



LED (Light Emitting Diodes) Street Lights



Introduction to LED's:

LED (Light Emitting Diodes) lights can be constructed of many micro-elements to select a mix of wavelengths, or use a phosphor coating to stimulate a range of wavelengths. LED units are selected for street lights to enhance visibility more effectively than with traditional low pressure sodium lamps.

The long life of LED lighting means that lamp changing and lamp failures are a thing of the past. LED lighting life is up to 100,000 hours (appx. 25 years), are extremely reliable and no routine maintenance is required to ensure continued performance.

LED's are energy efficient and environmental benefits are huge when combining LED's with solar technology.

Main Applications:

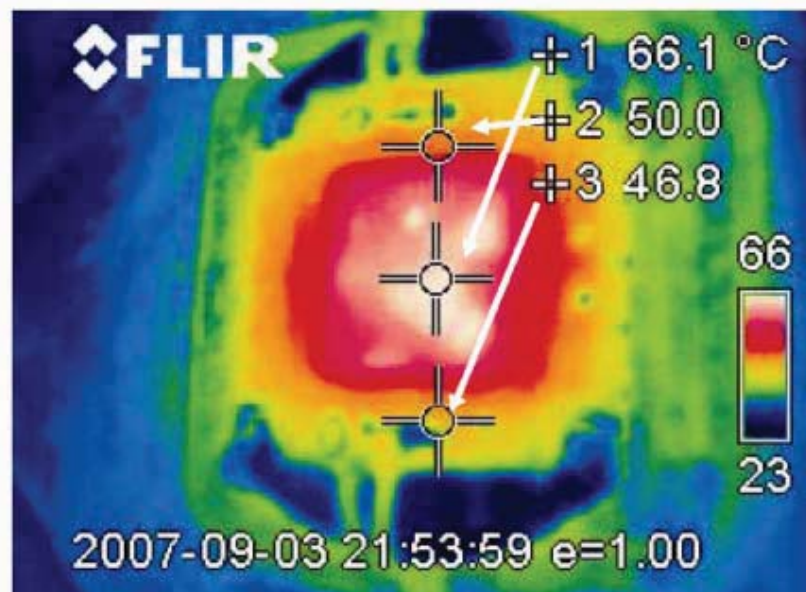
- Area Lighting
- Airport Lighting
- Hospital Parking
- Parks and Playground Lighting
- Parking Lot Lighting
- High Way Road Way Lighting
- Street Lighting
- Security Light
- Highway and Ramp Lighting
- Bridge Lighting
- Under Pass Lighting
- Residential, Industrial, Commercial Lighting



Materials of the LED Street Lights

- High Efficiency Imported LED Driver
(Imported high brightness semi-conductor chips)
- Powerful LED Light Source
(With the characters of high heat conductivity and high lumen output. Offering eight times more brightness than incandescent lamps and a 70% saving over conventional sodium or mercury lamps)
- High Intensity Tempered Glass with Anti-Reflecting Coating
(4 to 5 times stronger than ordinary glass in anti-curve intensity, anti-impact intensity and heat stability, prevent glare and ultraviolet radiation. Dust, moisture and etching resistancy)
- High-purity Aluminium Reflector, light housing and Heat sink
(heat dissipation wing and also by the air cross-ventilation. It ensures a 50000 hours life-span of LED)

Surface Temperature Distribution of 100W LED Streetlight



Led chip center max temperature: 66°C

Outer most Temperature: 23°C



Advantages of LED Street Lights

- Withstands 160 MPH winds
- Shock and vibration resistant
- Environmentally friendly:
 - Eliminate unsafe hazardous disposal of current Lights
 - No Light pollution
 - Substantial energy saving and reduction of Carbon Footprint
- Immediate start. No "cold-start" problems; no ballast
- Water- and Weather-proof design
- Better visibility with excellent Lumen efficiency using white light
- High color rendition near natural color
- Investment should have paid for itself within 3 years of operation
- Solar Panel compatible

LED equivalent to High Pressure Sodium/Mercury Lights

LED Street Light	High Pressure Sodium/Mercury Light
30w	80w
60w	170w
100w	2500w
140w	400w

How to match the right Pole Height with LED Strength

Comparison Table Design of Road Lighting (recommended) and Ground Illuminance

	Pole height (meter)	LED light power	Distance between pole (meter)	Max (Illumination) LUX	Average Lux
Solar Street Light / Common Street Light	4m	15w	12-18m	25	18
	5m	18w	14-20m	30	18
	6m	30w	18-24m	32	20
	7m	50w	21-28m	32	20
Common Street Light	8m	100w	24-32m	40	22
	9m	110w	27-35m	34	20
	10m	140w	30-40w	35	22
	12m	180w	30-40w	33	23
	14m	200w	30-40w	30	21



LED Model: JB720

Model : JB720LD
 Power: 30w to 100w (100w ~ equal to 250w Sodium lamp)
 Power Efficiency: >90%
 Voltage : AC (85V ~ 265V) / DC 12V 24V 36V
 Luminous Efficiency: 80lm/watt
 Frequency: 50 ~ 60Hz
 Effective Beam Angle: 65 Degrees
 Color Rendering Index : Ra > 80
 Color Temperature : 2700K ~ 7000K
 Life Span : > 50000hours
 Protection Degree: IP 65
 Certification: CE, ROHS
 Net Weight (kg) : 9.56kg
 Size: 720*320*250



Materials:

- High-purity aluminium reflector, light housing and heat sink
- High intensity tempered glass
- High powerful LED light source
- High efficiency imported LED driver

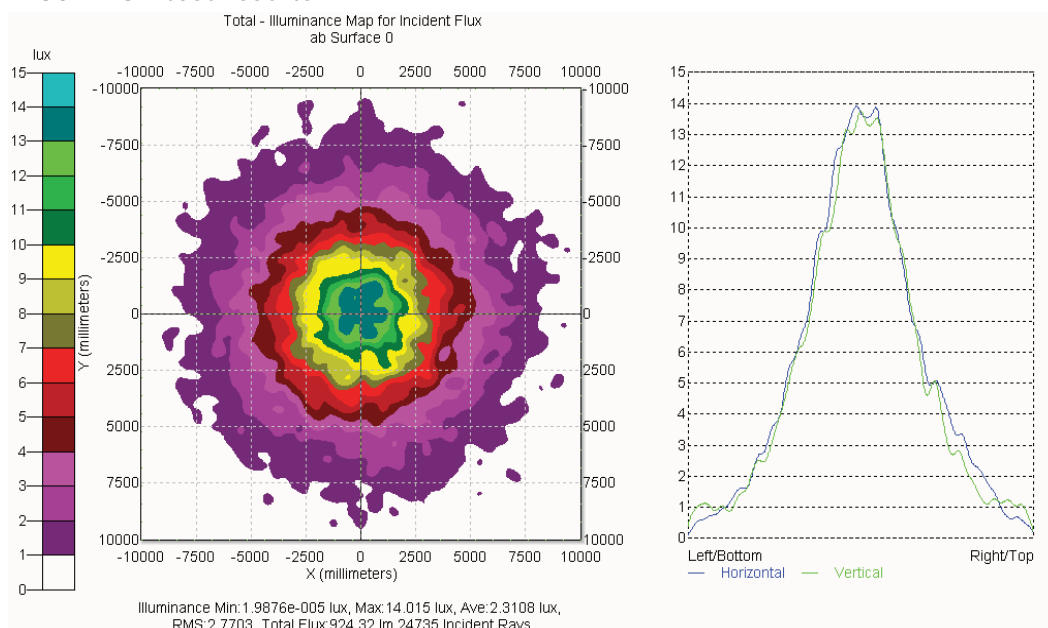
Features:

- Single/Dual high power LED
- Effective heat conductivity
- Operates in high humidity
- Instant start
- High colour rendering Ra>80
- Easy and flexible installation
- Mercury and lead free
- Solar panel compatible

Usage:

City streets, pavements, squares, schools, parks, yards, inhabitancy area, factories, etc.

JB720LD 30w LUX test results:





LED Model: JB920

Model : JB920LD
 Power: 30w to 120w (100w ~ equal to 250w Sodium lamp)
 Power Efficiency: >90%
 Voltage : AC (85V ~ 265V) / DC 12V 24V 36V
 Luminous Efficiency: 80lm/watt
 Initial luminous Flux: 2400lm (30w) - 9600lm (120w)
 Frequency: 50 ~ 60Hz
 Effective Beam Angle: 65 Degrees
 Color Rendering Index : Ra > 80
 Color Temperature : 2700K ~ 7000K
 Life Span : > 50000hours
 Protection Degree: IP 65
 Certification: CE, ROHS
 Net Weight (kg) : 9.7kg



Materials:

- High-purity aluminium reflector, light housing and heat sink
- High intensity tempered glass
- High powerful LED light source
- High efficiency imported LED driver

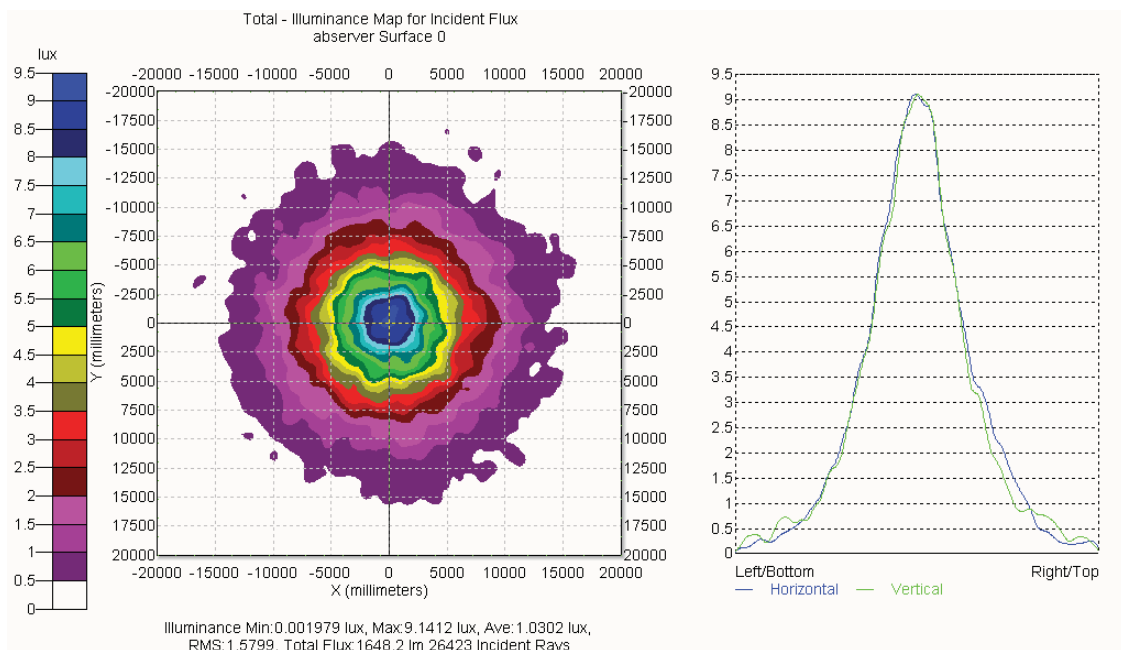
Usage:

City streets, pavements, squares, schools, parks, yards, inhabitancy area, factories, etc.

Features:

- Single/Dual high power LED
- Effective heat conductivity
- Operates in high humidity
- Instant start
- High purity aluminium reflector
- Similar to Sunlight, minimal glare
- Environmentally friendly
- UV and corrosion resistant
- Solar panel compatible
- Up to 70% lower energy consumption

JB920LD 50w LUX test results:





LED Model: JB7235

Model : JB7235LD
 Power: 10w, 15w, 18w, 20w, 25w, 30w, 35w, 40w
 Power Efficiency: >90%
 Voltage : AC (85V ~ 265V) / DC 12V 24V 36V
 Luminous Efficiency: 80lm/watt
 Initial luminous Flux: 800lm (10w) - 3200lm (40w)
 Frequency: 50 ~ 60Hz
 Effective Beam Angle: 70 Degrees
 Color Rendering Index : Ra > 80
 Color Temperature : 2700K ~ 7000K
 Life Span : > 50000hours
 Protection Degree: IP 65
 Certification: CE, ROHS
 Net Weight (kg) : 6.5kg



Materials:

- High-purity aluminium reflector, light housing and heat sink
- High intensity tempered glass
- High powerful LED light source
- High efficiency imported LED driver

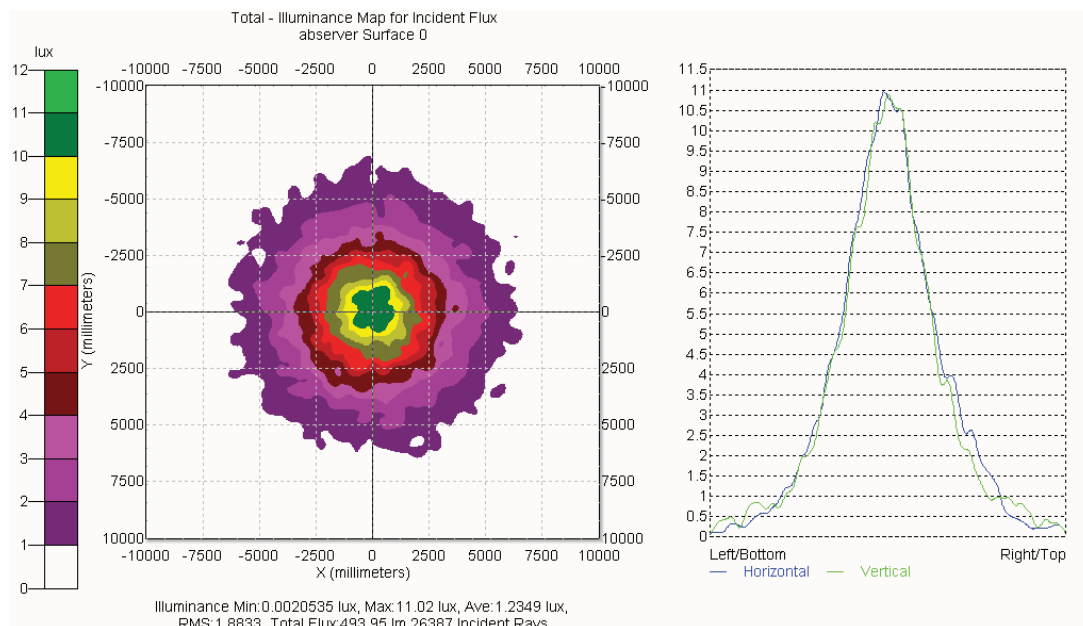
Usage:

City streets, pavements, squares, schools, parks, yards, inhabitancty area, factories, etc.

Features:

- Single/Dual high power LED
- Effective heat conductivity
- Operates in high humidity
- Instant start
- High colour rendering Ra>80
- Easy and flexible installation
- UV and corrosion resistant
- Mercury and lead Free
- Solar panel compatible
- Low energy consumption, can save up to 70%

JB7235LD 15w LUX test results:





LED Model: JB5324

Model : JB5324LD
Power: 10w, 15w, 18w, 20w, 25w, 30w
Power Efficiency: >90%
Voltage : AC (85V ~ 265V) / DC 12V 24V 36V
Luminous Efficiency: 80lm/watt
Initial luminous Flux: 800lm (10w) - 2400lm (30w)
Frequency: 50 ~ 60Hz
Effective Beam Angle: 70 Degrees
Color Rendering Index : Ra > 80
Color Temperature : 2700K ~ 7000K
Life Span : > 50000hours
Protection Degree: IP 65
Certification: CE, ROHS
Net Weight (kg) : 4kg

Materials:

- High-purity aluminium reflector, light housing and heat sink
- High intensity tempered glass
- High powerful LED light source
- High efficiency imported LED driver

Usage:

City streets, pavements, squares, schools, parks, yards, inhabitancy area, factories, etc.



Features:

- Uses 2 units of single high power LED (10w - 20w) as light source
- No abrupt and frequent flashes
- Operates in high humidity
- Instant start
- Monomer ellipse reflector with spheroid cambered surface
- Easy and flexible installation
- UV and corrosion resistant
- No ill glare
- Solar panel compatible
- Low energy consumption, can save up to 70%

No LUX test results available at this time



LED Model: JB1200

Model : JB1200LD
 Power: 140w, 160w, 180w, 200w
 Power Efficiency: >90%
 Voltage : AC (85V ~ 265V) / DC 12V 24V 36V
 Luminous Efficiency: 80lm/watt
 Initial luminous Flux: 11200lm (140w) - 16000 lmlm (200w)
 Frequency: 50 ~ 60Hz
 Effective Beam Angle: 65 Degrees
 Color Rendering Index : Ra > 80
 Color Temperature : 2700K ~ 7000K
 Life Span : > 50000hours
 Protection Degree: IP 65
 Certification: CE, ROHS
 Net Weight (kg) : 20.7kg



Materials:

- High-purity aluminium reflector, light housing and heat sink
- High intensity tempered glass
- High powerful LED light source
- High efficiency imported LED driver

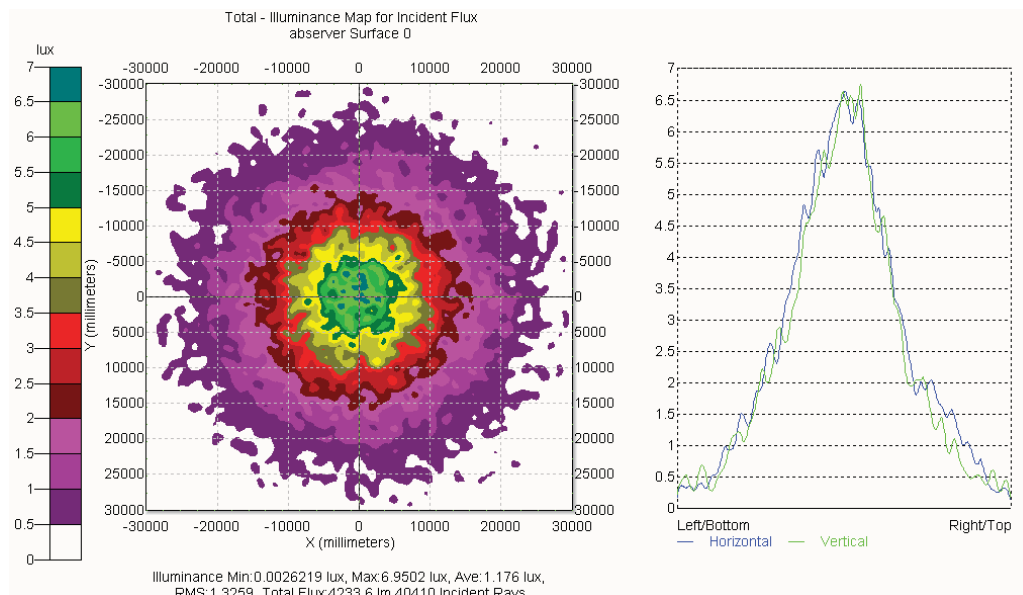
Usage:

City streets, squares, junctions, roundabouts

Features:

- Uses 2 units of single high power LED (30w - 100w) as light source
- No abrupt and frequent flashes
- Operates in high humidity
- Instant start
- Monomer ellipse reflector with spheroid cambered surface
- Easy and flexible installation
- UV and corrosion resistant
- No ill glare
- Solar panel compatible
- Low energy consumption, can save up to 70%

JB1200 140w LUX test results:





Cost Comparison over 6 Years

(Amounts used in US\$ are for illustration purposes only)

100w LED Street Light (US\$)

250w High pressure Sodium/Mercury Light (US\$)

Year	Initial Cost of Light	Electricity Comsumption	Maintenance Cost	Total Cost of LED Light	Initial Cost of Light	Electricity Comsumption	Maintenance Cost	Total Cost of LED Light
1	570	35	0	605	175	87	0	262
2		35	0	640		87	102	451
3		35	0	675		87	102	640
4		35	0	710		87	102	829
5		35	0	745		87	102	1018
6		35	0	780		87	102	1207

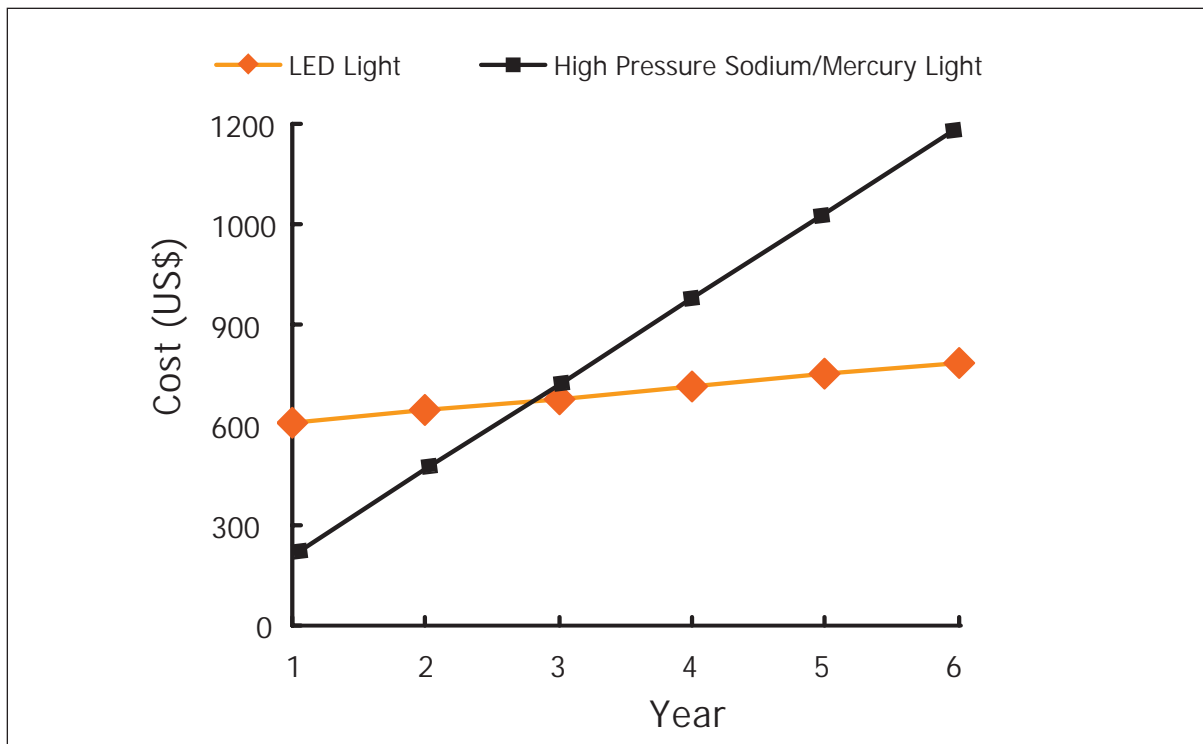


Illustration shows that: a. LED has paid for itself in just over 3 years
 b. Massive savings are made from the 4th year



Basic Concept of Photometry

SI Photometry Units

Quantity	Symbol	SI unit	Abbr.	Notes
Luminous energy	Q_v	lumen second	lm·s	units are sometimes called talbots
Luminous flux	F	lumen (= cd·sr)	lm	also called 'luminous power'
Luminous intensity	I_v	candela (= lm/sr)	cd	an SI base unit
Luminance	L_v	candela per square metre	cd/m ²	units are sometimes called nits
Illuminance	E_v	lux (= lm/m ²)	lx	Used for light incident on a surface
Luminous emittance	M_v	lux (= lm/m ²)	lx	Used for light emitted from a surface
Luminous efficiency		lumen per watt	lm/W	ratio of luminous flux to radiant flux maximum possible is 683.002 lm/W

Concept of LUX

