

LEDERA

TECHNOLOGIES

www.lederatechnologies.com

MISSION

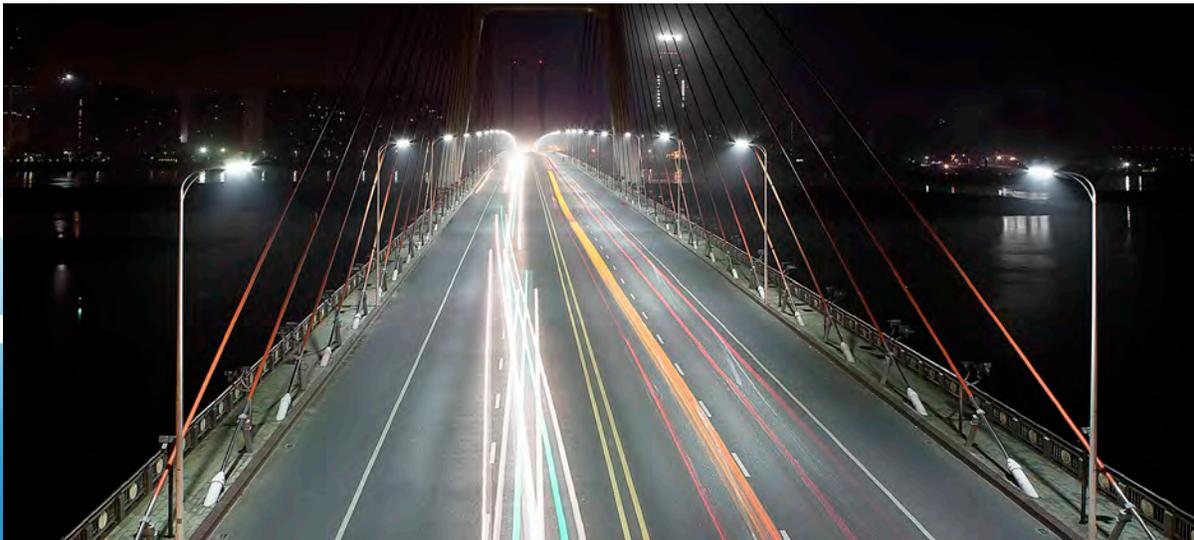
Ledera's mission is to provide the highest quality premium LED lighting available, while achieving unsurpassed customer satisfaction through superior service, performance, technology, environmental safety and response to customer needs.

VISION

Ledera's vision is to be a world-class leader in LED lighting. As a company that provides innovative, cost-effective, diversified high-quality products throughout North America, the strategy of hiring disabled American veterans to assemble and manufacture our products here in the USA benefits not only consumers, but also those who have sacrificed much to help their country. Ledera wants to be better than the best when it comes to LED lighting, while simultaneously providing environmentally superior products to an ever-evolving market.



MADE IN DETROIT... MADE BY VETERANS





- OPERATES AS A SERVICE DISABLED VETERAN OWNED BUSINESS
- OPERATIONS TO BE ESTABLISHED IN DETROIT, MICHIGAN USA INCLUDING:
 - MANUFACTURING
 - WAREHOUSING
 - DESIGN AND ENGINEERING
 - MARKETING SALES AND SERVICE
- EMPLOYING DISABLED AND FEMALE U.S. MILITARY VETERANS
- ISO 9001, UL AND DLC CERTIFIED ORGANIZATION



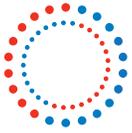
PRODUCT APPLICATIONS

- LED lighting has four basic market segments

- Roadway
- Industrial
- Commercial
- Residential

- Ledera will focus on:

- Roadway
 - o Highway lighting
 - o Intersections
 - o Bridges
 - o City Streets
 - o Road Repair
- Industrial
 - o Parking Lots
 - o Manufacturing and Assembly Plants
 - o Warehousing
- Commercial
 - o Restaurants
 - o Office Complex
 - o Hospitals
 - o Nursing Homes
 - o Parking Lots
 - o Emergency Lights
- Military and Government Applications
 - o Military Bases
 - o Military Ships and Planes
 - o Embassy
 - o Government Security
 - o Airports



PRODUCT APPLICATIONS ADVANTAGES OF LED LIGHTS

Environmentally Safe: No dangerous chemicals or UV, can be safely recycled

Reduced Heat: Unlike incandescent bulbs, where 90% of energy is wasted as heat which greatly reduces longevity, LEDs produce far less heat

Less Energy Consumption: LEDs reduce energy consumption from 50 - 70%

Shorter Payback: Paybacks on replacements are comparatively short, in addition to available credits and other incentives

Last Longer: 60,000 hour life, rated conservatively

Better Performance: Can focus light directionally better than incandescent or fluorescent bulbs



LEDERA PRODUCT ADVANTAGES

- **Ledera enjoys significant product advantages including:**

- **Lighting-related cost**

- o 70% - 90% cost reduction

- **Maintenance cost**

- o 90% Reduction

- **Reduced Energy consumption**

- o Equal amount of lighting at 10% - 15% of the power output

- **Sustainable**

- o Carbon footprint reduction

- **Reduction in noise and heat footprint**

- **Greater light per watt (Lumens per watt = Efficacy)**

- **Greatly increased longevity**

- o Ledera LEDs last 130,000 hours longer than Incandescent lights
or 10x longer than Fluorescent lights

LIGHTING COMPARISON CHART

Lighting Type	Efficacy (lumens/watt)	Lifetime (Hours)	Rendition Index (CRI)	Color Temperature (K)	Color Indoor/Outdoors
Fluorescent					
Straight Tube	30-110	7,000-24,000 (fair to good)	50-90 (warm to cold)	2,700-6,500	Indoors/outdoors
Compact Fluorescent	50-70	10,000	65-88 (good) (warm to cold)	2,700-6,500	Indoors/outdoors
Circline	40-50	12,000			Indoors
High-Intensity Discharge					
Mercury Vapor	25-60	16,000-24,000	50 (poor to fair) (warm to cold)	3,200-7,000	Outdoors
Metal Halide	70-115	5,000-20,000	70 (fair)	3,700 (cold)	Indoors/outdoors
High-Pressure Sodium	50-140	12,000	25 (poor)	2,100 (warm)	Outdoors
Low-Pressure Sodium	60-150	12,000-18,000	-44 (very poor)		Outdoors
Incandescent					
Standard "A"	10-17	750-2,500	98-100 (excellent) (warm)	2,700-2,800	Indoors/outdoors
Energy-Saving Incandescent (or Halogen)	12-22	1,000-4,000	98-100 (excellent)	2,900-3,200 (warm to neutral)	Indoors/outdoors
Reflector	12-19	2,000-3,000	98-100 (excellent)	2,800 (warm)	Indoors/outdoors
Light Emitting Diodes (LED)					
Cool White LEDs	60-92	25,000-50,000	70-90 (fair to good)	5,000 (cold)	Indoors/outdoors
Warm White LEDs	27-54	25,000-50,000	70-90 (fair to good)	3,300 (neutral)	Indoors/outdoors

Source: U.S. Department of Energy

LED's outperform other light sources

HIGH-PRESSURE SODIUM VS LED STREET LIGHTS

Criteria	High-Pressure Sodium Light - HPS	LED Street Light
Photometric Performance	Bad	Excellent
Radiator Performance	Bad	Excellent
Electric Performance	Electric Shock Easy (High Voltage)	Safe (Low Voltage)
Working Life	Short (5,000 hours)	Quite Long (>50,000 hours)
Working Voltage Range	Narrow ($\pm 7\%$)	Wide ($\pm 20\%$)
Power Consumption	Quite High	Quite Low
Startup Speed	Quite Slow (Over 10 minutes)	Rapid (2 seconds)
Strobe	Yes (Alternating Current Drive)	No (Direct Current Drive)
Optical Efficiency	Low	High
Color Index	Bad, Ra <50	Good, Ra >75
Color Temperature	Quite Low (Yellow Or Amber, Uncomfortable)	Ideal Color Temperature (Comfortable)
Bad Glare	Strong Glare (Dazzle)	No Harmful Glare
Light Pollution	Strong	No
Heating	Serious (>300°C)	Cold Light (<60°C)
Lampshade Turn Dark	Easy (Absorb Dust)	No (Static Proof)
Lamp Aging Turn Yellow	In A Short Time	No
Shockproof Performance	Bad (Fragile)	Good (No Filament or Glass)
Environment Pollution	Contains Lead Element, Etc.	No
Maintenance Cost	High	Quite Low
Product Cubage	Big	Small (Slim Appearance)
Product Weight	Heavy	Light
Cost-Effectiveness	Low	High
Integrated Performance	Bad	Excellent

Source: U.S. Department of Energy

LED: A Clear Winner

STREET LIGHTING TECHNOLOGY COMPARISON

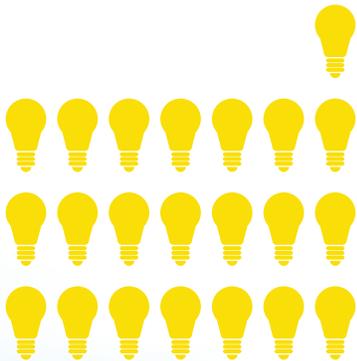
Light Technology	Lifetime	Lumens per Watt	Color Temperature	CRI (Color Rendering Index)	Ignition Time	Considerations
Incandescent	1.000 -5.000	11 - 15	2.800K	40	Instant	Very inefficient, short life time
Mercury Vapor	12.000 - 24.000	13 - 48	4.000K	15 - 55	up to 15 min	Very inefficient, ultraviolet radiation, contains mercury
Metal Halide	10.000 - 15.000	60 - 100	3.000-4.300K	80	up to 15 min	High maintenance, UV radiation, contains mercury and lead, risk of bursting at the end of life
High-pressure Sodium	12.000 - 24.000	45 - 130	2.000K	25	up to 15 min	Low CRI with yellow light, contains mercury and lead
Low-Pressure Sodium	10.000 - 18.000	80 - 180	1.800K	0	up to 15 min	Low CRI with yellow light, contains mercury and lead
Fluorescent	10.000 - 20.000	60 - 100	2.700-6.200K	70 - 90	up to 15 min	UV radiation, contains mercury, prone to glass breaking, diffused non-directional light
Compact Fluorescent	12.000 - 20.000	50 - 72	2.700-6.200K	85	up to 15 min	Low life / burnout, dimmer in cold weather (failure to start), contains mercury
Induction	60.000 - 100.000	70 - 90	2.700-6.500K	80	Instant	Higher initial cost, limited directionality, contains lead, negatively affected by heat
LED	50.000 - 100.000	70 - 150	3.200-6.400K	85 - 90	Instant	Relatively higher initial cost

**LED's higher initial cost offset by:
Lifespan • Energy Reduction • Low Maintenance**

NUMBER OF LAMPS TO FULFILL 20 MILLION LUMEN-HOURS

INCANDESCENT LAMP (IND)

60 Watt
900 Lumens
1,000 lifetime hours
~22 IND LAMPS



COMPACT FLUORESCENT LAMP (CFL)

15 Watt
900 Lumens
8,500 lifetime hours
~3 CFL LAMPS



LED LAMP

12.5 Watt
800 Lumens
25,000 lifetime hours
~1 LED LAMP





TOP TEN REASONS TO BUY LEDERA

LEDERA TECHNOLOGIES ENJOYS SIGNIFICANT PRODUCT ADVANTAGES INCLUDING:

1. A cost reduction of 70% - 90% in your lighting bill
2. Maintenance cost reduction of 60% - 90%
3. Low energy consumption
4. Carbon footprint reduction
5. Reduced noise
6. Reduced heat
7. More light per watt
8. Last longer: 5x vs best florescent lamp and 30x vs halogen lamps
9. Solid state: difficult to break
10. Toxicity: no mercury

www.lederatechnologies.com



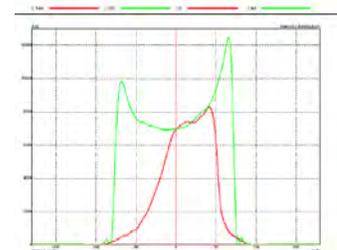
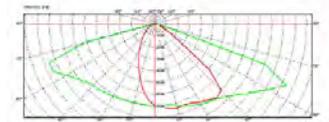
LED STREET LAMP

T_j < 75°C
IP65
-35°C – 65°C
50000H

Model No.	Input Voltage	Power Consumption (W)	LED	Lumens	CCT	CRI	Dimensions (in.)
LT-RG150-39	AC 90-264	150	XML	12750	5000K	70	32.7x12.6x4.2
LT-RG200-01	AC 90-264	200	XML	17000	5000K	70	32.7x12.6x4.2
LT-RG250-01	AC 90-264	250	XML	21250	5000K	70	32.7x12.6x4.2
LT-RG300-01	AC 90-264	300	XML	25500	5000K	70	32.7x12.6x4.2
LT-RG100-40	AC 90-264	100	XTE	9000	5000K	70	32.7x12.6x4.2
LT-RG150-40	AC 90-264	150	XTE	13500	5000K	70	32.7x12.6x4.2
LT-RG200-02	AC 90-264	200	XTE	18000	5000K	70	32.7x12.6x4.2
LT-RG250-02	AC 90-264	250	XTE	22500	5000K	70	32.7x12.6x4.2
LT-RG300-02	AC 90-264	300	XTE	27000	5000K	70	32.7x12.6x4.2
LT-RG150-37	AC 90-264	150	XML	12750	5000K	70	26.4x12.6x4.2
LT-RG100-09	AC 90-264	100	XTE	9000	5000K	70	26.4x12.6x4.2
LT-RG150-38	AC 90-264	150	XTE	13500	5000K	70	26.4x12.6x4.2

Features:

- High-power Cree LEDs
- More than 60% energy savings
- Honeycomb structure, good performance and advanced thermal management
- Modular design
- Unique and patented optical lens with asymmetric bat-wing light distribution
- Luminaire efficiency of 107 lumens/watt
- Die-cast aluminum body surface with anti-corrosive treatment





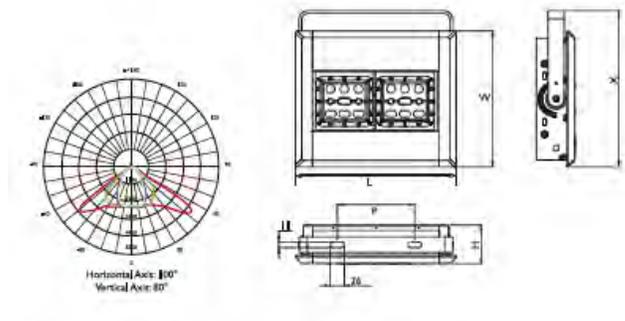
LED CHIP-ON-BOARD

$T_j < 75^{\circ}\text{C}$ IP65 $-35^{\circ}\text{C} - 50^{\circ}\text{C}$ 50000H

Model No.	Input Voltage	Power Consumption (W)	LED	Lumens	CCT	CRI	Dimensions (in.)
LT-TB050-B1	AC 90-264	50	XML	4250	5000K	70	11.9x11.5x2.8
LT-TB080-B1	AC 90-264	80	XML	6800	5000K	70	16.4x11.5x2.8
LT-TB100-B1	AC 90-264	100	XML	8500	5000K	70	11.9x16.5x3.1
LT-TB120-B1	AC 90-264	120	XML	10200	5000K	70	14.3x16.5x3.1
LT-TB160-B1	AC 90-264	160	XML	13600	5000K	70	16.4x16.5x3.1
LT-TB200-B1	AC 90-264	200	XML	17000	5000K	70	21.4x16.5x3.1

Features:

- High-power Cree LEDs
- Energy savings up to 70%
- Modular design; easy to install and maintain
- Adjustable lighting angle
- Die-cast aluminum body surface with anti-corrosive treatment





LED PANEL LIGHT

IP43

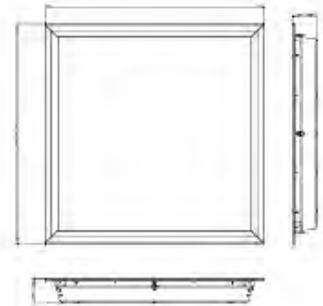
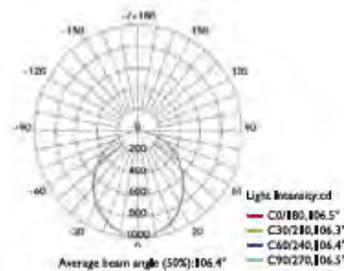
-10°C - 40°C

50000H

Model No.	Input Voltage	Power Consumption (W)	LED	Lumens	CCT	CRI	Dimensions (in.)
LT-FX835-B1/B2	AC 100-240	35	SMD3014	2800	3000K/5000K	70	23.6x23.6x2.5
LT-FX835-83/84	AC 100-240	35	SMD3014	2800	3000K/5000K	70	25.3x25.3x2.5
LT-GDS-6060-LP	AC 100-240	42	t/c	t/c	6050K/6650K	t/c	23.6x23.6x0.5

Features:

- Energy savings up to 50%
- Various sizes
- No mercury, no UV; environmentally friendly
- 50,000 hours lifetime
- Applications: home, office, warehouse, retail, hotel, library, showroom, lobby, etc.





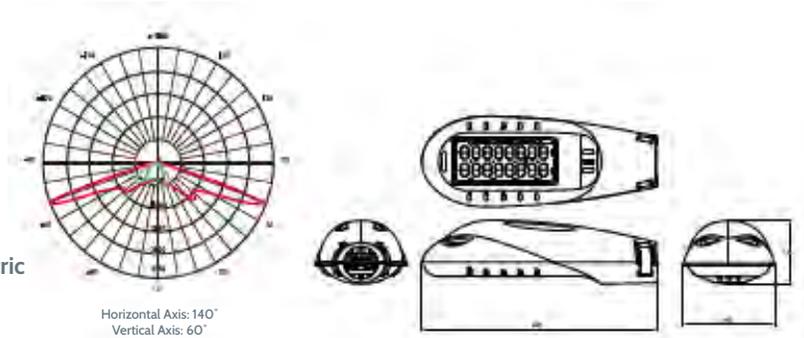
30W LED STREET LIGHT

$T_j < 75^{\circ}\text{C}$ IP65 $-35^{\circ}\text{C} - 50^{\circ}\text{C}$ 50000H

Model No.	Input Voltage	Power Consumption (W)	Power Factor	Lighting Source	Lumens (lm)	CCT	CRI	Dimensions (in.)
LT-RE025-B1	AC 90-264	25	>0.95	12x1	2000	4000K-6000K	70	16.6x6.5x4.5
LT-RE030-B1	AC 90-264	30	>0.95	16x1	2400	4000K-6000K	70	16.6x6.5x4.5

Features:

- High-power Cree LEDs (XTE)
- More than 60% energy savings
- Honeycomb structure, good performance and advanced thermal management
- Modular design; tool-free on-site maintenance
- Unique and patented optical lens with asymmetric bat-wing light distribution
- Luminaire efficiency over 93%





30W FLOOD LIGHT

T_j < 75°C
IP65
-35°C – 50°C
50000H

Model No.	Input Voltage	Power Consumption (W)	Power Factor	Lighting Source	Lumens (lm)	CCT	CRI	Dimensions (in.)
LT-FA050-B1	AC 90-264	50	>0.95	4x2	4250	4000K-6000K	70	11.9x10x2.8
LT-FA080-B1	AC 90-264	80	>0.95	4x3	6800	4000K-6000K	70	16.4x10x2.8
LT-FB100-B1	AC 90-264	100	>0.95	4x4	8500	4000K-6000K	70	21.4x10x2.8
LT-FB160-B1	AC 90-264	160	>0.95	4x6	13600	4000K-6000K	70	16.4x14.8x3.1
LT-FB200-B1	AC 90-264	200	>0.95	4x8	17000	4000K-6000K	70	21.4x14x8x3.1

Features:

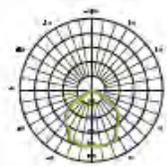
- High-power Cree LEDs (XML)
- Energy savings up to 70%
- Modular design
- Three types of light distribution for different needs
- Multi-function light



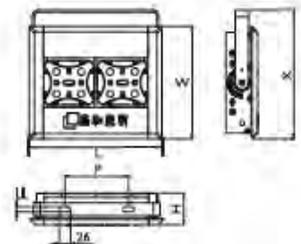
Horizontal Axis: 30°
Vertical Axis: 30°



Horizontal Axis: 60°
Vertical Axis: 60°



Horizontal Axis: 110°
Vertical Axis: 110°





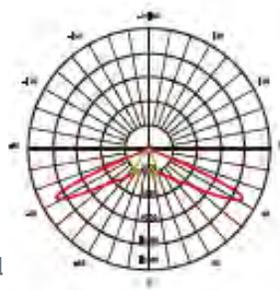
LED MODULE LIGHT

T_j < 75°C
IP65
-35°C - 50°C
50000H

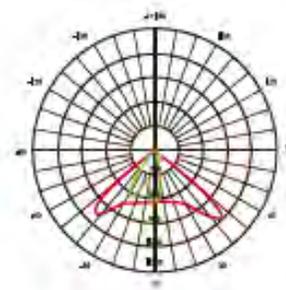
Model No.	Input Voltage	Power Consumption (W)	Lighting Source	Lumens (lm)	CCT	CRI	Dimensions (in.)
LT-PA016-C1	AC 90-264	30	12x1	2400	4000K-6000K	70	7.8x3.8x6.0
LT-PA016-Y1	DC 24	25	12x1	2125	4000K-6000K	70	7.8x3.8x6.0

Features:

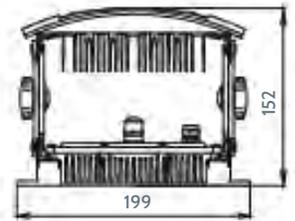
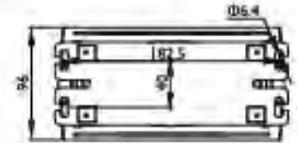
- High-power Cree LEDs (XML)
- Multi-functional modular light
- Adjustable light angle
- Aluminum heatsink with plastic cover for good heat dissipation
- Can be combined with solar panel



Horizontal Axis: 130°
Vertical Axis: 60°



Horizontal Axis: 100°
Vertical Axis: 40°





LED OVERHEAD LIGHT

IP43

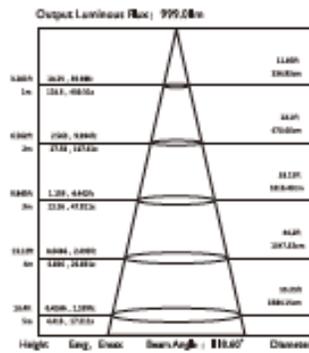
-10°C-50°C

50000H

Model No.	Input Voltage	Power Consumption (W)	Lighting Source	Lumens (lm)	CCT	CRI	Dimensions (in.)
LT-DDB03-B1	AC 185-264	9	120	765	5000K	75	12.3x4.8x3.7
LT-DDB06-B1	AC 185-264	18	240	1530	5000K	75	24.1x4.8x3.7
LT-DDB09-B1	AC 100-240	27	360	2295	5000K	75	35.9x4.8x3.7
LT-DDB12-B1	AC 100-240	36	480	3060	5000K	75	47.8x4.8x3.7

Features:

- Energy savings up to 50%
- High efficiency
- Dimmable; motion sensor available
- Easy installation; suspending and recessing available
- 50,000 hours lifetime



LT-DDB03-B1



LT-DDB06-B1



LT-DDB09-B1



LT-DDB12-B1





LED TUBE LIGHT

IP43

-10°C-40°C

25000H

Model No.	Input Voltage	Power Consumption (W)	Lighting Source	LED	Lumens (lm)	CCT	CRI	Dimensions (in.)
LT-T8F06-B1/B2	AC 100-240	9	3014	88	750	3000K-5000K	70	23.6x1.3
LT-T8F09-B1/B2	AC 100-240	13	3014	132	1100	3000K-5000K	70	35.7x1.3
LT-T8F12-B1/B2	AC 100-240	18	3014	176	1600	3000K-5000K	70	47.6x1.3
LT-T8F12-B3/B4	AC 100-240	18	2835	320	2340	3000K-5000K	70	47.6x1.3

Features:

- High-quality LED with long lifespan
- Aluminum back for heatsink of LEDs
- No mercury, no UV; environmentally friendly
- 30,000 hours lifetime

