



LED Lighting Experts

Looking to Collaborate with
AgTech Entrepreneurs



We have substantial LED-based lighting systems design and construction capability...

Overview



- **GemLight Technologies designs, develops and sells LED-Based High-Brightness LCDs and systems**
 - Consumer and commercial products
 - Instrumentation
 - Military and avionics applications
- **30+ Years entrepreneurial experience**
 - Design and technology development firm founded in early '80s
 - 6 lighting-related patents and numerous disclosures on file
 - Experienced expert witness in patent litigation
 - First-hand experience starting and running tech-oriented businesses
 - Developing and negotiating many types of business contracts
 - Experienced with both domestic and off-shore supplier relationships

Experience



Broad industrial experience (partial client list)

3M
Alara, Inc. (startup)
Bausch & Lomb
Beckman Instruments
Black & Decker
Brocade Communications
Canadian Marconi Co., Ltd
Corning, Inc.
Data 911, Inc.
Fallon Luminous Products Corp
General Dynamics Canada
GE
Gilbarco, Inc.

Go Corporation (startup)
General Magic (startup)
Harris Corporation - Dracon Division
HP
Hughes - Carlsbad
IBM
IDEO Industrial Design
Interactive Flight Tech (startup)
InFocus Systems
Interactive Game Tech (IGT)
Interro Systems
Litton Systems Canada, Ltd.

Medtronic, Inc.
Olivetti
Pixtronix, Inc. (startup)
Qualcomm, Inc.
Raychem Corp.
Seimens - Pacesetter
Sega of America
Solectron, Inc.
SPX Corp - OTC Division
Steag RTP Systems, Inc
Sun Microsystems
Telex Communications
Vizio, Inc.

Product designs for a variety of industrial applications

- IT: notebook PC, vehicle-based PC, PDA, HMD
- Avionics: In-flight entertainment, military displays
- Instrumentation
- Display components
- LED based specialty lighting systems

Competitive Advantages

Very rapid prototyping of customized LED-based AgTech lighting

- Have in-house custom designed LED heat sinks
- Have in-house custom designed MCU-based LED controllers
- Have long term supplier relationships for all needed components and materials

Experienced with high luminous density LED system design

Excellent thermal design for long life and high reliability

- Passive and active cooling options, depending on brightness and size
- Complete system-level solution

Advantages for Vertical Agricultural Market Apps



CFD based design for high efficiency & long life

In addition to its decades of display lighting systems design experience, GemLight regularly employs CFD modeling in its design process.

Multi-Phosphor LEDs

GemLight can custom formulate LED phosphor blends to create specific spectral characteristics needed for optimized plant growth.

Long-Lifetime LEDs

With proper thermal, optical and electronic design, useful product lifetimes in excess of 10 years are achievable.

Previous Product Examples

GemLight
Technologies



GemLight's Full HD, Full Sunlight Viewable 72" Module at SID 2011



Police/Fire/Municipal Vehicles (public safety)



Military Remote Targeting System

Specialty SSL Products

FLoSiL Signaling Light

GemLight
Technologies



Patented firefighter's location signaling light (FLoSiL) Locating/Signaling System



GemLight Technologies' was honored at LEDs Magazine 2016 Sapphire Awards Banquet

GemLight Proprietary

Specialty SSL Products

GemLight's IllumenArt Systems

GemLight
Technologies



6' X 2' GemLight backlit photo mural in Maui airport (amazing color & brightness)

Facilities & Instruments



Photronics & Optics Test - Near IR-Vis-UV Integrating Sphere



Clean Assembly Room - HEPA Laminar Air Flow



Electronics Assembly Area



Quick Prototyping Area

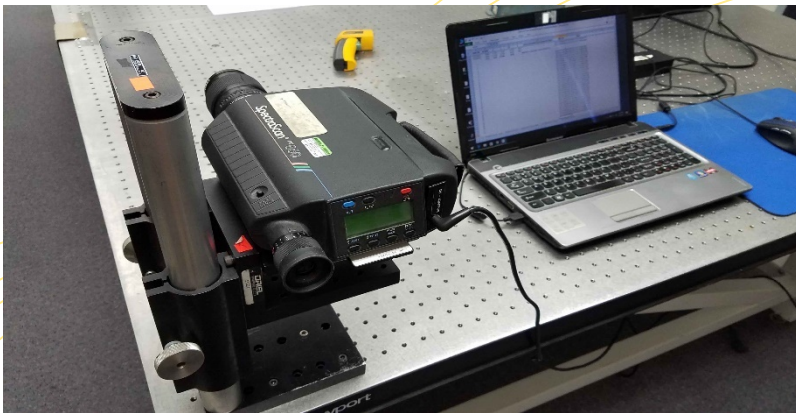
Facilities & Instruments



Assembly Tables



Assembly and Test Bench



Spectrascan PR-650 Photometer



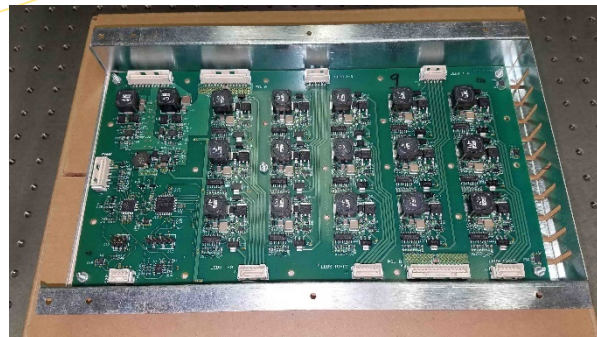
FLIR TG165 Imaging IR Meter

Custom In-House LED Lighting Hardware

GemLight
Technologies



LED Illuminator Custom Mount & Heat Sink



Intelligent MultiChannel LED Controller

GemLight Proprietary



Add our Lighting Expertise to Your AgTech Team

Contact

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