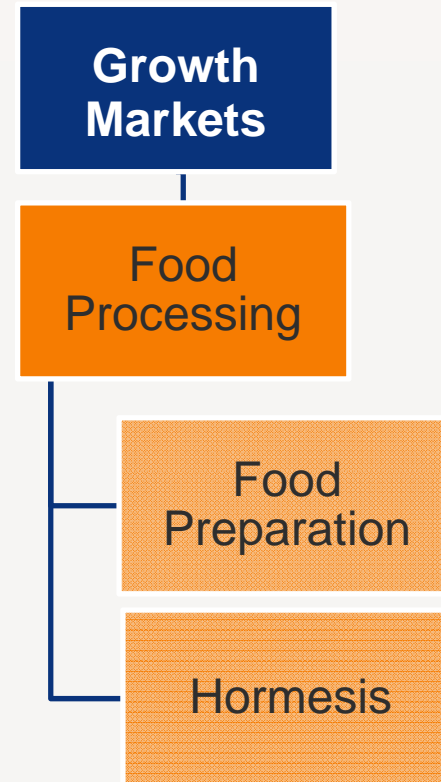
- Inks consisting mainly of acrylic monomers, with an initiator exposed to strong UV-light, "dry" as soon as they are cured.
- They can be applied to a wide range of uncoated substrates, and they produce a very robust image.



# Potential Growth “Air & Surface”

- UV Hormesis can reduce post-harvest losses due to the delayed ripening of fruits and vegetables.
- 550 million dollars of fresh fruits and vegetables were exported from the US year to date.

*source: www.usda.gov*





# Lamp Classification

- Lamp Size is one way of identifying application and usage.
- Further Lamps Classifications:
  - Amalgam
  - High Output
  - Ozone Producing
  - Spliced – 185nm / 254mm

Lamp Sales to Size Ratio	
LENGTH in MM	
Small	54%
202 - 839	
Medium	27%
G36 (840-1553)	
Large	20%
G64(1554)-Larger	
Total	100%

**Any Questions?**  
**Thank you for your attention.**



**LightTech**



**LightSources**