



# Stellar

Smart Energy Solutions

**SPECIFICATIONS &  
CONFIGURATION OPTIONS**



## Advanced LED Dairy Lighting Technology

Energy Saving | Surge Protection | Heat Reduction

Stellar Smart Energy is the LED lighting products group of Gröv Technologies. The group produces advanced LED lighting systems and operating software for indoor growing and commercial installations.

Stellar LED lighting technology significantly reduces energy costs, protects against power surges, and lowers radiant heat. Dairy barn installations use local mesh networking to monitor performance, and the control brightness and timing of each section in the barn; from free-stalls, to sorting pens, to the milking parlor. Long-day and short-day lighting requirements can be applied over individual pens. Herds rest comfortably as Stellar lights mimic natural sunrise-sunset lighting conditions to increase milk production.



Stellar 20-3 Light Fixture

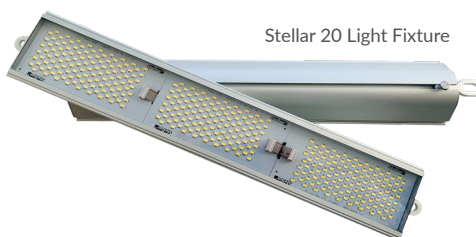
### ENERGY SAVINGS | 50-70%

The Stellar team conducts an on-site energy use assessment to generate a power savings profile. Then, needs and functionality are determined to provide a complete cost/benefit analysis. A 50-70% energy savings can be expected from a basic installation.

Savings of up to 90% can be achieved when replacing sodium vapor lamps with Stellar's complete SmartEnergy LED solution.

### RETROFIT | MODULARITY

A key advantage of the Stellar LED system is the ease of installation over existing construction and the modular design that expands each fixture to provide the exact luminance required. Speed of installation and the ability to use existing wiring greatly reduces costs.



Stellar 20 Light Fixture

### STELLAR LED LIGHTING ADVANTAGES

- Lower Energy Costs
- Power Surge Protection
- LED Longevity
- Heat Management
- Lighting Controls | Dimmable
- Wireless Mesh Networking
- No Secondary Comm. Line
- Flexible Modular Design
- Monitoring Sensors
- Moisture Resistant
- Dust Resistant
- Corrosion Resistant
- Bird Nest Resistant
- No Bulky Heat Sync or Ballasts
- Installs Over Existing Wiring

## ELC™ Technology

The Stellar Environmental Learning Computer (ELC) is the central energy management unit that controls and monitors all the lights and energy sensors in the facility. It sits next to the main circuit (panel/breaker) and communicates with each light fixture or sensor through a Stellar Powerline Controller (PLC).

### WIRELESS MESH NETWORK

Each circuit is wired to a PLC that is connected to the ELC through wireless mesh network, eliminating the need and expense of running secondary communications lines.



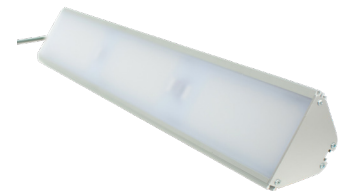
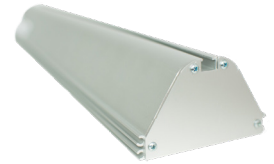
ELC™ Sensor Control Hub

### PROGRAMMING CONTROLS

The ELC controller can be programmed to send information to each circuit and then to any light on that circuit. This enables operators to micromanage lighting when and where it's needed in the entire barn. Motion control sensors can also be integrated to further reduce energy waste.

### ENERGY USE SENSORS

Stellar Energy Use Sensors (EUS) can be attached to any circuit running equipment, pumps, refrigerators, etc., and then control and monitor energy usage. Each EUS connects wirelessly to and can be programmed through the Environment Learning Computer™.



## WaveChip™ Technology

Individual Stellar lights are controlled through patented WaveChip™ circuitry that outperform traditional LED lights in operation, maintenance, and longevity.

### HEAT MANAGEMENT

AC power from 90v to 305v is converted to low-power DC without the use of heavy heat syncs or ballasts. High levels of radiate transformer heat is significantly reduced and managed through the WaveChip™.

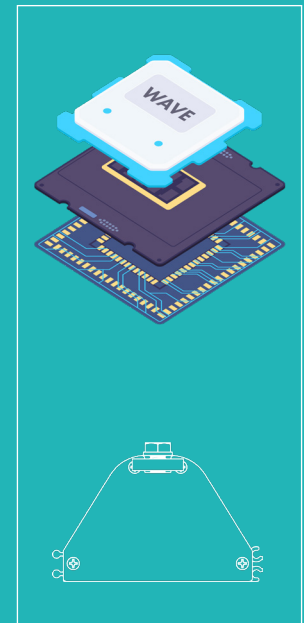
### SURGE PROTECTION

The WaveChip™ protects against power fluctuations or "dirty power" damage which can severely shorten the life of LED chips.

This is especially important for rural installations where end of line voltage spikes consistently.

### ENVIRONMENT PROTECTION

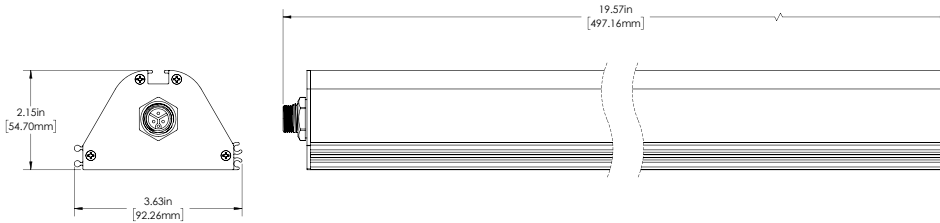
The Stellar LED Dairy Light is designed with a smooth rounded top to discourage birds from nesting, which for traditional flat top LED fixtures can eventually cause overheating. Conformal coating on all the electronics is designed to withstand moisture and corrosion.



## OVERVIEW

Stellar's Wave Chip™ technology is a breakthrough in traditional lighting and has solved the issues faced by the challenges of current LED technology-inefficient power conversion, excessive hardware replacement costs, and the need for traditional heat syncs, drivers and ballasts.

## RT-SERIES Wave Chip™ Technology



## SPECIFICATIONS

### OPTICAL SPECIFICATIONS PER EACH MODULE

Lumens (see Electrical Specifications below)	Beam Angle*	120°	
CCT (K)	2700,4000,6000	Projected Lifetime	> 100,000 1 *
CRI (Ra)	> 70	Luxes @ 1 meter	1,911
Efficacy (lm/W)	120lm/W*		

### ELECTRICAL SPECIFICATIONS

Watts	Current	Amps	Lumens
100	Current Draw at 208V	480mA*	18,000
110	Current Draw at 240V	416mA*	17,600
130	Current Draw at 277V	160mA*	19,500

### LED & DRIVER SPECIFICATIONS

LED Type	5730	Power Factor	> .90*
Dimmable	Yes	THD	< 20%*
Input Frequency (Hz):	50/60Hz	Surge Protection	10kV
Lifetime Rating:	45,000 hours @ 80° C		

\*Can be adjusted based on custom requirements and configurations

**Mounting:** A standard bolt will fit in the slots: 1/4", 3/8", 1/2"

**Shielding:** UL Rated Polycarbonate

**Finish:** Anodized Aluminum

**Warranty:** 5 Years standard

**Listings:** ETL (Preliminary)

**Files Available:** Upon Request

### Razortek Lighting Value

Energy/Maintenance Savings (50% to 90%+)

#### Longevity

- Handles Dirty Power
- Multiple Voltage
- Internal Thermostat adjusts

#### Communication

- Existing Wires (1-Way Comm, and control lights)
- New Wiring (2-way comm, allows for feedback and monitoring)

#### Retrofit

- 250 different existing fixtures

#### Modular (Legos for lights)

- Reduce Inventory (Us and Electricians)
- Install Light Flexibility (Long, Square, Small)
- New or Old Fixtures

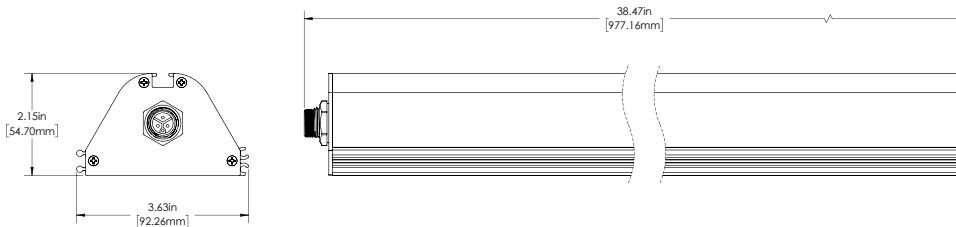
## PRODUCT HIGHLIGHTS

- ✓ Manages and self-protects against power and heat fluctuation (dirty power)
- ✓ Summary reports on power outages and issues
- ✓ Easily remove or add lights without adding more wires and hassle
- ✓ Significantly lower heat than traditional lighting
- ✓ 5-year warranty

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Watts	Current	Amps	Lumens
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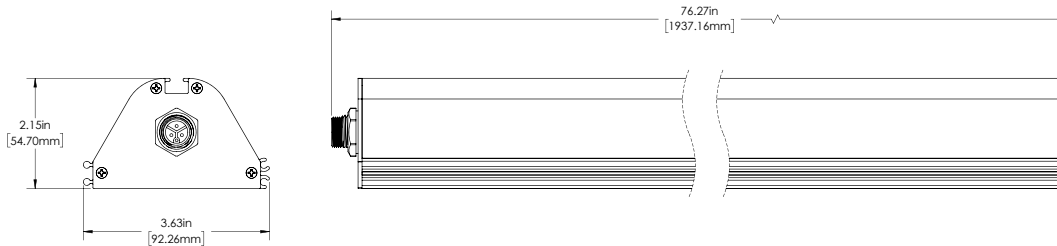
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Watts	Current	Amps	Lumens
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CRI (Ra)	> 70	Luxes @ 1 meter	1,911
Efficacy (lm/W)	120lm/W*		
ELECTRICAL SPECIFICATIONS			
Watts	Current	Amps	Lumens
200	Current Draw at 208V	960mA*	36,000
220	Current Draw at 240V	832mA*	35,200
260	Current Draw at 277V	720mA*	,000
LED & DRIVER SPECIFICATIONS			
LED Type	5730	Power Factor	> .90*
Dimmable	Yes	THD	< 20%*
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Stellar's Wave LED smart technology is a breakthrough in traditional lighting and has solved the issues faced by the challenges of current LED technology-inefficient power conversion, excessive hardware replacement costs, and the need for traditional heat syncs, drivers and ballasts.

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CRI (Ra)	> 70	Luxes @ 1 meter	1,911
Efficacy (lm/W)	120lm/W*		
ELECTRICAL SPECIFICATIONS			
Watts	Current	Amps	Lumens
100	Current Draw at 208V	480mA*	9,050
110	Current Draw at 240V	416mA*	8,800
130	Current Draw at 277V	160mA*	10,400
LED & DRIVER SPECIFICATIONS			
LED Type	5730	Power Factor	> .90*
Dimmable	Yes	THD	< 20%*
Input Frequency (Hz):	50/60Hz		
Lifetime Rating:	45,000 hours @ 80° C	Surge Protection	10kV

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#### Communication

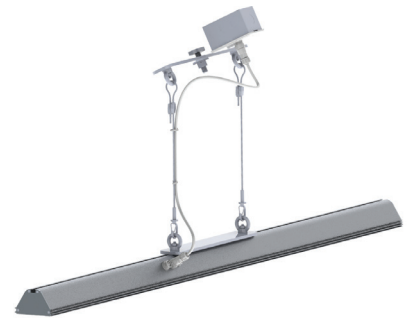
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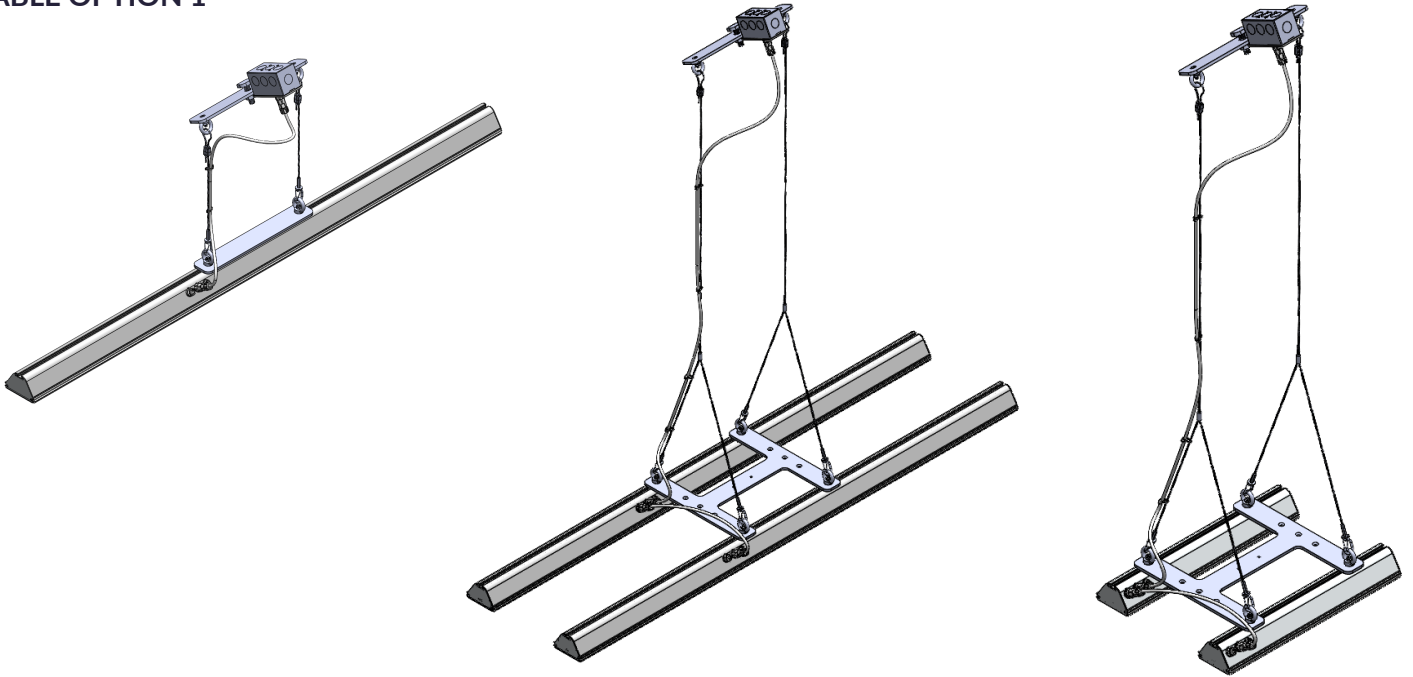


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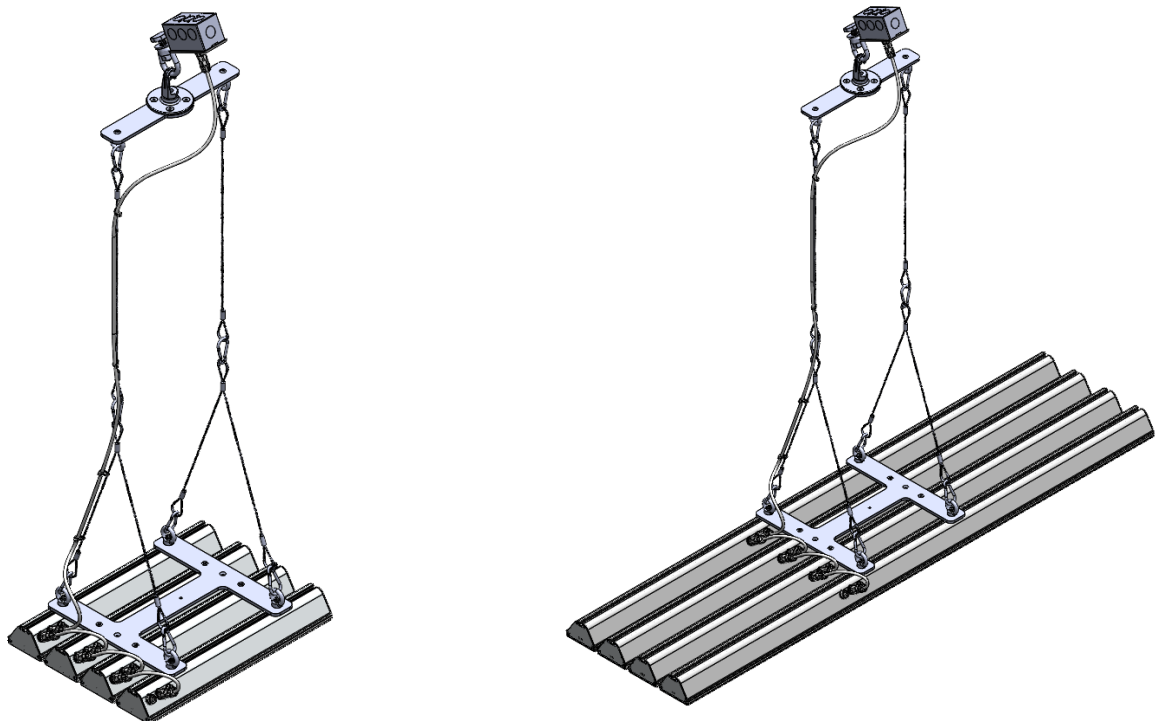
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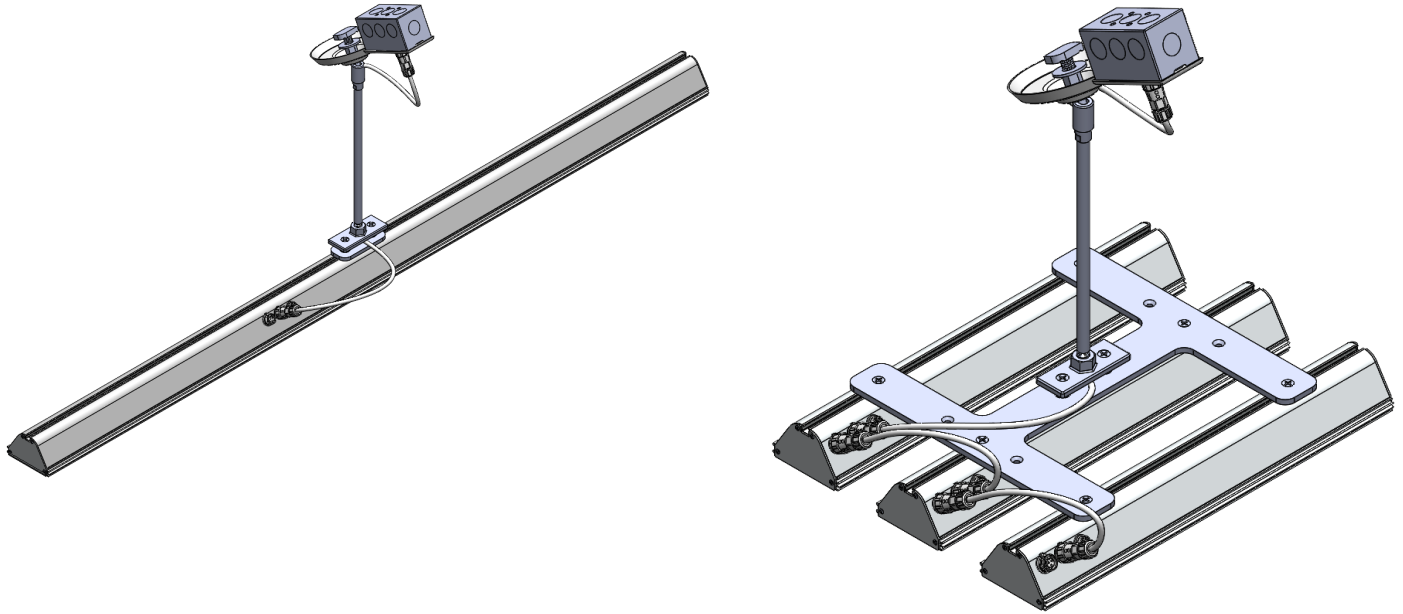
### CABLE OPTION 1



### CABLE OPTION 2



ROD OPTION 1



ROD OPTION 2

