



Aviation Obstruction Light Product Line

International civil aviation authorities set requirements for obstruction lighting equipment used to increase conspicuity of structures to ensure early obstruction recognition by pilots.



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About us

Design, Quality and Value have made LANSING Lighting the partner of choice in the lighting industry over the past few years. LANSING products are built to last long, achieved through a high degree of craftsmanship, with lighting engineering experience.

Established in the year 2009, at Shanghai, China. We, "LANSING" are Specialized Manufacturer of Aviation Obstruction Lights conforming international standards (CAA, ICAO), to avoid Air accidents cause immense loss to human life and property. History is witness to innumerable air disasters. Accidents can be avoided by small precautions. Amongst various measures, visual aids are of immense importance in creating a safer sky. Tall, man-made structures and other geographical obstructions pose threat to airplanes in poor visibility. Low flying aircraft, in spite of the modern navigational facilities on board, need prominent obstruction markings in their flight paths. These markings should be loud and clear to attract the pilot's attention.

we have a Complete Industrial LED Lighting Solutions, Our main product included **Aviation Obstructionlights, Control Panel for aviation lights, Navigation Lights Portable Airfield Light, Helipad Light, Accessories, industrial Lighting.**

The Entire product range is designed and fabricated by our expert team of professionals, who have strong technical and business skills. With the support of modern infrastructure and well qualified team, we are able to provide customized lighting products in the market. Satisfying the client's precise needs has been our foremost priority and we have formulated competitive price policy to meet this objective. We at "LANSING" Believe in strengthen our Team & resources and detail R&D engineering which enable us to know how to work with attention on the quality of details, customized solutions, customer care and support. Our offered products are widely used in telecommunication network, harbor, wind turbine, production factories etc. industries.

There are many outstanding features that define LANSING brand: Customized solutions, reliability, Performance, Quality with Competitive price. This defines our USP (unique selling proposition).

Our goal

LANSING focus on R&D and dedicate to provide state-of-the-art product for our customer.

Our advantage

Deep understanding on technologies that our product require Absolutely following rules & regulations in the industry we are serving

Our value

- Dedication
- Candor
- Eager for action
- Continuous change



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ICAO

Introduction

Aviation Obstruction light is a product to warn aircraft potential danger from above ground-level structures like tower, smokestack, tall building, etc. In some cases, it's also called Aircraft Warning Light (AWL). When it comes with controller to realize extra functions like alarm signal sending, Flash synchronizing, and auto switch on at night, etc, it can also be called Aircraft Warning Light System (AWLS).

Regulations

- ICAO & FAA are two major international authorities that regulate obstruction light industry.
- ICAO – International Civil Aviation Organization
- FAA – Federal Aviation Authority

Some quote from ICAO Annex 14, chap. 6

6.1 The marking and/or lighting of obstacles is intended to reduce hazards to aircraft by indicating the presence of the obstacles. It does not necessarily reduce operating limitations which may be imposed by an obstacle.

6.3.1 The presence of objects which must be lighted, as specified in 6.1, shall be indicated by low-, medium- or high-intensity obstacle lights, or a combination of such lights.

6.3.2 Recommendation.— low-intensity obstacle lights, type A or B, should be used where the objects is a less extensive one and its height above the surrounding ground is less than 45m.

6.3.7 Recommendation.— medium-intensity obstacle light, type A, B or C, should be used where the object is an extensive one or its height above the level of the surrounding ground is greater than 45 m. medium-intensity obstacle lights, Types A and C, should be used alone, whereas medium-intensity obstacle lights, Type B, should be used either alone or in combination with low-intensity obstacle lights, Type B.

ICAO Annex 14, chap. 6, Table6-3. Characteristics of obstacle lights

Light Type	Color	Signal type (Flash rate)	Peak intensity (cd) at given Background Luminance			
			Above 500cd / m ²	50-500cd / m ²	Below 50 cd / m ²	Vertical Beam Spread (c)
Low-intensity, Type A (fixed obstacle)	Red	Fixed	N/A	10 mnm	10 mnm	10°
Low-intensity, Type B (fixed obstacle)	Red	Fixed	N/A	32 mnm	32 mnm	10°
Low-intensity, Type C (mobile obstacle)	Yellow Blue (a)	Flashing (60-90 fpm)	N/A	40 mnm (b) 400 max	40 mnm (b) 400 max	12° (h)
Low-intensity, Type D Follow-me Vehicle	Yellow	Flashing (60-90 fpm)	N/A	200 mnm (b) 400 max	200 mnm (b) 400 max	12° (i)
Medium-intensity, Type A	White	Flashing (20-60 fpm)	20 000 (b) ±25%	20 000 (b) ±25%	2 000 (b) ±25%	3° mnm
Medium-intensity, Type B	Red	Flashing (20-60 fpm)	N/A	N/A	2 000 (b) ±25%	3° mnm
Medium-intensity, Type C	Red	Fixed	N/A	N/A	2 000 (b) ±25%	3° mnm
High-intensity, Type A	White	Flashing (40-60 fpm)	200 000 (b) ±25%	20 000 (b) ±25%	2 000 (b) ±25%	3° -7°
High-intensity, Type B	White	Flashing (40-60 fpm)	100 000 (b) ±25%	20 000 (b) ±25%	2 000 (b) ±25%	3° -7°



FAA

Applicable FAA Advisory Circulars

- AC 150/5345-43E Specification for Obstruction Lighting equipment
- AC 70/7460-1 Obstruction Marking and Lighting
- AC 150/5345-53 Airport Lighting Equipment Certification Program

Some quote from FAA AC 150/5345-43E

1.2 Equipment Classification

Type	Description
L-810	Steady-burning red obstruction light
L-856	High in tensity flashing white obstruction light, 40 Flashes Per Minute (FPM)
L-857	High intensity flashing white obstruction light, 60 FPM
L-864	Flashing red obstruction light, 20-40 FPM
L-865	Medium intensity flashing white obstruction light, 40 FPM
L-866	Medium intensity flashing white obstruction light, 60 FPM
L-885	Flashing red obstruction light, 60 FPM

3.3.5.2.2 Monitoring.

Each separate L-864 light unit and each tier of L-810 light units shall be monitored for FLASH/FAIL status. FAIL is defined as outage of any lamp in an L-864 light unit, outage of any one lamp in a tier of L-810 light units, or failure of a flasher (steady on and/or total) for an L-864 light unit. Monitor signals shall be fail safe (i.e., active signals for FLASH and absence of signals for FAIL). There shall be a provision to permit connection to a remote alarm device, (supplied by others or as an option) to indicate FLASH/FAIL status.

Some quote from FAA AC 70/7460-1K

Chapter 5, 51.b.

Double Obstruction Light. A double (L-810) light should be installed when used as a top light, at each end of a row of single obstruction lights, and in areas or locations where the failure of a single unit could because an obstruction to be totally unlighted.

Chapter 5, 52. CONTROL DEVICE

Red obstruction lights should be operated by a satisfactory control device (e.g., photo cell, timer, etc.) adjusted so the lights will be turned on when the northern sky illuminance reaching a vertical surface falls below a level of 60 foot-candles (645.8 lux) but before reaching a level of 35 foot-candles (367.7 lux). The control device should turn the lights off when the northern sky illuminance rises to a level of not more than 60 foot-candles (645.8 lux). The lights may also remain on continuously. The sensing device should, if practical, face the northern sky in the Northern Hemisphere. (See AC 150/5345-43.)



ICAO Recommendation And Practice Over Various Applications

Tower



Height	Night only operation	Day and Night
Below 45 meters	Plan A: 2 low intensity type A or B at the top Plan B: 2 low intensity type B at the top 3 low intensity type B at intermediate level(s) every 45 meters on the periphery of the tower	
45 m. up to 105 meters	Plan A: 2 low intensity type B at the top 3 low intensity type B at intermediate level(s) every 45 meters on the periphery of the tower. Plan B: 1 or 2 medium intensity lights type B at the top. 3 low intensity lights type B at intermediate levels at 120° Plan C: medium intensity type A or C, use alone	1 or 2 white medium intensity type A at the top.
Above 105 meters	1 or 2 medium intensity lights type B at the top. 3 low intensity lights type B at intermediate levels at 120° .	1 or 2 white medium intensity type A (white) at the top. 3 medium intensity type A at intermediate levels.
Above 150 meters	3 high intensity lights at 120° every 150 meters.	

Tall buildings



Height	Night only operation	Day and Night
Below 45 meters	Low intensity type A or B lights at each edge of building and at regular interval every 45 meters.	
Above 45 meters	Plan A: Low intensity type A or B lights at each edge of building and at regular interval every 45 meters. Intermediate lights every 45 meters. Plan B: medium intensity type B lights at each edge of building and at regular interval every 45 meters. Low intensity light at intermediate level, every 45 meters.	1 or 2 white medium intensity type A (white) at the top. In case of a building exceeding 900 m. length, additional lights should be installed at the edge of the building.

Wind turbines



Night only operation	Day and Night
1 or 2 medium intensity type B (red) located on the top of the turbine. In case of a group of windmills, additional lights at the circumference of the farm every 450m and synchronized.	1 or 2 medium intensity type A (white) located on the top of the turbine. In case of group of windmills, additional lights at the circumference of the farm every 900m and be synchronized.

Cranes



Height	Night only operation	Day and Night
Below 45 meters	3 low intensity type A or B lights on the jib, counter jib and crane-top.	
45 meters up to 105 meters	3 medium intensity lights type B at the top on the jib, counter jib and crane-top. 3 low intensity lights type B at the intermediate levels.	1 or 2 white medium intensity type A (white) on the crane-top. In case of more than one crane, additional lights should be installed and synchronized.
Above 105 meters	1 or 2 red medium intensity type B on the crane-top. In case of more than one crane additional lights should be installed and synchronized	1 or 2 red medium intensity type A on the crane-top. In case of more than one crane, additional lights should be installed and synchronized.
Above 150 meters	3 high intensity lights on the crane top	

Chimney



Height	Night only operation	Day and Night
Below 45 meters	3 up to 4 low intensity type A lights placed 1,5 meters up to 3 meters below the top to avoid smokes to hide the lights.	
45 meters up to 105 meters	3 up to 4 medium intensity type B lights placed 1.5 meters up to 3 meters below the top. 3 up to 4 low intensity type B lights at intermediate level(s) 45m.	3 up to 4 white medium intensity lights type A placed 1.5 meters up to 3 meters below the top.
Above 105 meters	3 up to 4 medium intensity type B (red) placed 1.5 meters up to 3 meters below the top. 3 up to 4 low intensity type B every 45m.	3 up to 4 white medium intensity lights type A placed 1.5 meters up to 3 meters below the top. 3 up to 4 white medium intensity lights type A at intermediate levels.
Above 150 meters	3 high intensity lights at 120° every 150 meters.	

Transmission lines



	Night only operation	Day and Night
Tower light	2 low intensity type A or B lights at the top of each tower.	



Low Intensity

- DL10
- DL32
- DL50
- DL100
- DL200

DL10 LED Based Low Intensity Obstruction Light

LANSING DL10 series is typically a standard LED Obstruction light designed for airway fixed obstacle marking application. It comply with ICAO regulation, low intensity, type A. Working mode is steady burning.

DL10 Series Double Light

Double light is integrated by 2 single Light (working + stand-by). If works with control panel, it will auto-switch the "stand-by" light on when the "working" light fails, which makes sure that there is always a light working a top of the tower.

Features

- Special optical design provides better light distribution
- LED light source ensures long lifetime, maintenance free
- Low power consumption
- Shock and vibration resistant
- Corrosion resistant and UV stable polycarbonate housing
- Ease of mount, mount accessories available
- Available both in single and double type
- 5 years warranty

Application

- Telecomm tower
- Radio tower
- Wind turbine
- Smoke stacks & chimney
- Tall building
- Crane
- Power transmission line

DL10 Series

Intensity	10cd, steady
Compliant with	ICAO : low intensity type A
	FAA : N/A



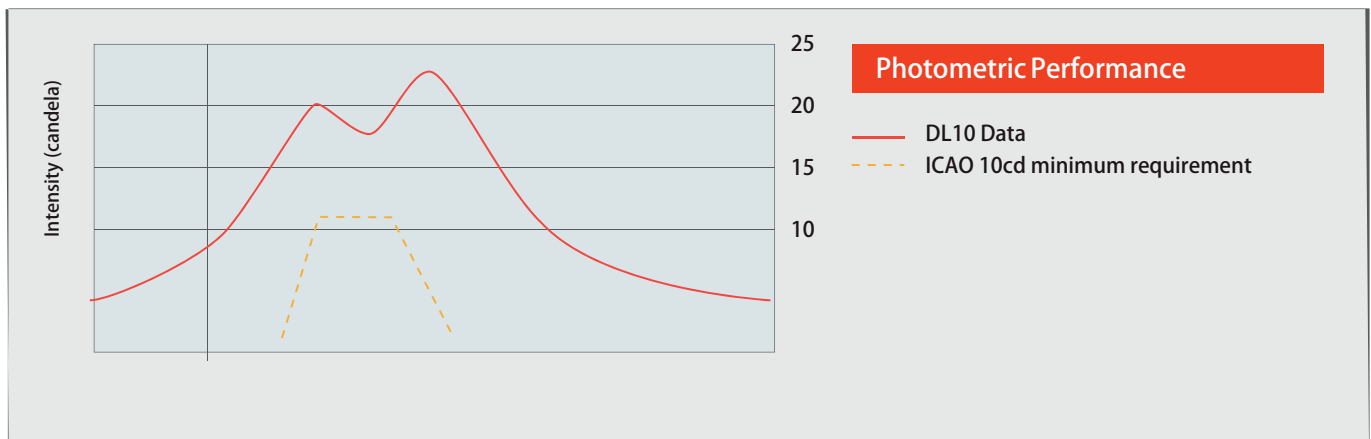
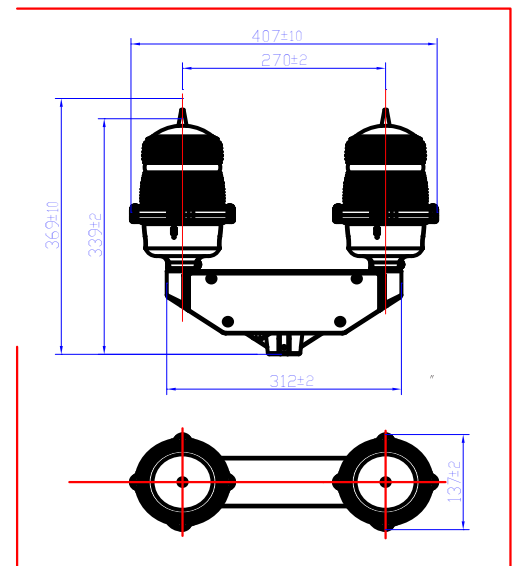
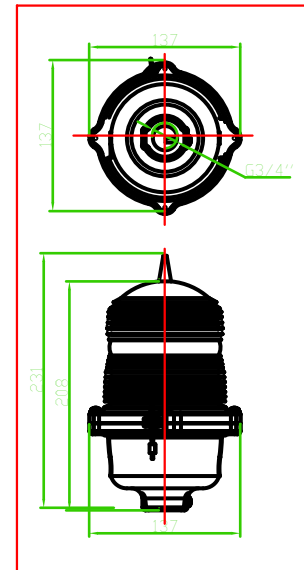
Specifications

LIGHT OUT-PUT	
Effective Intensity	10 Candela
Vertical Divergence	-3° ~20° more than 10cd, Centering at 10°
Horizontal out-put	360 Degree
LED Color	Red
LED Lifespan	100,000 Hours
OPERATION	
Flash Pattern	Steady-burning (default)
POWER SUPPLY	
Input voltage	12VDC, 24VDC, 48VDC, 110VAC, 220VAC
Frequency	50Hz ~ 60Hz
Power consumption	2W
MECHANICAL STRUCTURE	
Lens	Polycarbonate, UV Stabilize
Body	Die-casting Aluminum
Water-proof	IP67 (when the 3/4" mount is well sealed)
Weight	0.9 KG, single light 3.5 KG, double light
Temperature Range	-40° C ~ +55° C
Relative humidity	100% with condensation
Dimensions	230mm H, 245mm Diameter, single light 340mm * 413mm * 140mm, double light
Warranty	5 years
Optional	Available in flashing pattern (40FPM default) Available with built-in photo sensor Available with built-in alarm relay

Order codes

Series	Single/Double	AC/DC	Voltage	Flashing	Photo sensor	Alarm relay
DL10	S	A	12	F	P	R
	D	D	24			
			48			
			110			
			220			

For example, L10SD24R means a single, DC 24V power supply, with built-in alarm relay, steady-burning light



DL32 LED Based Low Intensity Obstruction Light

LANSING DL32 LED Low Intensity Obstruction Light series is a 32.5cd (candela) LED light designed for airway fixed obstacle marking application. It comply with ICAO & FAA regulation. It shares the same mechanical design with DL10, but comes with more LED.

DL32 Series

Intensity	32.5cd, steady
Compliant with	ICAO : low intensity type B FAA : L810

DL32 series double light

Double light is integrated by 2 single Light (working + stand-by). If works with control panel, it will auto-switch the "stand-by" light on when the "working" light fails, which makes sure that there is always a light working a top of the tower.

Features

- Special optical design provides better light distribution
- LED light source ensures long lifetime, maintenance
- Low power consumption
- Shock and vibration resistant
- Corrosion resistant and UV stable polycarbonate housing
- Ease of mount, mount accessories available
- Available both in single and double type
- 5 years warranty

Application

- Telecomm tower
- Radio tower
- Wind turbine
- Smoke stacks & chimney
- Tall building
- Crane
- Power transmission line

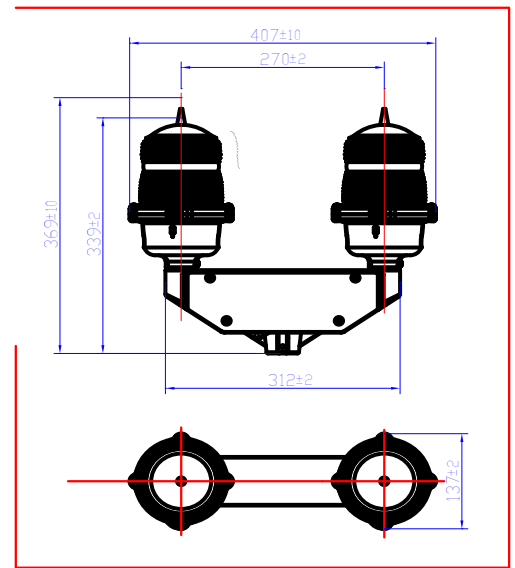
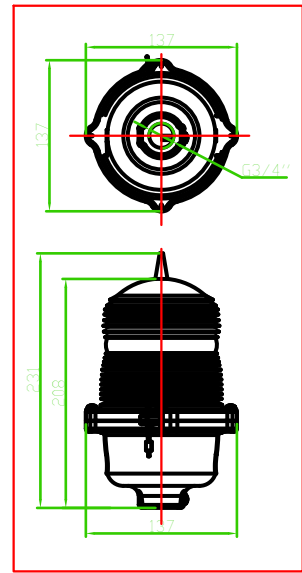
Standard

- ICAO Annex 14, 4th Edition, July 2004
ICAO low intensity, type B



Specifications

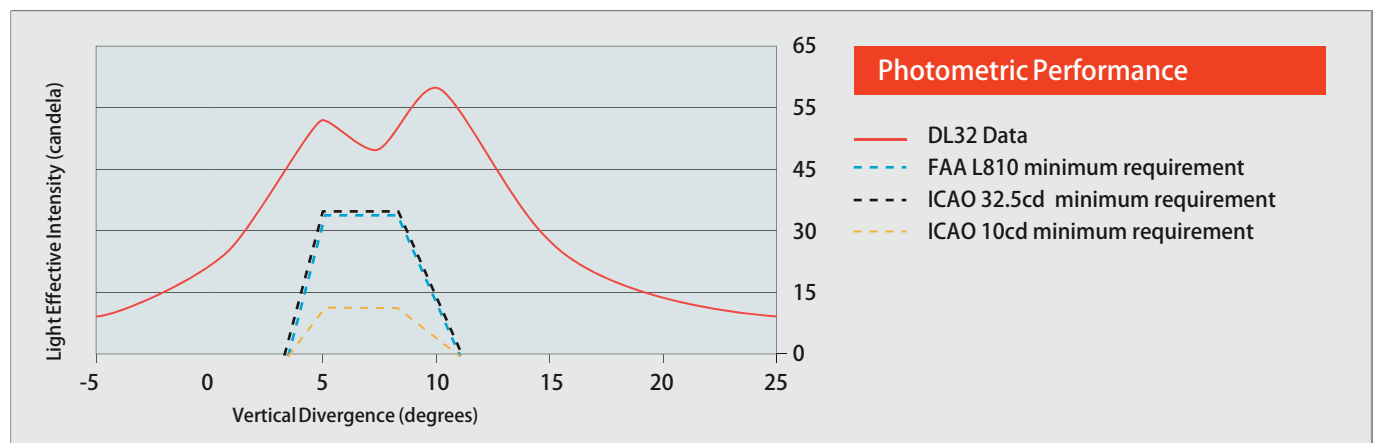
LIGHT OUT-PUT	
Effective Intensity	32.5 Candela
Vertical Divergence	-3° ~20° more than 32.5cd, Centering at 10°
Horizontal out-put	360 Degree
LED Color	Red
LED Lifespan	100,000 Hours
OPERATION	
Flash Pattern	Steady-burning (default)
POWER SUPPLY	
Input voltage	12VDC, 24VDC, 48VDC, 110VAC, 220VAC
Frequency	50Hz ~ 60Hz
Power consumption	3W
MECHANICAL STRUCTURE	
Lens	Polycarbonate, UV Stabilize
Body	Die-casting Aluminum
Water-proof	IP67 (when 3/4" mount is well sealed)
Weight	0.9 KG, single light 3.5 KG, double light
Temperature Range	-40° C ~ +55° C
Relative humidity	100% with condensation
Dimensions	230mm H, 245mm Diameter, single light 340mm * 413mm * 140mm, double light
Warranty	5 years
Optional	Available in flashing pattern (40FPM default) Available with built-in photo sensor Available with built-in alarm relay



Order codes

Series	Single/Double	AC/DC	Voltage	Flashing	Photo sensor	Alarm relay
DL32	S	A	12	F	P	R
	D	D	24			
			48			
			110			
			220			

For example, DL32DD24F means a double, DC 24V power supply, flashing light



DL50&DL100 LED Based Low Intensity Obstruction Light

In some cases, a country has its own Aviation regulation other than ICAO regulation. For example, Germany and Australia require more intensity from their local Aviation Authorities. LANSING can make such light base on customer's request.

Customized Series

Series	DL50 series	DL100 series
Intensity	50cd, steady	100cd, steady

Double light for customized low intensity series

Double light is integrated by 2 single Light (working + stand-by). If works with control panel, it will auto-switch the "stand-by" light on when the "working" light fails, which makes sure that there is always a light working a top of the tower.

Features

- Special optical design provides better light distribution
- LED light source ensures long lifetime, maintenance free
- Low power consumption
- Shock and vibration resistant
- Corrosion resistant and UV stable polycarbonate housing
- Ease of mount, mount accessories available
- Available both in single and double type
- 5 years warranty

Application

- Telecomm tower
- Radio tower
- Wind turbine
- Smoke stacks & chimney
- Tall building
- Crane
- Power transmission line

Standard

- Brighter intensity than ICAO low intensity type B
- Brighter intensity than FAA L810
- CASA 139



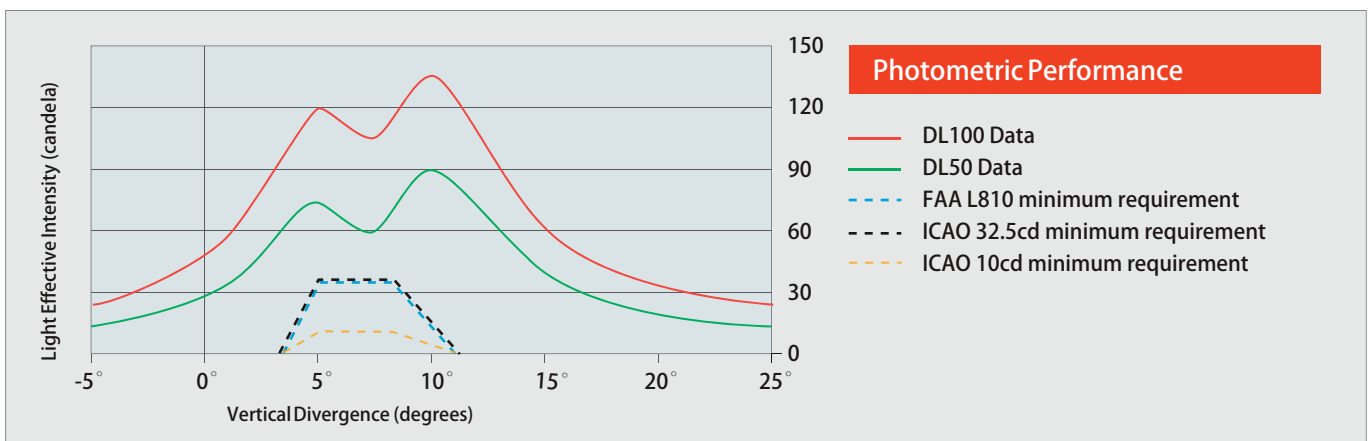
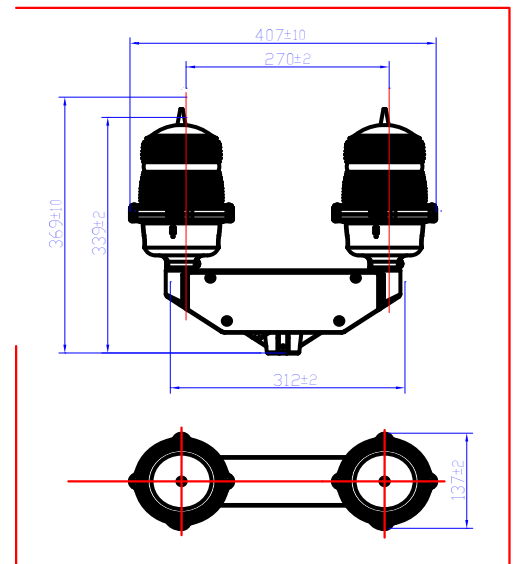
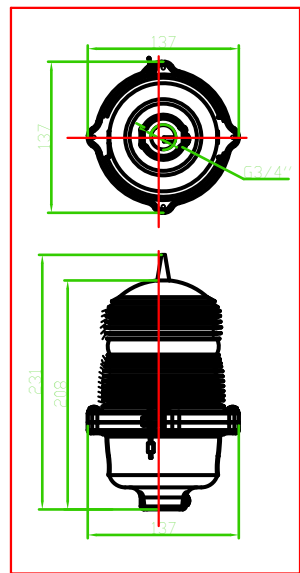
Specifications

	DL50 series	DL100 series
LIGHT OUT-PUT		
Effective Intensity	50 Candela	100 Candela
Vertical Divergence	-3° ~20° more than 50/100cd, Centering at 10°	
Horizontal out-put	360 Degree	
LED Color	Red	
LED Lifespan	100,000 Hours	
OPERATION		
Flash Pattern	Steady-burning (default)	
POWER SUPPLY		
Input voltage	12VDC, 24VDC, 48VDC, 110VAC, 220VAC	
Frequency	50Hz ~ 60Hz	
Power consumption	5W	6W
MECHANICAL STRUCTURE		
Lens	Polycarbonate, UV Stabilize	
Body	Die-casting Aluminum	
Water-proof	IP67 (when 3/4" mount is well sealed)	
Weight	0.9 KG, single light 3.5 KG, double light	
Temperature Range	-40° C ~ +55° C	
Relative humidity	100% with condensation	
Dimensions	230mm H, 245mm Diameter, single light 340mm * 413mm * 140mm, double light	
Warranty	5 years	
Optional	Available in Flashing pattern (40FPM default) Available with built-in photo sensor Alarm relay	

Order codes

Series	Single/Double	AC/DC	Voltage	Flashing	Photo sensor	Alarm relay
DL50	S	A	12	F	P	R
DL100	D	D	24			
			48			
			110			
			220			

For example, DL50SD24 means a single, DC power supply, 24V steady-burning light



DL200 LED Based Low intensity Aviation Obstruction Light

LANSING DL200 is a type of low intensity aviation obstruction light, peak intensity can be up to 200 Candelas, by far exceed International standard ICAO type B(32.5Candelas)

DL200 Series Double Light

Double light is integrated by 2 single Light (working + stand-by). If works with control panel, it will auto-switch the “stand-by” light on when the “working” light fails, which makes sure that there is always a light working a top of the tower.

Features

- Special optical design provides better light distribution
- LED light source ensures long lifetime, maintenance free
- Low power consumption
- Shock and vibration resistant
- Corrosion resistant and UV stable polycarbonate housing
- Ease of mount, mount accessories available
- Available both in single and double type
- 5 years warranty

Application

- Telecomm tower
- Radio tower
- Wind turbine
- Smoke stacks & chimney
- Tall building
- Crane
- Power transmission line

Standard

- ICAO Annex 14, 4th Edition, July 2004

Compliant

UK CAP168 Low Intensity Obstacle(Group C)

NFL 197-107/03, Neues feuer W-ROT



Light out-put

Peak Intensity	200 cd
Vertical Divergence	+5 to +8 degree 200cd 0 to +15 degree 50cd
Horizontal out-put	360 degree
LED color	Red(white, yellow, green, blue available)
LED lifespan	10,000 hours

Power supply

Operation voltage	12VDC, 24VDC, 48VDC, 110VAC, 220VAC(50-60HZ)	
Flash Pattern	Steady-Burning	Flashing
Power consumption	10W	1.2W

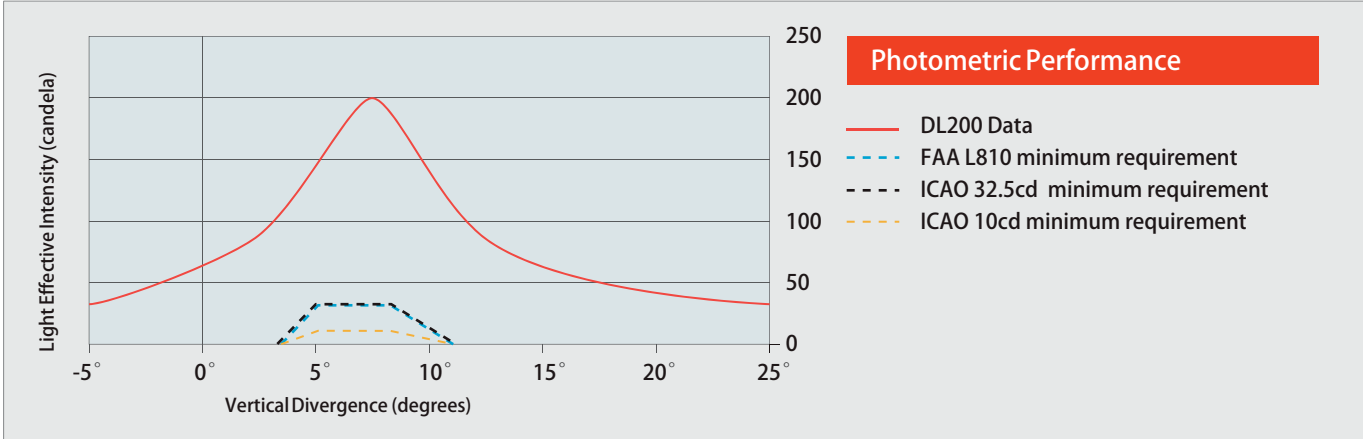
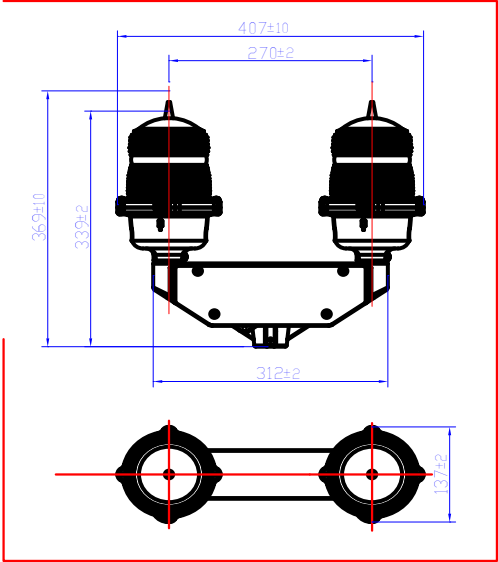
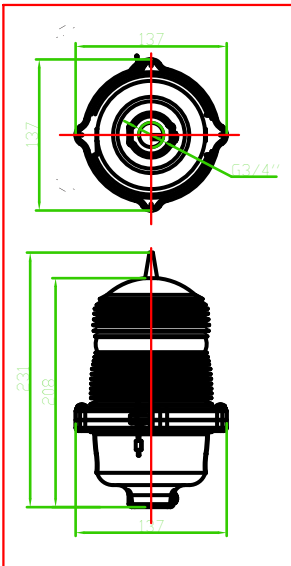
Mechanical structure

Lens	Polycarbonate, UV Stablized
Body	Aluminum die-casting
Waterproof	IP67
Weight	1.1KG, single light 3.7 KG, double light
Temperature range	-40C° -+50C°
Relative Humidity	100% with condensation
Dimensions	215.5mm Height, 226mm Diameter
Optional	Available with built-in photo sensor Available with built-in alarm relay

Ordering Code

Series	Single/Double	AC/DC	Voltage	Flashing	Photo sensor	Alarm Relay
DL200	S	A	12	F	P	R
		D	24			
		48				
		110				
		220				

For example,DL200SD24 means a single, DC power supply, 24V steady-burning light



Aviation Obstruction Light

Medium Intensity

- ZG2K
- ZG2B
- DL2K

<http://www.lansinglight.com/en/prod>

ZG2K LED Based Medium Intensity Obstruction Light

ZG2K is a new generation medium intensity OB light. It comes with compact-size and light-weight, which makes installation job nice & easy.

The optical part is based on Fresnel lens, a transformed convex lens which can concentrate light to a small speciel to meet with ICAO requirements. Fresnel lens is often used to design obstruction light.

The light's ingress protection level is IP67, assures the light is well sealed to stand harsh environment include the ocean. If work with control box, more functions like synchronization could be realized. GPS or GPRS functions also available if needed.

Medium intensity light ZG2K is for tower taller than 45m. It sh ould be used either alone, or in combination with low-intensity light type B (our DL32 series).

Features

- Unique optical design complies with ICAO regulation
- Aluminum head provides good thermal performance
- Better shock-resistant perform than Xenon
- Longer lifetime expectancy
- Almost maintenance free
- Lower voltage (than xenon) makes it safer for installer
- Cost effective in long run
- 5 years warranty

Application

- Telecomm tower
- Radio tower
- Wind turbine
- Smoke stacks & chimney

Standard

- ICAO Annex 14, 4th Edition, July 2004
- ICAO medium intensity, type B & type C

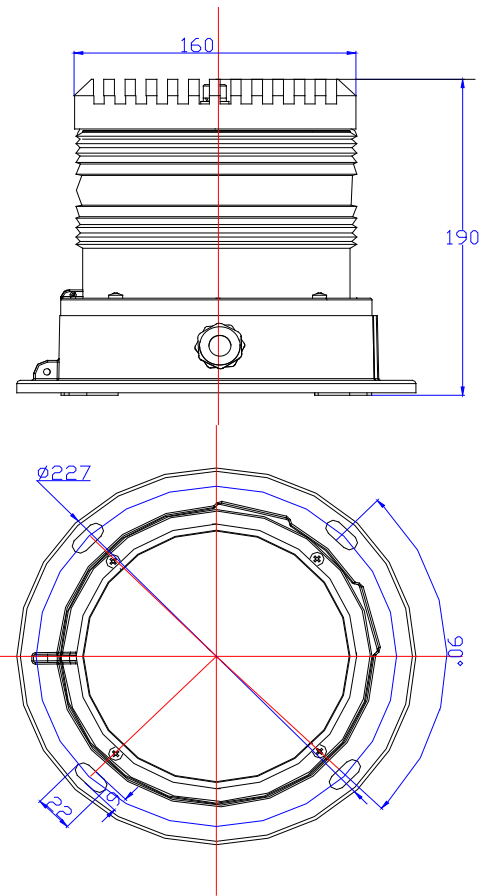
ZG2K Series

Intensity	2000 cd	
Compliant with	Steady	ICAO : Medium intensity type C
	Flashing	ICAO : Medium intensity type B



Specifications

LIGHT OUT-PUT	
Peak Intensity	2000 Candela
Vertical Divergence	-1° 950cd, Centering at 0.5°
Horizontal out-put	360 Degree
LED Color	Red
LED Lifespan	100,000 Hours
OPERATION	
Flash Pattern	Steady-burning or flashing
POWER SUPPLY	
Input voltage	110VAC ~ 220VAC, 24VDC, 48VDC
Frequency	50Hz ~ 60Hz
Rated consumption	40W with steady mode; 5W with flashing
MECHANICAL STRUCTURE	
Lens	Polycarbonate, UV Stabilize
Body	Die-casting Aluminum
Water-proof	IP67
Weight	4.5 KG
Temperature Range	-40 ~ +55
Relative humidity	100% with condensation
Dimensions	210mm H, 226mm Diameter
Warranty	5 years
Optional	Available with built-in photo sensor Available with built-in Alarm relay



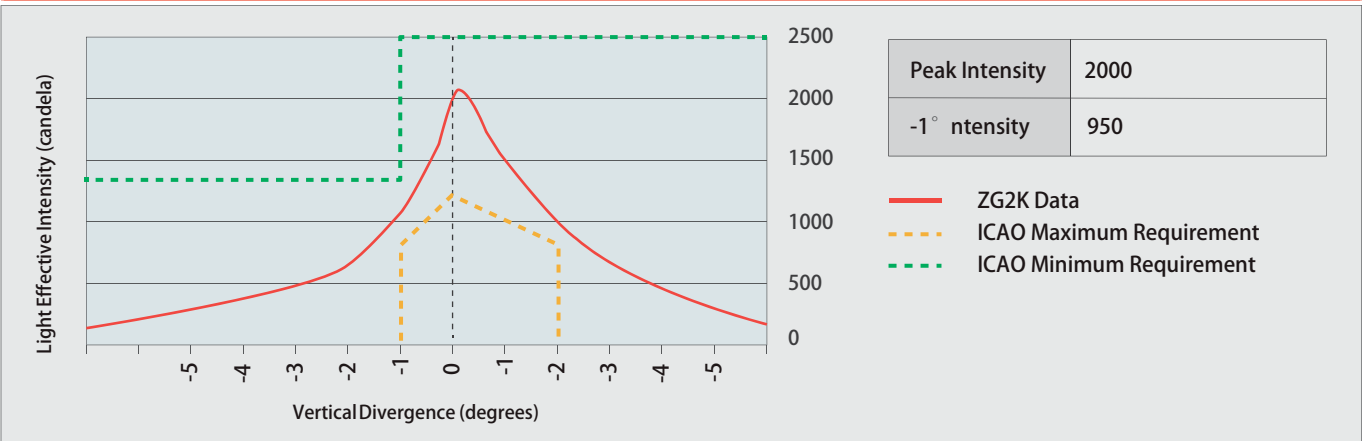
Order Codes

Series	Steady/ flashing	AC/DC	Votagel	Flashing	Photo sensor	Alarm relay
ZG2K	C (steady)	A	12	F	P	R
	B (flashing)	D	24			
			48			
			110			
			220			

For example, ZG2KBD24 means a DC 24V power supply, Flashing light



ZG2K Series Photometric Performance



DL2K LED Based Medium Intensity Obstruction Light

LANSING DL2K is a type of low intensity aviation obstruction light, peak intensity can be up to 2000 Candelas, by far exceed International standard ICAO type B(32.5Candelas)

DL2K Series Double Light

Double light is integrated by 2 single Light (working + stand-by). If works with control panel, it will auto-switch the "stand-by" light on when the "working" light fails, which makes sure that there is always a light working a top of the tower.

DL2K Series

Intensity	2000 cd	
Compliant with	Steady	ICAO : Medium intensity type C
	Flashing	ICAO : Medium intensity type B

Features

- Special optical design provides better light distribution
- LED light source ensures long lifetime, maintenance free
- Low power consumption
- Shock and vibration resistant
- Corrosion resistant and UV stable polycarbonate housing
- Ease of mount, mount accessories available
- Available both in single and double type
- 5 years warranty

Application

- Telecomm tower
- Radio tower
- Wind turbine
- Smoke stacks & chimney
- Tall building
- Crane
- Power transmission line

Standard

- ICAO Annex 14, 4th Edition, July 2004





Aviation Obstruction Light

Solar Series

- DLT10S Series
- DLT32/50S Series
- DLT100S Series
- TY10S Series
- TY32S Series
- TY10D Double
- TY32D Series
- TYI32 Series
- TYI50 Series

<http://www.lansinglight.com/en/products/aviation/>

DLT10 &32 Solar Powered Low Intensity Obstruction Light

DLT10&32 series is solar powered obstruction light. Solar function make it a self-contained and almost care-free light unit.

The light system is composed of 3 parts; light, battery box and solar panel. When the light and solar panel connected to the battery box, the whole system can be mounted on a tower. Both vertical mounting and horizontal mounting are available.

DLT10 is equipped with a 8Ah VRLA (voltage regulated lead acid) rechargeable battery which could power the light up to 5 days when the weather is cloudy & rainy. The 8Ah VRLA battery is also easy to find almost anywhere.

Both single light & double light are available

DLT10 &32 Series

Intensity	10cd, steady	32cd, steady
Compliant with	ICAO : low intensity type A	
	FAA : N/A	

Features

- Green energy
- Ultra-light LEDs, energy saving
- Self-contained without outside power supply
- Maximum visibility distance 4 KM, 7.6KM
- Once fully charged, it can work for up to 60

hours

- Cable cost saving & cabling job saving
- No wiring job, nice & easy installation

Applications

- Telecomm tower
- Radio tower
- Wind turbine
- Smoke stacks & chimney
- Tall building
- Power transmission line

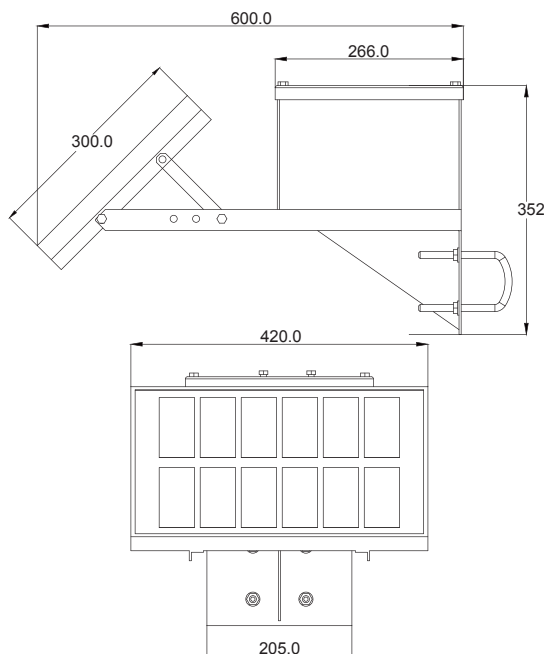
Standard

- ICAO Annex 14, 4th Edition, July 2004
- ICAO low intensity, type A



Specifications

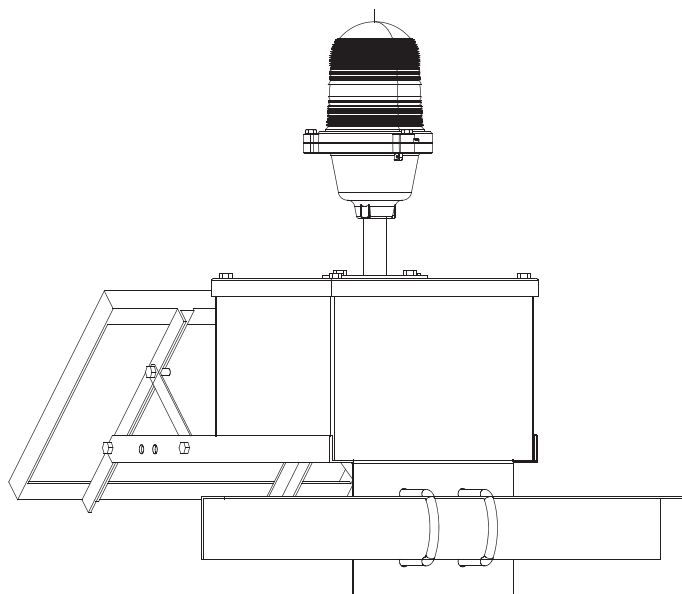
LIGHT OUT-PUT		
Effective Intensity	10 Candela	32 Candela
Vertical Divergence	-3° ~20° >10cd, >32.5cd Centering at 10°	
Horizontal out-put	360 Degree	
LED Color	Red	
LED Lifespan	100,000 Hours	
OPERATION		
Flash Pattern	Flashing or Steady	
POWER SUPPLY		
Solar panel	9V / 5W module	9V / 10W module
Rechargeable battery	VRLA, 6V / 8Ah	VRLA, 12V / 8Ah
Autonomy	5 days (in cloudy & raining weather)	
MECHANICAL STRUCTURE		
Lens	Polycarbonate, UV Stabilize	
Body	Die-casting Aluminum	
Water-proof	IP65	
Weight	11 KG	15 KG
Temperature Range	-40C ~ +55C	
Relative humidity	100% with condensation	
Battery box dimensions	352mm H, 204mm W, 650mm L	
Solar module dimensions	420mm * 300mm * 28mm	
Warranty	5 years for light body, 10 years for solar panel 2 years for VRLA battery	



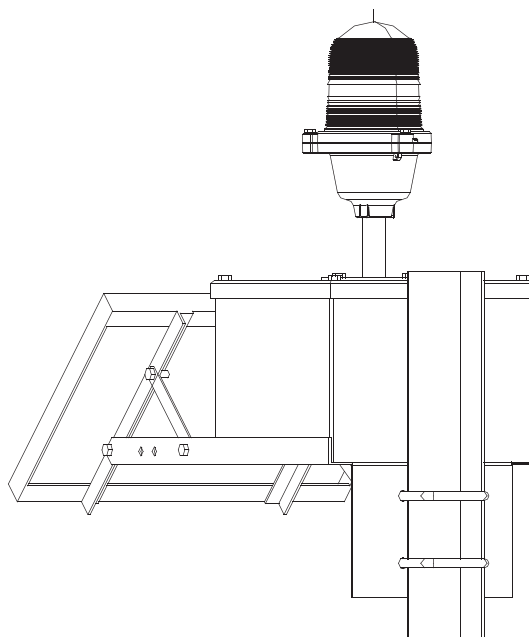
Order codes

Series	Single/Double
DLT10	S
	D

For example,
DLT10S means a solar powered single light



Horizontal Mount



Vertical Mount

DLT50&100 Solar Powered Low Intensity Obstruction Light

DLT50&100 series is solar powered obstruction light. Solar function make it a self-contained and almost care-free light unit.

The light system is composed of 3 parts; light, battery box and solar panel. When the light and solar panel connected to the battery box, the whole system can be mounted on a tower. Both vertical mounting and horizontal mounting are available.

DLT50 is equipped with a 8Ah VRLA (voltage regulated lead acid) rechargeable battery which could power the light up to 5 days when the weather is cloudy & rainy. The 8Ah VRLA battery is also easy to find almost anywhere. Both single light & double light are available.

Features

- Green energy
- Ultra-light LEDs, energy saving
- Self-contained without outside power supply
- Maximum visibility distance 7.6 KM
- Once fully charged, it can work for up to 60 hours
- Cable cost saving & cabling job saving
- No wiring job, nice & easy installation

Applications

- Telecomm tower
- Radio tower
- Wind turbine
- Smoke stacks & chimney
- Tall building
- Power transmission line

Standard

- ICAO Annex 14, 4th Edition, July 2004
- ICAO low intensity, type B
- FAA AC150/5345-43F, 2006
- FAA, type L810

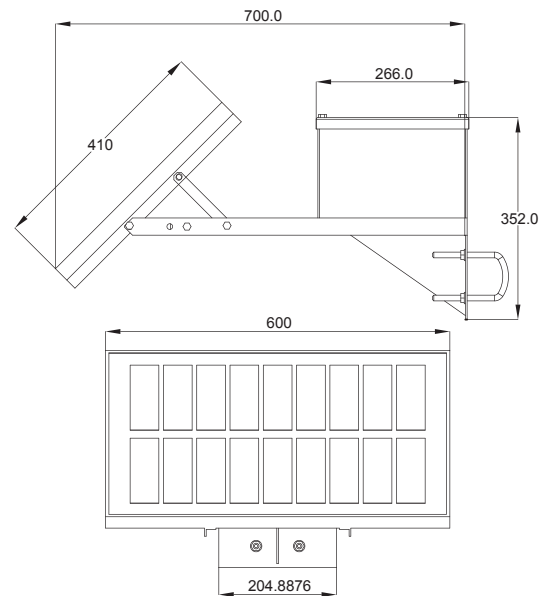
DLT50&100 Series

Series	DL50 series	DL100 series
intensity	50cd, steady	100cd, steady
Compliant with	ICAO : low intensity type B FAA : L810	



Specifications

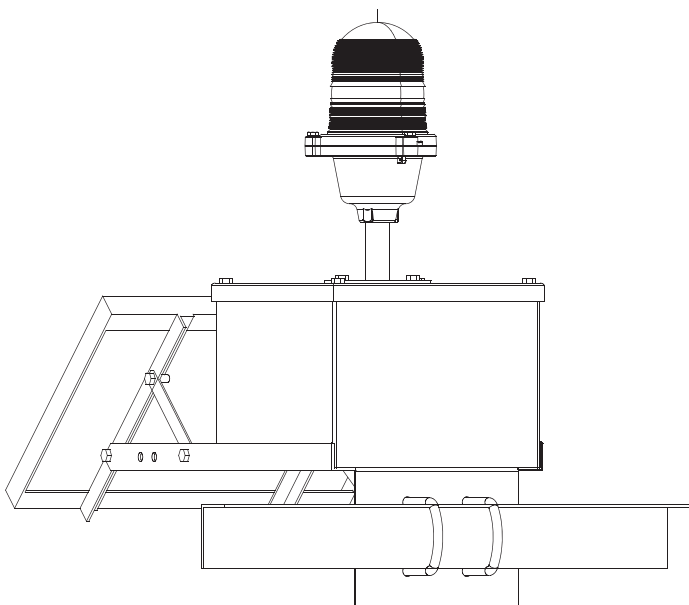
LIGHT OUT-PUT		
Effective Intensity	DLT50 series 50 Candela	DLT100 series 100 Candela
Vertical Divergence	-3° ~20° more than 50cd, Centering at 10°	
Horizontal out-put	360 Degree	
LED Color	Red	
LED Lifespan	100,000 Hours	
OPERATION		
Flash Pattern	Flashing or Steady	
POWER SUPPLY		
Solar panel	17.5V / 12W module	17.5V / 20W module
Rechargeable battery	VRLA, 12V / 8Ah	VRLA, 12V / 16Ah
Autonomy	5 days (in cloudy & raning weather)	
MECHANICAL STRUCTURE		
Lens	Polycarbonate, UV Stabilize	
Body	Die-casting Aluminum	
Water-proof	IP65	
Weight	12KG	15 KG
Temperature Range	-40C ~ +55C	
Relative humidity	100% with condensation	
Battery box dimensions	352mm H, 204mm W, 650mm L	
Solar module dimensions	600mm * 410mm * 28mm	
Warranty	5 years for light body, 10 years for solar panel 2 years for VRLA battery	



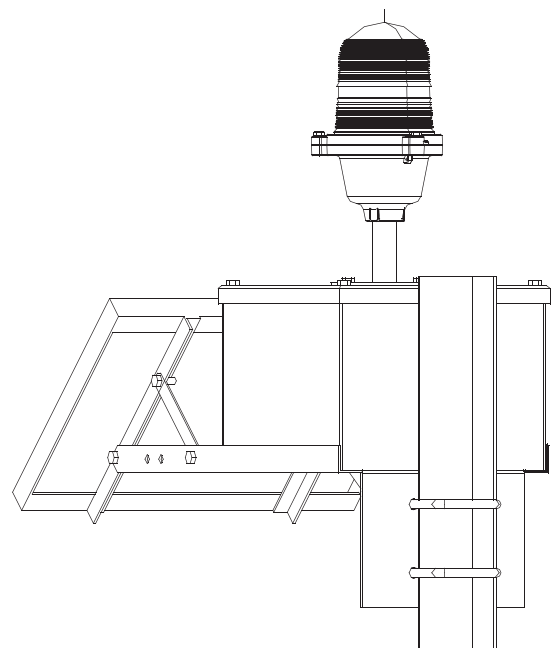
Order codes

Series	Single/Double
DLT50	S
	D

For example,
DLT50D means a solar powered double light



Horizontal Mount



Vertical Mount

DLT200 Solar Powered Low Intensity Obstruction Light

DLT200 series is solar powered obstruction light. Solar function make it a self-contained and almost care-free light unit.

The light system is composed of 3 parts; light, battery box and solar panel. When the light and solar panel connected to the battery box, the whole system can be mounted on a tower. Both vertical mounting and horizontal mounting are available.

DLT200 is equipped with a 18Ah VRLA (voltage regulated lead acid) rechargeable battery which could power the light up to 5 days when the weather is cloudy & rainy. The 18Ah VRLA battery is also easy to find almost anywhere.

Both single light & double light are available.

Features

- Green energy
- Ultra-light LEDs, energy saving
- Self-contained without outside power supply
- Maximum visibility distance 10 KM
- Once fully charged, it can work for up to 60 hours
- Cable cost saving & cabling job saving
- No wiring job, nice & easy installation

Applications

- Telecomm tower
- Radio tower
- Wind turbine
- Smoke stacks & chimney
- Tall building
- Power transmission line

Standard

- ICAO Annex 14, 4th Edition, July 2004
- ICAO low intensity, type A

DLT200 Series

Intensity	200cd, steady
Compliant with	ICAO : low intensity type A FAA : N/A



ZGT2KB Solar Based Medium Intensity Obstruction Light

ZGT2KB series is solar powered obstruction light. Due to solar module's limitation like solar panel size and battery size, the light is being designed to work under flashing mode instead of steady-burning mode.

But advantages like energy saving and cable saving make the solar powered light a good option on obstruction marking.

Features

- Green energy
- Cable cost saving & cabling job saving
- No wiring job, nice & easy installation

Application

- Telecomm tower
- Radio tower
- Wind turbine
- Smoke stacks & chimney
- Tall building
- Power transmission line

Standard

- ICAO Annex 14, 4th Edition, July 2004
- ICAO medium intensity, customized

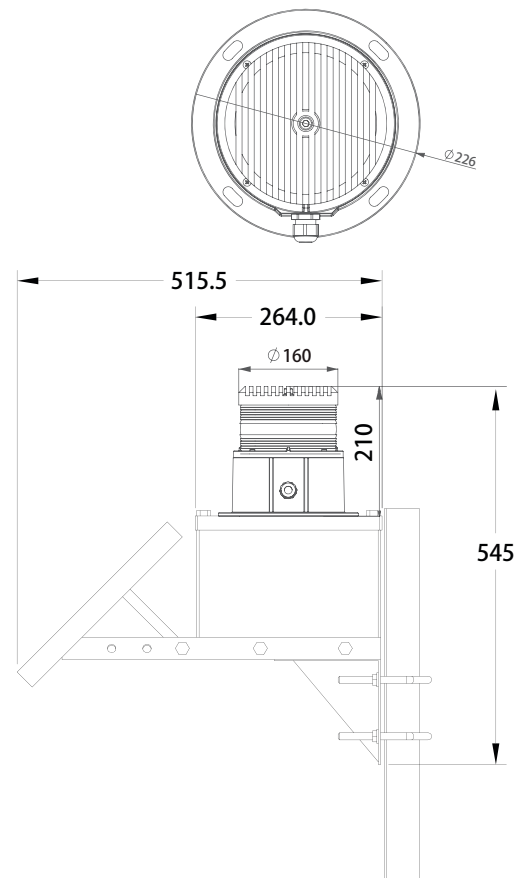
ZGT2KB Series

Intensity	2000 cd, Flashing
Compliant with	ICAO : Medium intensity type B

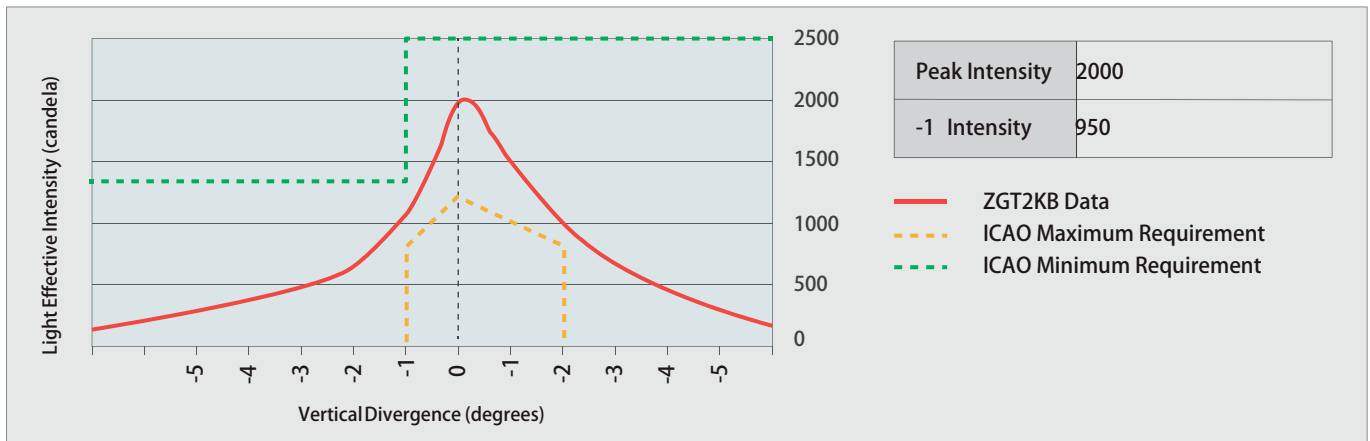


Specifications

LIGHT OUT-PUT	
Effective Intensity	2000 Candela
Vertical Divergence	Peak intensity at 1° with 3° spread angle
Horizontal out-put	360 Degree
LED Color	Red
LED Lifespan	100,000 Hours
OPERATION	
Flash Pattern	Flashing (default 40FPM)
POWER SUPPLY	
Solar panel	17.5V / 15W module
Rechargeable battery	lead-acid type, 12V / 12Ah (VRLA)
Autonomy	8 days (in cloudy & raining weather)
MECHANICAL STRUCTURE	
Lens	Polycarbonate, UV Stabilize
Body	Die-casting Aluminum
Water-proof	IP65
Weight	11 KG
Temperature Range	-40° C ~ +55° C
Relative humidity	100% with condensation
Light dimensions	200mm H, 178mm Diameter
Solar module dimensions	420mm * 600mm (bracket not included)
Light module dimensions	625mmH, 515mmL, 450mmW
Warranty	5 years for light body 2 years for battery 10 years for solar module



ZGT2KB Series Photometric Performance



TY10S Series Solar Powered Obstruction Light

The solar panel comes with TY10S provides power supply to the light, which makes SL10S a self-contained and care-free light unit. Also, with the solar function, the light is easy to deploy to almost any condition and any emergency case. Robust body built and surface coating provides good protection against harsh environments.

Compliant

ICAO Annex 14, Volume 1, 4th Edition, July 2004

FAA Advisory Circular AC150/5370-2F

TY10S is equipped with an 8Ah NiMH rechargeable battery which could power the light up to 20 days when the weather is cloudy & rainy. NiMH battery is also a clean power source with no pollution. The NiMH battery is also easy to find almost anywhere.

TY10S is also available with an optional on/off switch for storing and protect battery from over-discharging.

Features

- Ultra-light LEDs, energy saving
- Self-contained without outside power supply
- Maximum visibility distance 4 KM
- Once fully charged, it can work for up to 200 hours
- Auto-off after being packed for 18 hours

Application

- High-rise building marking
- Telecom tower marking
- Road obstruction marking
- Navigation aid
- Port, dock entrance & walkway
- Buoy marking
- Offshore gas & oil platform



Specifications

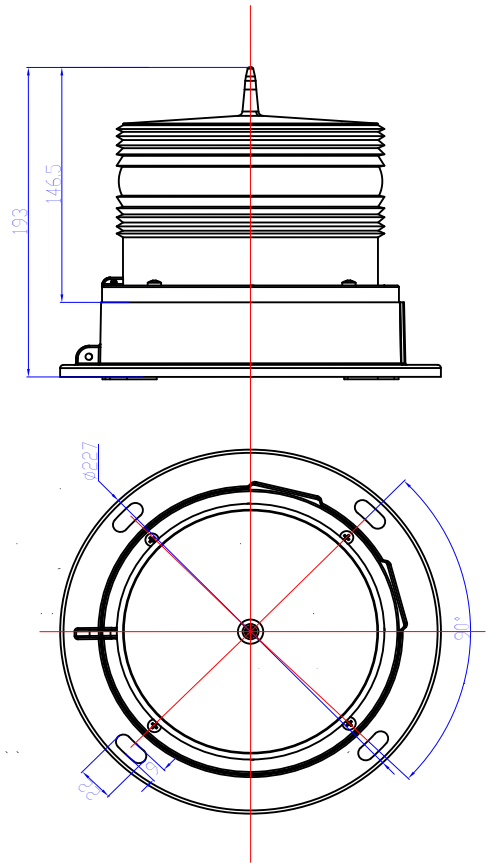
Intensity	FLASHING ● Red: >10cd ● Green:>20cd ● Yellow: >10cd ○ White:>25cd ● Blue:>5cd STEADY ● Red: >4cd ● Green: >8cd ● Yellow: >4cd ○ White:>10cd ● Blue:>2cd
Nominal Night Range	>4 KM
LED Color Available	Red, Green, Yellow, White, Blue
Vertical Divergence	10 Degree
Horizontal Out-put	360 Degree
Illumination	Ultra-bright LEDs
LED Lifespan	100,000 Hours
Autonomy	Flashing : 200 Hours / Steady : 100 Hours
On & Off Level	70/100 Lux
Flash Pattern	40FPM default (can be preprogrammed to a specified flashing rate upon customer request)
Power Source	Solar module, mono-crystalline silicon
Solar Efficiency	13.5%
Max. Power Out-put	1.8 Watts
Battery Type	High-efficiency NiMH rechargeable battery
Battery Capacity	8 AH
Battery Replacement	Yes, replaceable
Lens	Polycarbonate, UV Stabilize
Body	Polycarbonate, UV Stabilize
Water-proof	IP67
Weight	2.5KG
Temperature Range	-40° C ~ +55° C
Dimensions	215.5mm H, 226mm Diameter
Warranty	5 years for light 2 years for NiMH battery

Note: when the light is in storage, please put it outside to charge the battery every 3 months

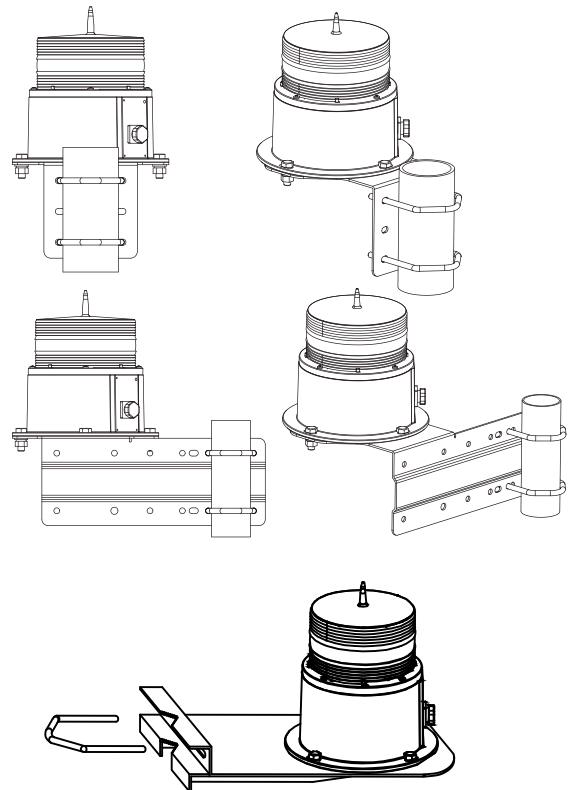
LANSING AMP-D mounting kit : Ordering Code

Ordering Code	Suitable for pipe diameter	Installation type
AMP-D-80	30-80mm	Vertical
AMP-D-100	60-100mm	Vertical
AMP-D-150	100-150mm	Vertical
AMP80B	30-80mm	Vertical

Note: details referred to LANSING RDM-AMP-04 and RDMP-AMP-06



Installation



TY32S Series Solar Powered Obstruction Light

The solar panel comes with TY32S provides power supply to the light, which makes SL32S a self-contained and care-free light unit. Also, with the solar function, the light is easy to deploy to almost any condition and any emergency case. Robust body built and surface coating provides good protection against harsh environments.

TY32S is equipped with an 8Ah NiMH rechargeable battery which could power the light up to 8 days when the weather is cloudy & rainy. NiMH battery is also a clean power source with no pollution. The NiMH battery is also easy to find almost anywhere.

TY32S is also available with an optional on/off switch for storing and protect battery from over-discharging.

Features

- Ultra-light LEDs, energy saving
- Self-contained without outside power supply
- Maximum visibility distance 7.6 KM
- Once fully charged, it can work for up to 100 hours
- Auto-off after being packed for 18 hours

Application

- High-rise building marking
- Telecom tower marking
- Road obstruction marking
- Navigation aid
- Port, dock entrance & walkway
- Buoy marking
- Offshore gas & oil platform

Compliant

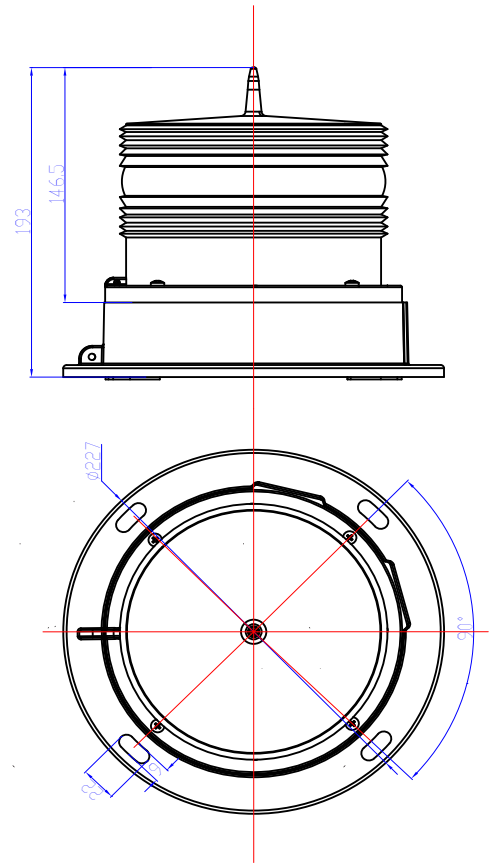
ICAO Annex 14, Volume 1, 4th Edition, July 2004

FAA Advisory Circular AC150/5370-2F



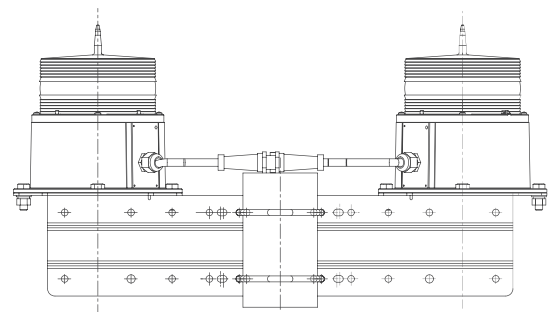
Specifications

LIGHT OUT-PUT	
Intensity	FLASHING ● Red: >10cd ● Green:>20cd ● Yellow: >10cd ○ White:>25cd ● Blue:>5cd STEADY ● Red: >4cd ● Green: >8cd ● Yellow: >4cd ○ White:>10cd ● Blue:>2cd
Nominal Night Range	>7.6 KM
LED Color Available	Red
Vertical Divergence	10 Degree
Horizontal Out-put	360 Degree
Illumination	Ultra-bright LEDs
LED Lifespan	100,000 Hours
OPERATION	
Autonomy	Flashing : 100 Hours
On & Off Level	70/100 Lux
Flash Pattern	40FPM default (can be preprogrammed to a specified flashing rate upon customer request)
POWER SUPPLY	
Power Source	Solar module, mono-crystalline silicon
Solar Efficiency	13.5%
Max. Power Out-put	4.8 Watts
Battery Type	High-efficiency NiMH rechargeable battery
Battery Capacity	8 AH
Battery Replacement	Yes, replaceable
MECHANICAL STRUCTURE	
Lens	Polycarbonate, UV Stabilize
Body	Die-casting Aluminum
Water-proof	IP67
Weight	3.5 KG
Temperature Range	-40C ~ +55C
Dimensions	215.5mm H, 226mm Diameter
Warranty	5 years for light 2 years for NiMH battery



Note: when the light is in storage, please put it outside to charge the battery every 3 months

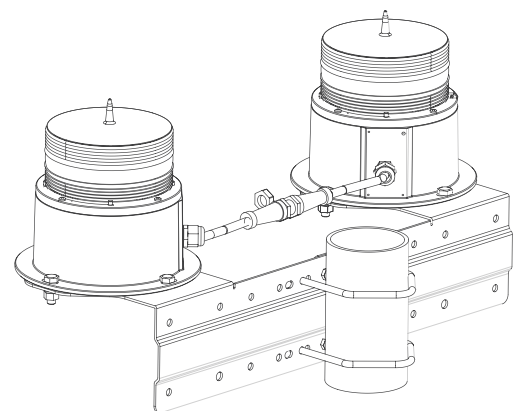
Installation



LANSING AMP-D mounting kit: Ordering Code

Ordering Code	Suitable for pipe diameter
AMP-D-80	30-80mm
AMP-D-100	60-100mm
AMP-D-150	100-150mm

Noting:
Details referred to LANSING RDM-AMP-D-02 drawing.



TY10A

TY10A is updated with a Flash Frequency adjustable switch, which can set 40,50,60,70 and 90 FPM (Flash per minute). Also, a Dry Contact relay is built-into the light to report light failure to central monitoring devices, in the case of working with junction box or control box.

Alarm report conditions:

- lamp low current (when lamp current falls <50%)
- solar panel fail
- battery fail

Ordering Code

	TY10	TY10A	TY10W
Basic functions	✓	✓	✓
Flash frequency adjustable		✓	✓
Synchronization		✓	✓
Light failure alarm report		✓	✓
Wireless			✓

Note: synchronization & alarm report functions need junction box or control box to be in the system

TY10W

SL10W is furtherly updated from SL10A, which can realize both Flash Frequency Adjusting & Alarm Reporting functions, through built-in 2.4G wireless module.

In the case of working with our wireless control box, SL10W can report failure status to central monitoring in the BTS. Distance between SL10W & receiver should be <100 meters.

Alarm report conditions:

- lamp low current (when lamp current falls <50%)
- solar panel fail
- battery fail



TY32A

TY32A is updated with a Flash Frequency adjustable switch, which can set 40,50,60,70 and 90 FPM (Flash per minute). Also, a Dry Contact relay is built-into the light to report light failure to central monitoring devices, in the case of working with junction box or control box.

Alarm report conditions:

- lamp low current (when lamp current falls <50%)
- solar panel fail
- battery fail

Ordering Code

	TY32	TY32A	TY32W
Basic functions	✓	✓	✓
Flash frequency adjustable		✓	✓
Synchronization		✓	✓
Light failure alarm report		✓	✓
Wireless			✓

Note: synchronization & alarm report functions need junction box or control box to be in the system

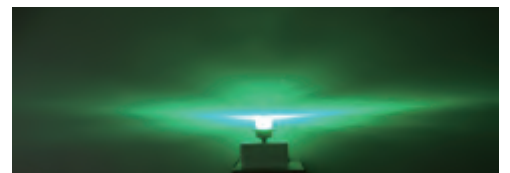
TY32W

TY32W is furtherly updated from TY32A, which can realize both Flash Frequency Adjusting & Alarm Reporting functions, through built-in 2.4G wireless module.

In the case of working with our wireless control box, TY32W can report failure status to central monitoring in the BTS. Distance between TY32W & receiver should be <100 meters.

Alarm report conditions:

- lamp low current (when lamp current falls <50%)
- solar panel fail
- battery fail



TY10D Double Solar powered Aviation obstruction light

Based on JUNHAN TY10, TY10D is a “twin” model which can be working synchronization. An internal solar panel comes with each single light of TY10D, provides power supply to the light, which makes TY10D a self-contained and care-free light unit. Also, with the solar function, the light is easy to deploy to almost any condition and any emergency case. Robust body built and surface coating provides good protection against harsh environments.

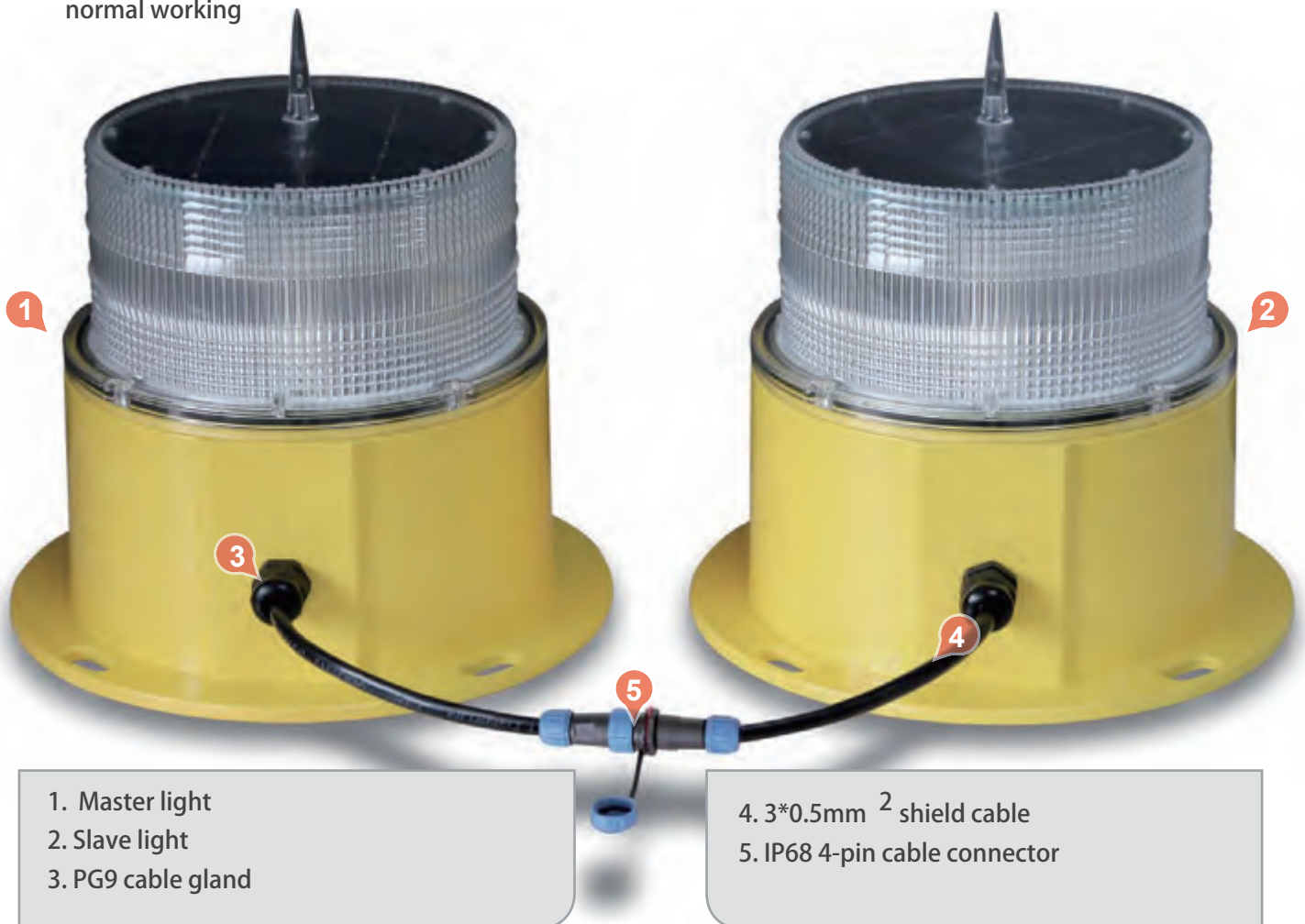
TY10D is equipped with an 8Ah NiMH rechargeable battery for each single which could power the light up to 20 days in flashing mode when the weather is cloudy & rainy. NiMH battery is also a clean power source with no pollution. The NiMH battery is also easy to find almost anywhere.

Features

- Ultra-Bright LED, energy saving
- Self-contained without outside power supply
- Maximum visibility distance 4 KM
- Once fully charged, it can work for up to 200hours
- Auto-off after being packed for 18 hours
- Either single light fails will not affect the other normal working

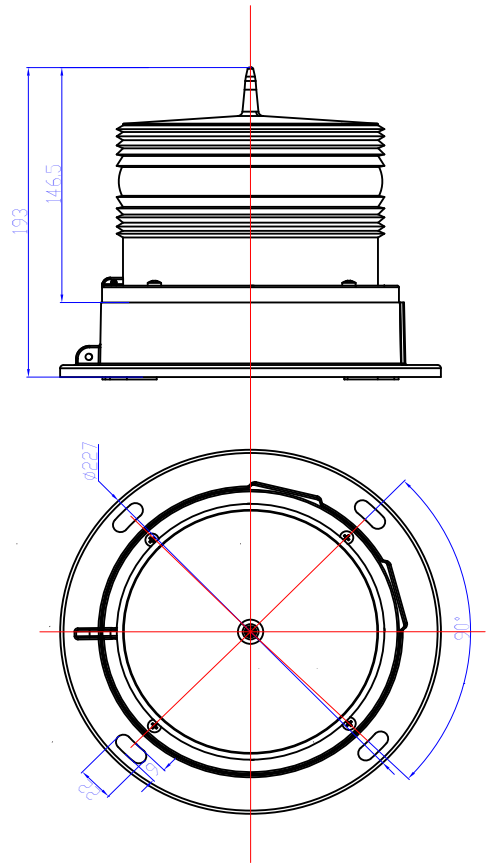
Application

- High-rise building marking
- Telecom tower marking
- Road obstruction marking
- Navigation aid
- Port, dock entrance & walkway
- Buoy marking
- Offshore gas & oil platform



Specifications

LIGHT OUT-PUT	
Intensity	FLASHING ● Red: >10cd ● Green: >20cd ● Yellow: >10cd ○ White: >25cd ● Blue: >5cd STEADY ● Red: >4cd ● Green: >8cd ● Yellow: >4cd ○ White: >10cd ● Blue: >2cd
Nominal Night Range	>4 KM
LED Color Available	Red
Vertical Divergence	10 Degree
Horizontal Out-put	360 Degree
Illumination	Ultra-bright LEDs
LED Lifespan	100,000 Hours
OPERATION	
Autonomy	Flashing : 200 Hours / Steady : 100 Hours
On & Off Level	70/100 Lux
Flash Pattern	40FPM default (can be preprogrammed to a specified flashing rate upon customer request)
POWER SUPPLY	
Power Source	Solar module, mono-crystalline silicon
Solar Efficiency	13.5%
Max. Power Out-put	1.8 Watts
Battery Type	High-ef ficiency NiMH rechargeable battery
Battery Capacity	8 AH
Battery Replacement	Yes, replaceable
MECHANICAL STRUCTURE	
Lens	Polycarbonate, UV Stabilize
Body	Die-casting Aluminum
Water-proof	IP67
Weight	5.5 KG
Temperature Range	-40C ~ +55C
Dimensions	215.5mm H, 226mm Diameter
Warranty	5 years for light 2 years for NiMH battery



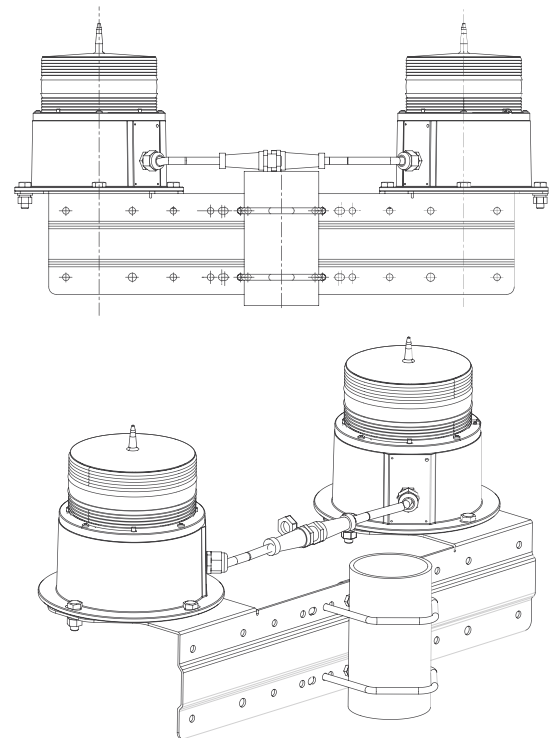
Note: when the light is in storage, please put it outside to charge the battery every 3 months

LANSING AMP-D mounting kit: Ordering Code

Ordering Code	Suitable for pipe diameter	Installation type
AMP-D-80	30-80mm	Vertical
AMP-D-100	60-100mm	Vertical
AMP-D-150	100-150mm	Vertical

Noting:
Details referred to LANSING RDM-AMP-D-02 drawing.

Installation



TY10V Solar Based Low Intensity Obstruction Light

TY10V series is solar powered obstruction light. Solar function make it a self-contained and almost care-free light unit. Also, with the solar function, the light is easy to deploy to almost any condition and any emergency case.

Robust body built and surface coating provides good protection against harsh environments. Other advantages like energy saving and cable saving make the solar powered light a good option on obstruction marking.

TY10V is equipped with a 8Ah VRLA (valve-regulated lead acid) rechargeable battery which could power the light up to 5 days when the weather is cloudy & rainy. The 8Ah VRLA battery is also easy to find almost anywhere.

Features

- Green energy
- Ultra-light LEDs, energy saving
- Self-contained without outside power supply
- Maximum visibility distance 4 KM
- Once fully charged, it can work for up to 60 hours
- Auto-off after being packed for 18 hours
- Cable cost saving & cabling job saving
- No wiring job, nice & easy installation

Application

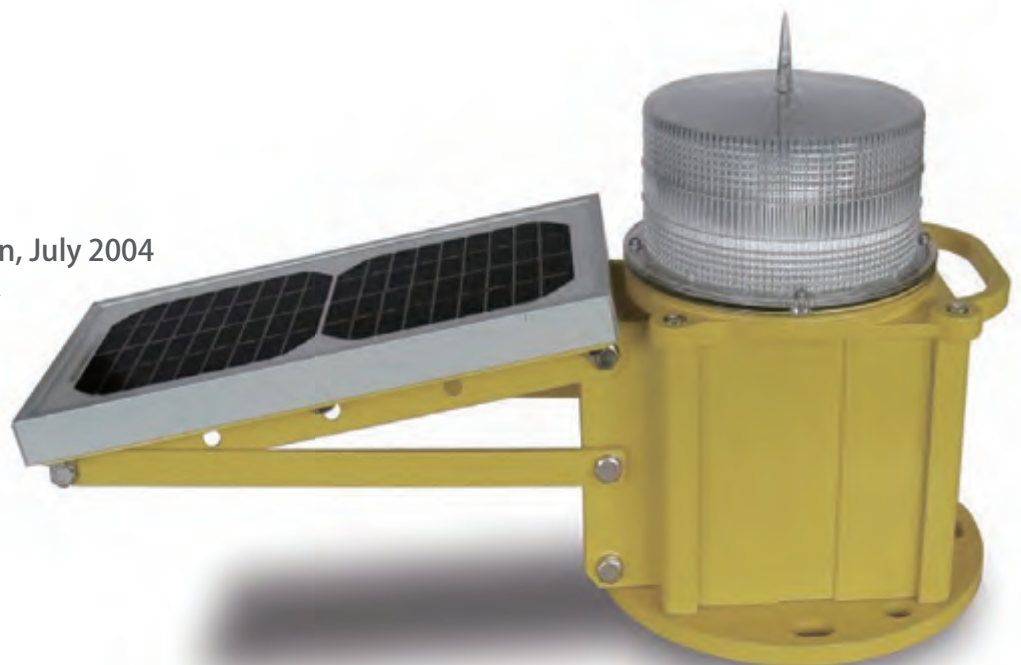
- Telecomm tower
- Radio tower
- Wind turbine
- Smoke stacks & chimney
- Tall building
- Power transmission line

Standard

- ICAO Annex 14, 4th Edition, July 2004
- ICAO low intensity, type A

TY10V Series

Intensity	10cd, steady
Compliant with	ICAO : low intensity type A
	FAA : N/A



TY32D Double Solar powered Aviation obstruction light

Based on LANSING TY32, TY32D is a “twin” model which can be working synchronization. An internal solar panel comes with each single light of TY32D, provides power supply to the light, which makes TY32D a self-contained and care-free light unit. Also, with the solar function, the light is easy to deploy to almost any condition and any emergency case. Robust body built and surface coating provides good protection against harsh environments.

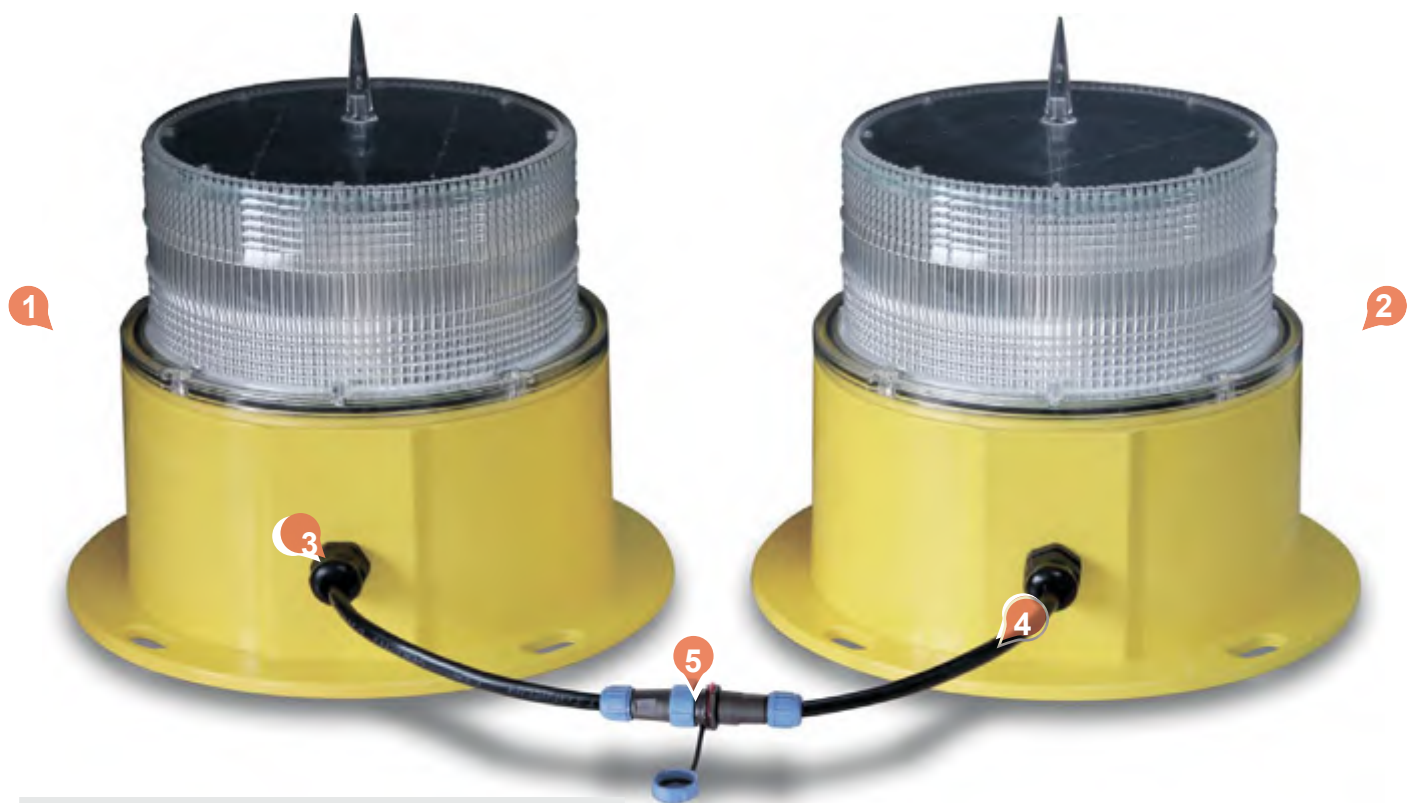
TY32D is equipped with an 8Ah NiMH rechargeable battery for each single which could power the light up to 5 days in Flashing mode when the weather is cloudy & rainy. NiMH battery is also a clean power source with no pollution. The NiMH battery is also easy to find almost anywhere.

Features

- Ultra-Bright LED, energy saving
- Self-contained without outside power supply
- Maximum visibility distance 7.6 KM
- Once fully charged, it can work for up to 100hours
- Auto-off after being packed for 18 hours
- Either single light fails will not affect the other normal working

Application

- High-rise building marking
- Telecom tower marking
- Road obstruction marking
- Navigation aid
- Port, dock entrance & walkway
- Buoy marking
- Offshore gas & oil platform

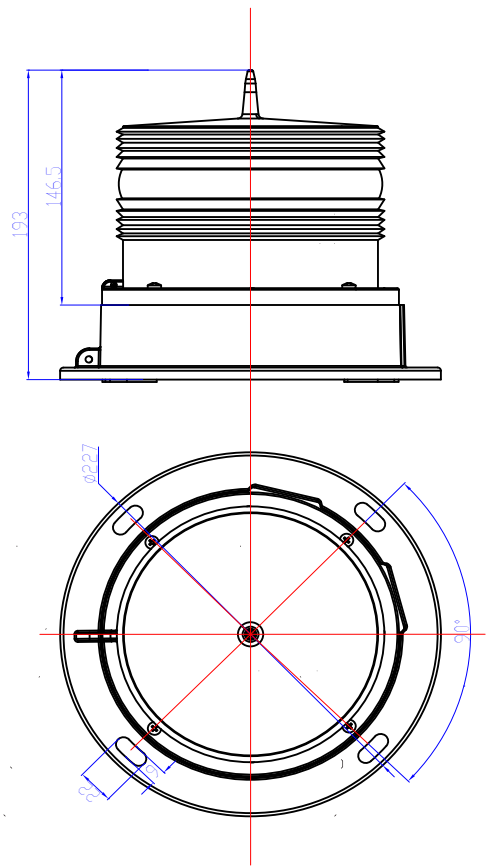


1. Master light
2. Slave light
3. PG9 cable gland

4. $3 \times 0.5 \text{mm}^2$ shield cable
5. IP68 4-pin cable connector

Specifications

LIGHT OUT-PUT	
Intensity	FLASHING ● Red: >32.5cd ● Green:>40cd ● Yellow: >32.5cd ○ White:>50cd ● Blue:>20cd STEADY ● Red: >10cd ● Green: >15cd ● Yellow: >10cd ○ White:>32.5cd ● Blue:>8cd
Nominal Night Range	>7.6 KM
LED Color Available	Red
Vertical Divergence	10 Degree
Horizontal Out-put	360 Degree
Illumination	Ultra-bright LEDs
LED Lifespan	100,000 Hours
OPERATION	
Autonomy	Flashing : 100 Hours
On & Off Level	70/100 Lux
Flash Pattern	40FPM default (can be preprogrammed to a specified flashing rate upon customer request)
POWER SUPPLY	
Power Source	Solar module, mono-crystalline silicon
Solar Efficiency	13.5%
Max. Power Out-put	4.8Watts
Battery Type	High-efficiency NiMH rechargeable battery
Battery Capacity	8 AH
Battery Replacement	Yes, replaceable
MECHANICAL STRUCTURE	
Lens	Polycarbonate, UV Stabilize
Body	Die-casting Aluminum
Water-proof	IP67
Weight	4.5 KG
Temperature Range	-40C ~ +55C
Dimensions	215.5mm H, 226mm Diameter
Warranty	5 years for light 2 years for NiMH battery



Note: when the light is in storage, please put it outside to charge the battery every 3 months

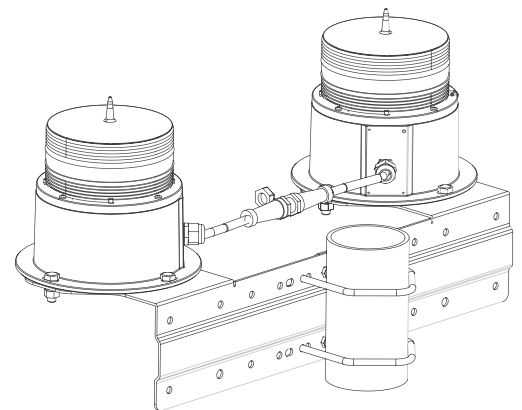
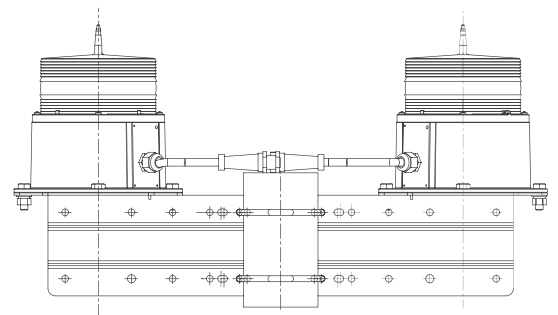
LANSING AMP-D mounting kit: Ordering Code

Ordering Code	Suitable for pipe diameter	Installation type
AMP-D-80	30-80mm	Vertical
AMP-D-100	60-100mm	Vertical
AMP-D-150	100-150mm	Vertical

Noting:

Details referred to LANSING RDM-AMP-D-02 drawing.

Installation



TYI32 Solar Powered Low Intensity Obstruction Light

The solar panel comes with TYI32 provides power supply to the light, which makes SLI32 a self-contained and care-free light unit. Also, with the solar function, the light is easy to deploy to almost any condition and any emergency case. Robust body built and surface coating provides good protection against harsh environments.

TYI32 Series

Intensity	32.5cd, Flashing
Compliant with	ICAO : N/A
	FAA : N/A

TYI32 is equipped with an high-efficiency rechargeable battery which could power the light up to 8 days when the weather is cloudy & rainy. The rechargeable battery is also easy to find almost anywhere.

TYI32 is working under flashing mode, while ICAO requires that the low intensity light to be steady. But, anyway, TYI32 could be a alternative option for some special needs.

Features

- Ultra-light LEDs, energy saving
- Self-contained without outside power supply
- Maximum visibility distance 5 KM
- Once fully charged, it can work for up to 100 hours
- Auto-off after being packed for 18 hours

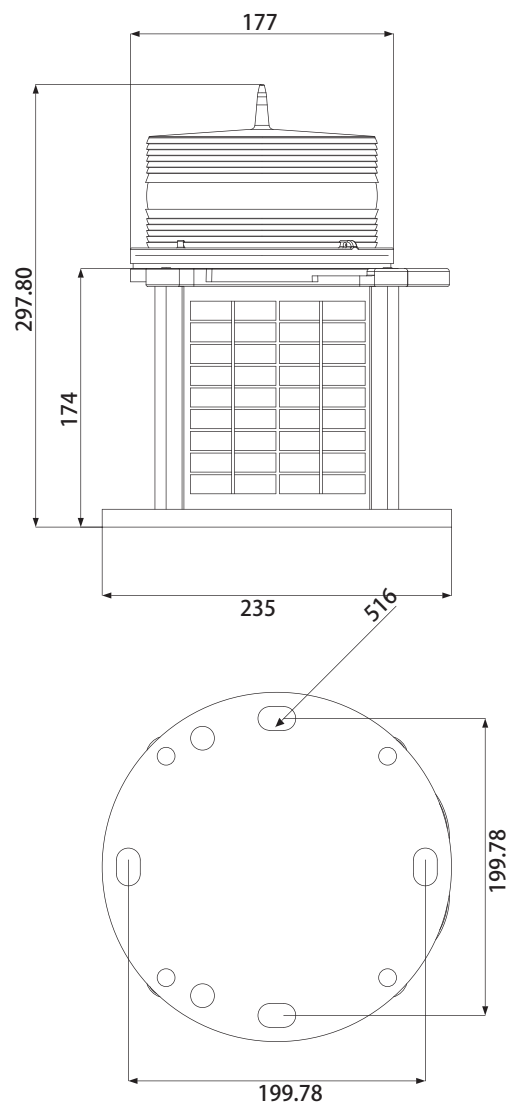
Application

- High-rise building marking
- Telecom tower marking
- Road obstruction marking
- Navigation aid
- Port, dock entrance & walkway
- Buoy marking
- Offshore gas & oil platform

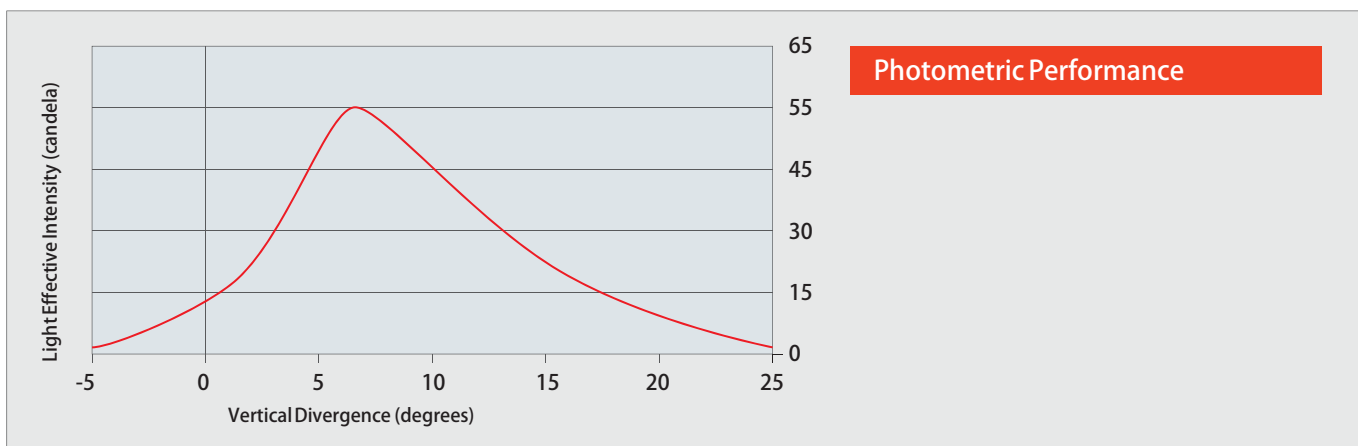


Specifications

LIGHT OUT-PUT	
Intensity	FLASHING
Nominal Night Range	32.5 Candela
LED Color Available	>7.6KM
Vertical Divergence	Red
Horizontal Out-put	10 Degree
Illumination	360 Degree
LED Lifespan	Ultra-bright LEDs
	100,000 Hours
OPERATION	
Autonomy	100 Hours
On & Off Level	70/100 Lux
Flash Pattern	20-90FPM (Preprogrammed default 40FPM)
POWER SUPPLY	
Power Source	Solar module, mono-crystalline silicon
Solar Efficiency	13.5%
Max. Power Out-put	12 Watts
Battery Type	High-efficiency Lead-Acid rechargeable battery
Battery Capacity	12V / 8AH
Battery Replacement	Yes, replaceable
MECHANICAL STRUCTURE	
Lens	Polycarbonate, UV Stabilize
Body	Extrude-Aluminum
Water-proof	IP67
Weight	6 KG
Temperature Range	-40C ~ +55C
Dimensions	298mm H, 235mm Diameter
Warranty	5 years for light
	2 years for Lead-Acid battery



Note: when the light is in storage, please put it outside to charge the battery every 3 months



TYI50 Solar Based Low Intensity Obstruction Light

The solar panel comes with TYI50 provides power supply to the light, which makes TYI50 a self-contained and care-free light unit. Also, with the solar function, the light is easy to deploy to almost any condition and any emergency case. Robust body built and surface coating provides good protection against harsh environments.

TYI50 is equipped with an high-efficiency rechargeable battery is also easy to find almost anywhere.

TYI50 is working under flashing mode, while ICAO requires that the low intensity light to be steady. But, anyway, TYI50 could be a alternative option for some special needs.

Features

- Ultra-light LEDs, energy saving
- Self-contained without outside power supply
- Maximum visibility distance 6 KM
- Once fully charged, it can work for up to 100 hours
- Auto-off after being packed for 18 hours

Application

- High-rise building marking
- Telecom tower marking
- Road obstruction marking
- Navigation aid
- Port, dock entrance & walkway
- Buoy marking
- Offshore gas & oil platform

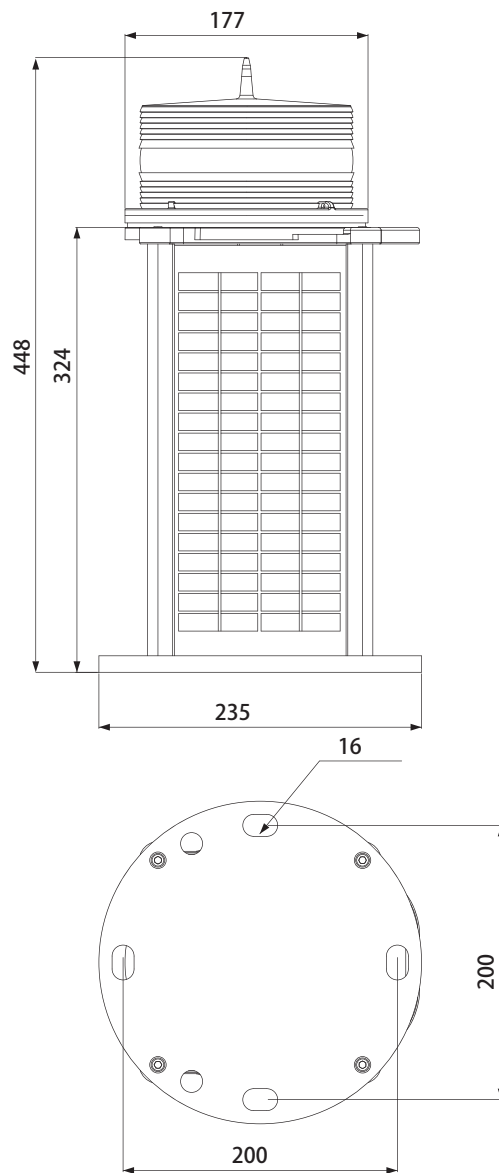
TYI50 Series

Intensity	10cd, Flashing
Compliant with	ICAO : N/A
	FAA : N/A

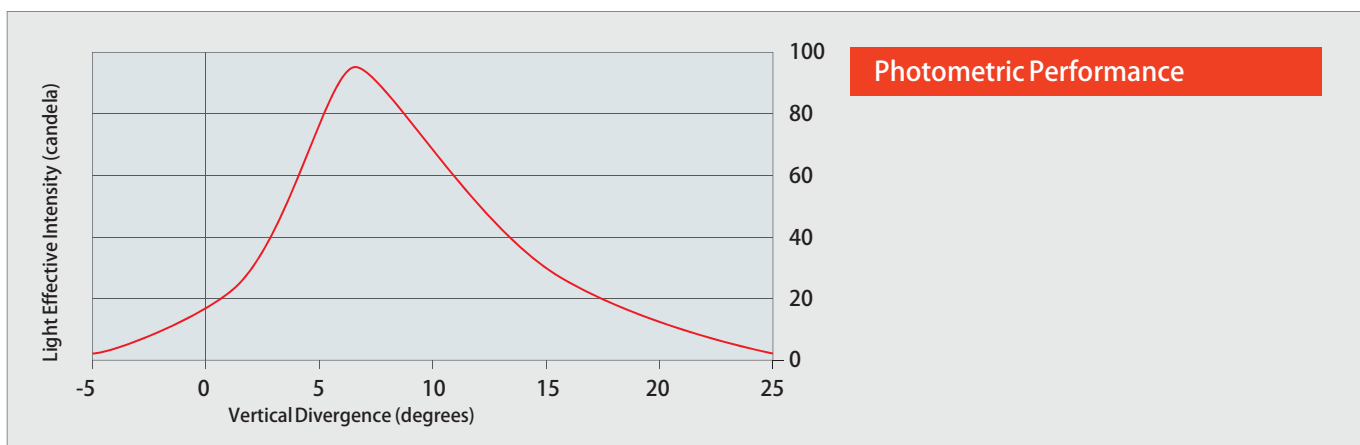


Specifications

LIGHT OUT-PUT	FLASHING
Intensity	50 Candela
Nominal Night Range	>6 KM
LED Color Available	Red
Vertical Divergence	10 Degree
Horizontal Out-put	360 Degree
Illumination	Ultra-bright LEDs
LED Lifespan	100,000 Hours
OPERATION	
Autonomy	100 Hours
On & Off Level	70/100 Lux
Flash Pattern	20-90FPM (Preprogrammed default 40FPM)
POWER SUPPLY	
Power Source	Solar module, mono-crystalline silicon
Solar Efficiency	13.5%
Max. Power Out-put	20 Watts
Battery Type	High-ef efficiency Lead-Acid rechargeable battery
Battery Capacity	12V / 16AH
Battery Replacement	Yes, replaceable
MECHANICAL STRUCTURE	
Lens	Polycarbonate, UV Stabilize
Body	Die-casting Aluminum
Water-proof	IP67
Weight	9 KG
Temperature Range	-40C ~ +55C
Dimensions	448mm H, 235mm Diameter
Warranty	5 years for light 2 years for Lead-Acid battery



Note: when the light is in storage, please put it outside to charge the battery every 3 months





Aviation Obstruction Light

CBL Control Box Series

- CBL02-A
- CBL04-A
- CBL04B Control Box
- CBL04-AIDO Control box
- LANSING Control Panel Breakdown
- PHC01 Photocell

<http://www.lansinglight.com/en/products/aviation/>

CBL04-A Control Box

CBL04A Control Box employs MCU IC control technology. With a pre-programmed software, CBL04A can control up to 4 aviation obstruction lights. When any light fails, the control box will send a alarm signal to alarm device in BTS in order for maintanence staff to replace the light immediately.

if needed, it can turn on all lights in the system and make them Flash at the same time. (Control box that can control more than 4 lights are also available upon request).

A photocell is included with the control box, which can turn on/off the system at dawn/dusk. The photocell should be installed in open environment. CBL04A added a extra surge protection than CBL04. The surge protector can resist up to 65KA, 2.2KV.

Features

- All lights on / off lights simultaneously
- Light failure indication, the corresponding indicator shows when any light failed
- Alarm signal output, can connect to other external alarm devices
- A manual photocell switch, which can switch to manual control mode during installation
- PHC01 automatic photocell
- The controller is indoor type (out-door type available upon request)

Application

- For Obstruction light system

Specifications

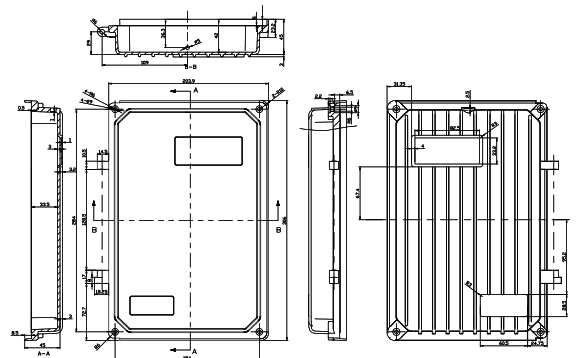
Description	Parameter
Operation voltage	AC85V~265V
Surge protector	65KA / 2.5KV
Power frequency	50HZ~60HZ
Power consumption	Support up to 300W
Photocell sensitivity	30-70 lux (optional)
Flashing	20-60 times/min (optional)
Ambient temperature	-30 ° C ~ +60 ° C
Size	350x300x120 (mm)



• Inside view



• Surge protector



Wiring method

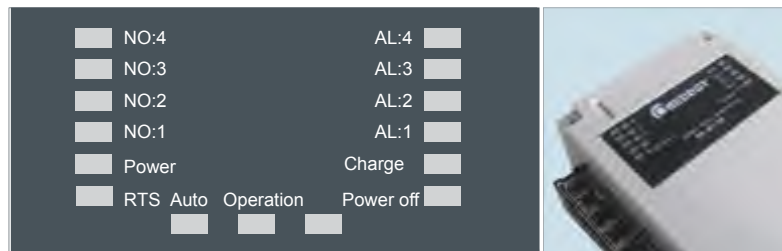
Please connect the power cord according to the label instruction

1	2	3	4	5	6	7	8	9	10	11	12	13
⏏	N	L	NULL	N	L	N	L	NULL	N	L	N	L
Poewr			Lamp1		Lamp2		Lamp3		Lamp4			

"Power" - controller power input
Lamp1, Lamp2, Lamp3, Lamp4 - connect to aviation obstruction light separately

14	15	16	17	18	19	20	21	22	23	24	25	26
Com	NC	Com	NC	Com	NC	Com	NC	Com	NC	NULL	+	-
Lamp1 Alarm	Lamp2 Alarm	Lamp3 Alarm	Lamp4 Alarm	Power	Alarm					Photocell		

Lamp1 Alarm, Lamp2 Alarm, Lamp3 Alarm, Lamp4 Alarm - output alarm terminal

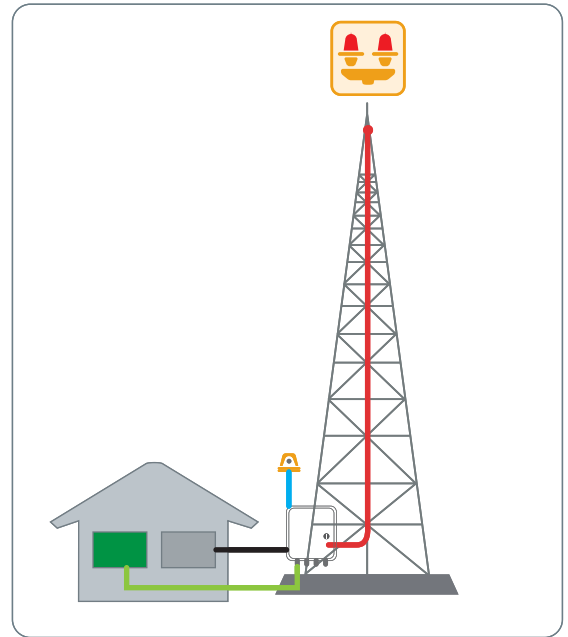


Photocell - photocell control terminal
NO:1, NO:2, NO:3, NO:4 are 4 aviation obstruction light

Green light means working fine. Red light AL1, AL2, AL3, AL4 means corresponding light has failed.

Please make sure all wiring job are correct. Connecting the power supply, then the controller will start to work

CBL04-A installation example



- Our control panel is high definition current detecting system, it will give an alarm when the power consumption of the light is lower than the setting value. It is reliable detecting product. there are some control panel designed by "voltage detecting" theory, actually, this kinds of control panel only give an alarm when the light completely fails, even when the light does not bright completely, sometimes the control panel will not give an alarm, it is not suggest-ed to use this kinds of control panel
- Check whether the power cables are well connected before powering it on.
- To avoid dangerous operation, please don't open any part of the controller while it's working.
- Please use the product strictly according to the instruction above.
- LANSING has a continuous product improvement policy, we reserve the right to change design and specifications without notice in advance.



• Inside view



• PHC01 Photocell



• DL32D Double Light



• DL32 Single Light



• ZG2B medium intensity

CBL04B Control Box

LANSING CBL04B controller is a reliable and robust control box for LANSING DL10&DL32 series double obstruction light.

Features

- Control “service+standby” double obstruction light, transfer to standby lamp in case of service lamp failure
- LED indicator for light operation status and failure alarm
- Alarm signal output, can connect to other external alarm device
- A manual photocell switch, which can switch to manual control mode during installation
- 8AH backup battery will support Reddot DL32 double light up to 3 hours working
- 85-265VAC universal voltage input, 48VDC output operation voltage for double light

Application

- For Double Obstruction light system

Specifications

Description	Parameter
Input voltage	85-265VAC, 50/60Hz
Output voltage	48VDC
Surge protector	65KA/2.5KV
Backup time with JUNHAN double light	3 hours
Battery type	VRLA
Remote Alarm	Dry contact, NC
Photoelectrical switch	70/100 Lux default, 0-1000lux adjustable
Protection degree	IP65, outdoor
Ambient temperature	-40-+60C
Humidity	Less than 95%, non-condensing
Dimension	500mm*400mm*200mm
Warranty	1 year



• Inside view

• Surge protector

• PHC01 Photocell

• DL32D Double Light

CBL02-A Control Box

CBL02A Control Box employs MCU IC control technology. With a pre-programmed software, CBL02A can control up to 2 aviation obstruction lights. When any light fails, the control box will send a alarm signal to alarm device in BTS in order for maintaneance staff to replace the light immediately.

if needed, it can turn on all lights in the system and make them Flash at the same time. (Control box that can control more than 2 lights are also available upon request).

A photocell is included with the control box, which can turn on/off the system at dawn/dusk. The photocell should be installed in open environment. CBL02A added a extra surge protection than CBL02

Features

- All lights on / off lights simultaneously
- Light failure indication, the corresponding indicator shows when any light failed
- Alarm signal output, can connect to other external alarm devices
- A manual photocell switch, which can switch to manual control mode during installation
- PHC01 automatic photocell
- The controller is indoor type (out-door type available upon request)

Application

- For Obstruction light system

Specifications

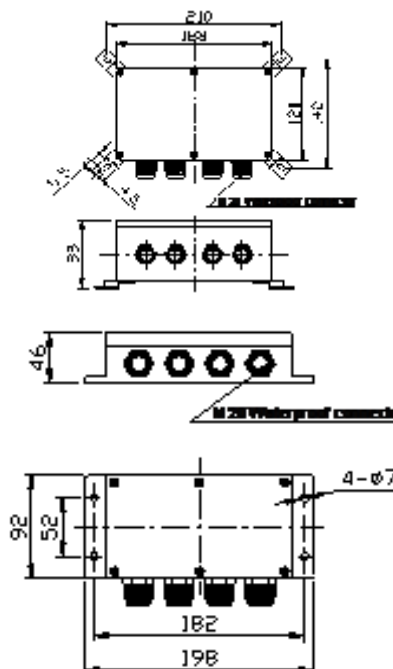
Description	Parameter
Operation voltage	AC85V~265V
Power frequency	50HZ~60HZ
Power consumption	Support up to 300W
Photocell sensitivity	30-70 lux (optional)
Flashing	20-60 times/min (optional)
Ambient temperature	-30 ° C ~ +60 ° C
Size	150x220x90 (mm)



Note

• Our control panel is high definition current detecting system, it will give an alarm when the power consumption of the light is lower than the setting value. It is reliable detecting product. there are some control panel designed by "voltage detecting" theory, actually, this kinds of control panel only give an alarm when the light completely fails, even when the light does not bright completely, sometimes the control panel will not give an alarm, it is not suggest

- ed to use this kinds of control panel
- Check whether the power cables are well connected before powering it on.
- To avoid dangerous operation, please don't open any part of the controller while it's working.
- Please use the product strictly according to the instruction above.
- LANSING has a continuous product improvement policy, we reserve the right to change design and specifications without notice in advance.



CBL04-AIDO Control box

CBL04 -AIDO is specially designed for voltage AC input and DC output outdoor controller installation, to control and monitor aviation obstruction lighting system.

CBL04-AIDO control box employs MCU IC control technology. With a pre-programmed software, control up to 4 ways aviation obstruction lights. In case of any medium intensity beacon or any level of low intensity sidelights failure, will send alarm signal to the controller and then output to remote monitoring system.

A photocell is deployed within the controller system, which can turn on/off the system from dusk to dawn automatically, easy for maintenance and trouble shooting. Once the photocell fails, all lights in the system will be on in a safe status.

Features

- Designed for AC100-240V input voltage and DC48V output obstruction lighting system
- Control up to three medium intensity beacons and 1 level of up to 4 units of low intensity single obstruction lights, also suitable for only single or double obstruction lighting system.
- Dry contact alarm relay for power supply, flasher, beacon, markers, photocell
- LED indicators in control board to indicate lights, power, photocell operation status
- Alarm relay for each sidelight level
- Alarm relay for each beacon
- Auto/manual mode control switch
- Alarm signal output, easy for connecting remote alarm monitoring device
- Combined with LANSING PHC01 photocell, which can turn on/off the system from dusk to dawn
- Surge protector for input and output

Specifications

Description	Parameter
Input power voltage	100-240VAC(50/60HZ)
Output operation voltage	48VDC
Surge protector	65KA/2.5KV
Protection class	IP65
Material (Two options)	1 : Cold-Rolled steel sheet, Ral-7035 Electrostatic Polyester 2 : Stainless steel SUS304
Operating temperature	-30° C +60° C



Cold-Rolled steel sheet



• Inside view



• PHC01 Photocell



• DL32D Double Light



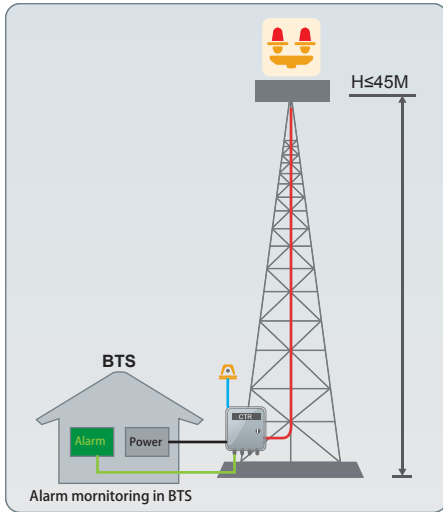
• DL32 Single Light



• ZG2B medium intensity

Typical System Application

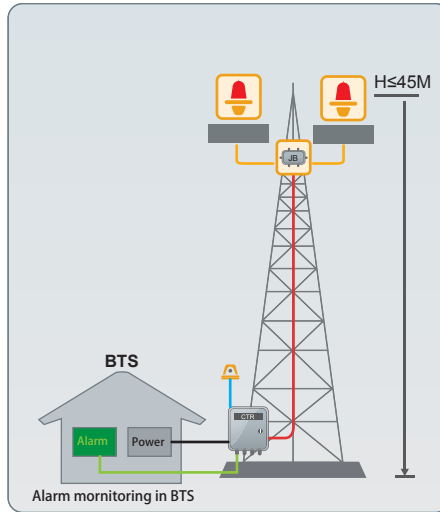
T45-D



1 double obstruction lighting system

- Control one low intensity double light on the top
- Under "service+standby" system, configured transfer relay in the control box, in case of service lamp failure, will transfer to standby lamp
- In "Service+service" type, either failure will output signal to the control box

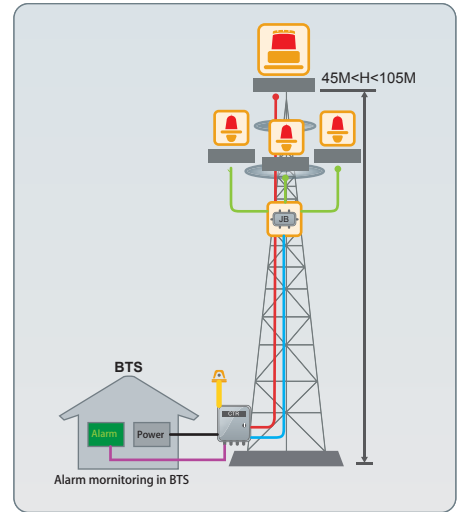
T45-2S



2 single obstruction lightings system

- Control two low intensity single lights on the top
- Under "service+standby" system, configured transfer relay in the control box, in case of service lamp failure, will transfer to standby lamp
- In "Service+service" type, either failure will output signal to the control box

T90-XMYS



1 medium intensity beacon+3 or 4 single low intensity obstruction lights

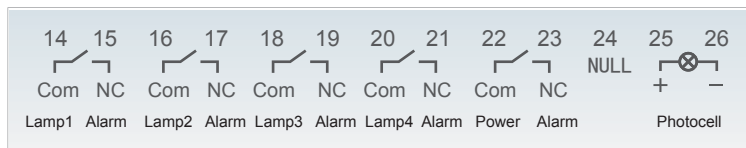
- One medium intensity light on the top and 3 or 4 single low intensity lights on 1/2 or 2/3 height of tower
- Alarm output for each medium intensity beacon
- Alarm output for each low intensity level

Wiring method

Please connect the power cord according to the label instruction



"Power" - controller power input
Lamp1, Lamp2, Lamp3, Lamp4 - connect to aviation obstruction light separately



Lamp1 Alarm, Lamp2 Alarm, Lamp3 Alarm, Lamp4 Alarm - output alarm terminal



Photocell - photocell control terminal
NO:1, NO:2, NO:3, NO:4 are 4 aviation obstruction light indicators individually.

Green light means working fine. Red light AL1, AL2, AL3, AL4 means corresponding light has failed.

- Please make sure all wiring job are correct. Connecting the power supply, then the controller will start to work

LANSING Control Panel Breakdown

Control panel can provide extra functions in a Obstruction Light system has more than 1 light. With control panel, the monitoring center can see real-time working status of the Obstruction Light system on each tower. When monitoring center operators found any system failure, they can send maintenance staff to replace corresponding parts. The maintenance is very important to keep a clear open airway.

A control panel can switch 110/220 AC power to DC low-voltage power supply, which can make the obstruction light installation job more safer for field workers. LANSING recommend all lights being 24VDC in a Obstruction Light system that work with control panel.

Major functions of LANSING control panel

- System synchronization, all lights turn on & off at the same time
- Light failure alarm
- Obstruction Light system power supply alarm
- Photocell alarm
- Flashing / steady switch available
- System Manual / auto switch available when installation
- Photocell sensitivity adjustment available.

LANSING provide 2 series control panel, CBL02 series & CBL04 series. Totally 4 models, CBL02 & CBL04 are for indoor purpose, CBL02A & CBL04A are for outdoor purpose. More control will be available soon, for further information on our new control panel please contact with our sales.

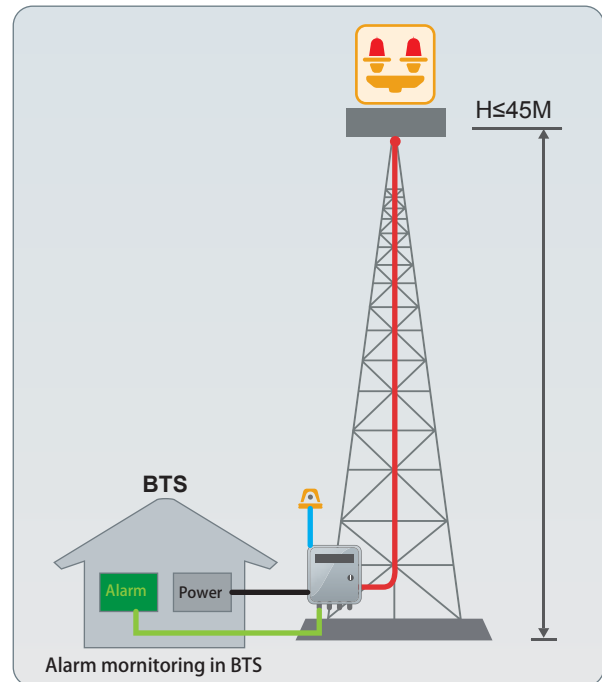
CONTROL PANEL SPECIFICATIONS

Model	CBL02 series		CBL04 series	
	CBL02	CBL02A	CBL04	CBL04A
Max lights controled	2 lights	2 lights	Up to 4 lights	Up to 4 lights
Surge protection availability	No	Yes	No	Yes

Other extra function could be available upon customer request.

- RF wireless alarm (<200 meters distance)
- GPRS/GSM alarm SMS sending
- Built-in GPS global timer
- Others

CBL04A installation sample



Note : surge protection module is only available in CBL02A & CBL04A

PHC01 Photocell

Photocell, also known as photo sensor, is a device to detect environment intensity illumination. It is often used in street light system and obstruction light system. When working in an obstruction light system, it can turn the light on at dusk & turn off the light at dawn, automatically.

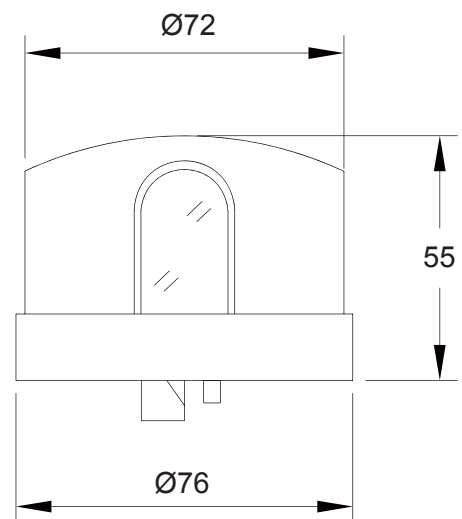
The installation will requires it face north sky, atop of Base Station or on steel tower. It is also important that there is no other light source disturbance around the photocell in order to keep it working right.

Features

- An auto switch for street light & obstruction light.
- Delay response prevents false switching due to light from vehicles lightning, etc.
- Regulated voltage and silicon photocell maintain accurate turn on /off control points.
- Low power consumption through a unique regulator circuit, resulting low internal temperature rise which also ensures longer serving lifetime.

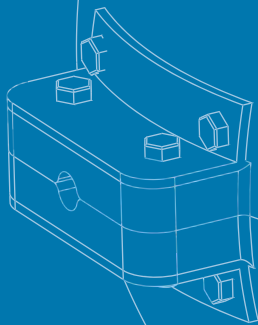
Specifications

Description	Parameter
Nominal Voltages	12-60VDC; 120-277VAC (it should keep the same voltage as control panel when working in OB light system)
Maximum Load	1000 watt /1800 VA
Life Cycle	5000 operations minimum (about 13 years)
On / Off	70 / 100 Lux
Delay Time	3 to 5 seconds
Operating temperature	-40° C ~ +70° C
Dielectric Strength	5000 volts between current carrying parts and metal surfaces
Power Consumption	1 watt
Photocell	Cadmium sulphide (Cds)
Materials	Cover: UV stable PC Base: PC with moisture resistant gasket Contacts: Hard brass
Warranty	5 years



Other

- BZ01 Obstruction Marking Sphere
- BZ02 Obstruction Marking Sphere



BZ01 Obstruction Marking Sphere

Aviation obstruction marking sphere is designed to provide daytime visual warning of electricity transmission line for aircraft pilots, especially cross river high voltage transmission lines.

A marker should be of one colour. When installed, white and red, or white and orange markers should be displayed alternately. The colour selected should contrast with the background against which it will be seen.

Functions & Features

- Tyril polyester resin material, which is much stronger than reinforced Fiberglass.
- Not easy to break during transportation & installation.
- Super corrosion resistant character, stainless steel bolt.
- Stacking compatible design, save storage space and freight charge.
- Night working option with extra reflecting strip.

Application

- Power transmission line

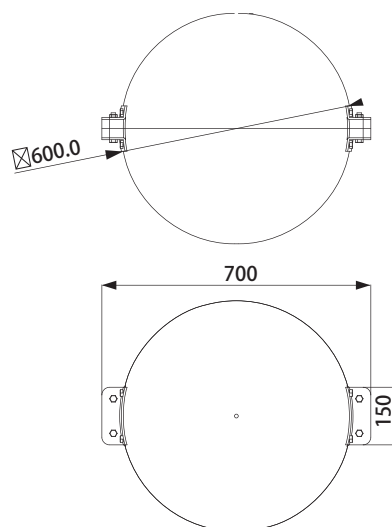
Specifications

LIGHT OUT-PUT	
Visible Distance	1200 meters
Voltage Range	35KV ~ 1000KV
Diameter	600mm, 900mm
Color	Orange, Red, White
Weight	2.5KG
Option	Reflective strip for night aid

Order codes

Series	Diameter	Reflective Strip
BZ01	600	RS
	900	

For example, BZ01600RS means a 600 diameter Obstruction Sphere, with reflective strip



BZ02Obstruction Marking Sphere

Aviation obstruction marking sphere is designed to provide daytime visual warning of electricity transmission line for aircraft pilots, especially cross river high voltage transmission lines.

A marker should be of one colour. When installed, white and red, or white and orange markers should be displayed alternately. The colour selected should contrast with the background against which it will be seen.

Functions & Features

- Tyril polyester resin material, which is much stronger than reinforced fiberglass.
- Not easy to break during transportation & installation.
- Super corrosion resistant character, stainless steel bolt.
- Stacking compatible design, save storage space and freight charge.
- Night working option with extra reflecting strip.

Application

- Power transmission line

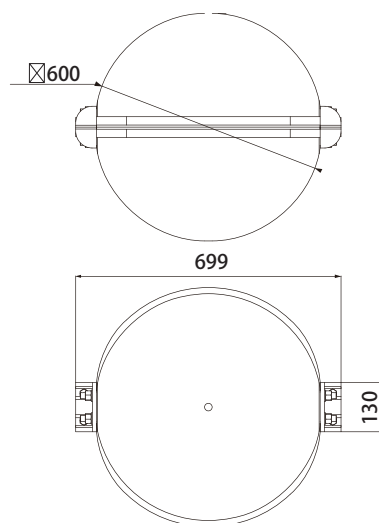
Specifications

LIGHT OUT-PUT	
Visible Distance	1200 meters
Voltage Range	35KV ~ 1000KV
Diameter	600mm, 900mm
Color	Orange, Red, White
Weight	2.5KG
Option	Re flective strip for night aid

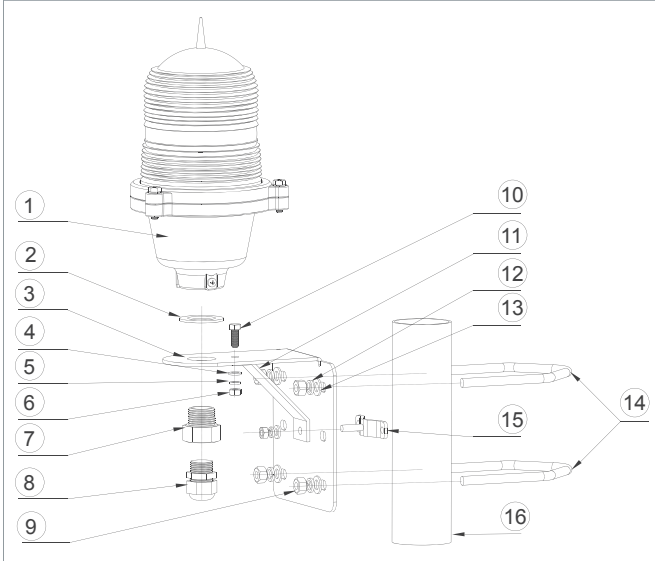
Order codes

Series	Diameter	Re flective Strip
BZ02	600	RS
	900	

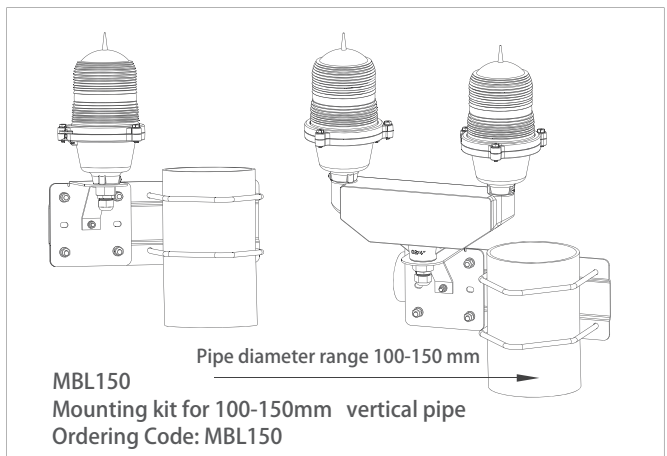
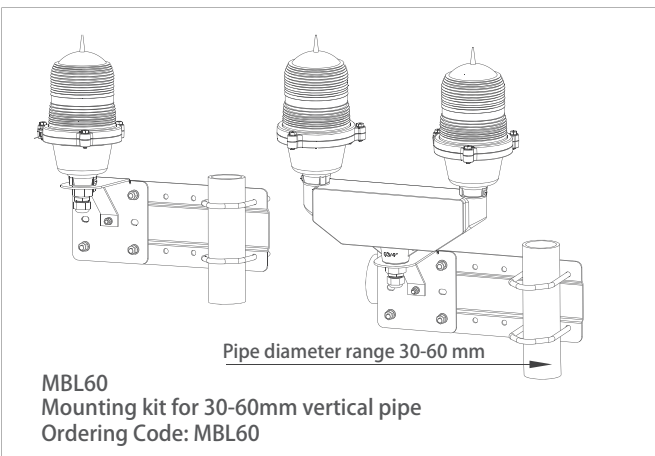
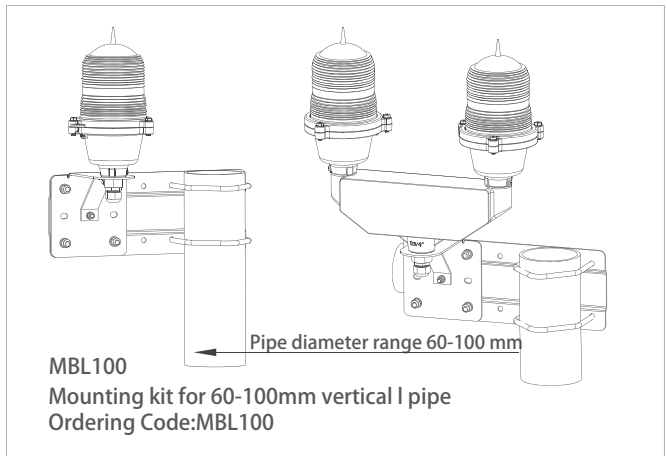
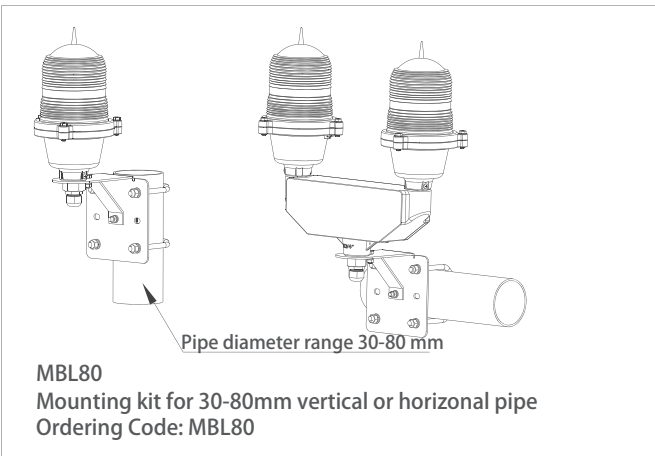
For example, BZ02600RS means a 600 diameter Obstruction Sphere, with reflective strip



Installation Accessories



Single light mounting kit parts list			
Ref No	DESCRIPTION	MATERIAL	QUANTITY
1	Single lamp		1
2	Gasket	Silicon	1
3	Fixed board	SUS #304	1
4	6mm washer	SUS #304	2
5	6mm spring washer	SUS #304	2
6	M6hex nut	SUS #304	2
7	3/4'joint	SUS #304	1
8	Cable waterproof joint (PG13.5)	PA66	1
9	M8hex nut	SUS #304	4
10	M6 × 25hex bolt	SUS #304	1
11	Support clip	SUS #304	1
12	8mm spring washer	SUS #304	4
13	8mm washer	SUS #304	4
14	M8 U-bolt	SUS #304	1
15	M6Trapezoidal card	SUS #304	1
16	Pipe		1





Installation & Commissioning

Assembly & wiring diagram

Single light

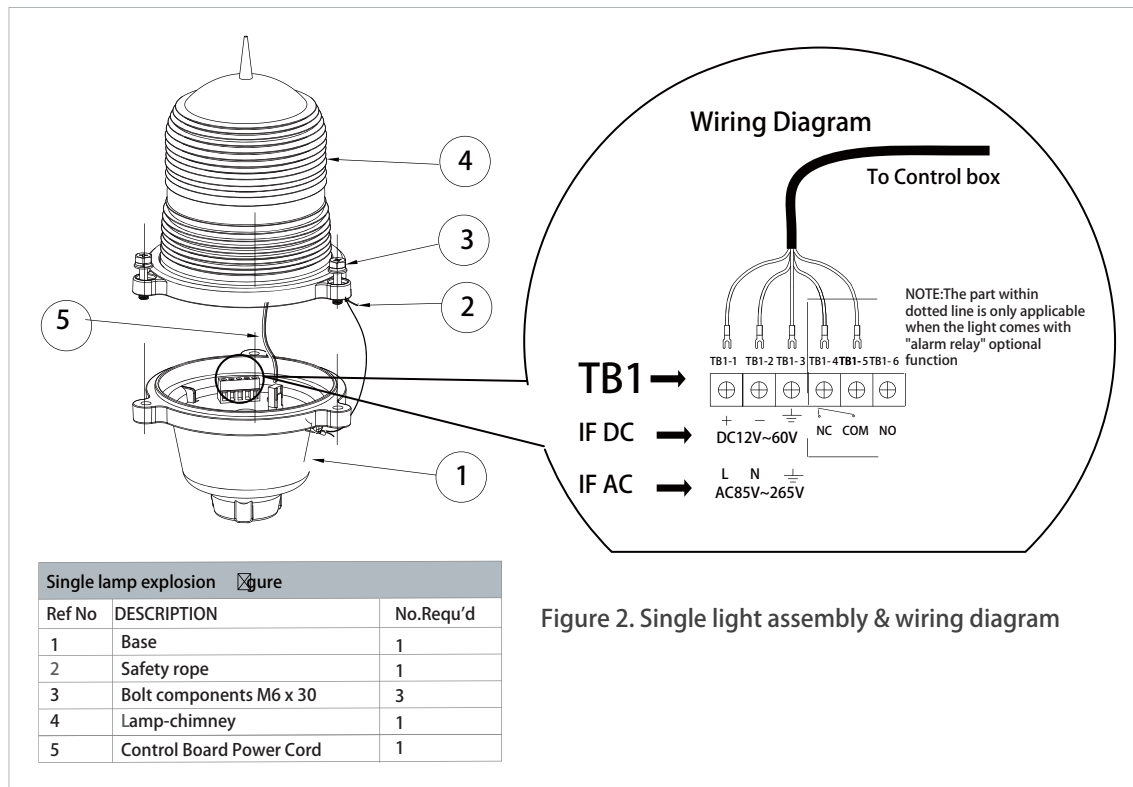


Figure 2. Single light assembly & wiring diagram

Double light

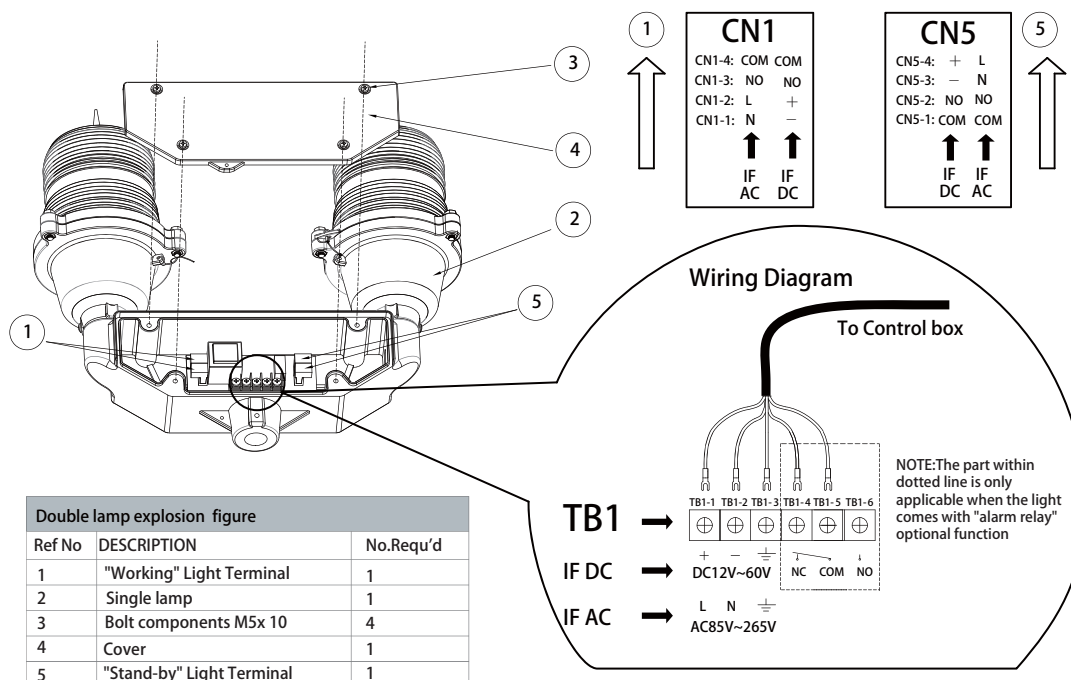


Figure 3. Double light assembly & wiring diagram

Double lamp explosion figure		
Ref No	DESCRIPTION	No.Requ'd
1	"Working" Light Terminal	1
2	Single lamp	1
3	Bolt components M5x 10	4
4	Cover	1
5	"Stand-by" Light Terminal	1

Installation Recommendation

TY10 Series Application Introduction

TY10/TY10A/TY10W common functions & features

1. Solar powered obstruction light, self-contained, red color
2. Peak intensity >15cd
3. Flashing, TY10 built with 40FPM (Flash pwe minute) ,TY10A&TY10W 40 90 FPM adjustable
4. Autonomy in cloudy & rainy days 20days

TY10/TY10A/TY10W differentials



TY10 Solar Powered Obstruction Light

- No synchronization when more than one light being applied
- No light failure alarm report



TY10A Solar Powered Obstruction Light

- Synchronization available when more than one light being applied, in the case of working with junction box or control box
- Light failure alarm report available, in the case of working with junction box or control box
 - * Low current alarm report
 - * Solar panel fail alarm report
 - * Battery fail alarm report



TY10W Solar Powered Obstruction Light


- Synchronization available when more than one light being applied, in the case of working with wireless control box
- Light failure alarm report available, in the case of working with wireless control box
 - * Low current alarm report
 - * Solar panel fail alarm report
 - * Battery fail alarm report

TY10 Application Plan

Functions & features:

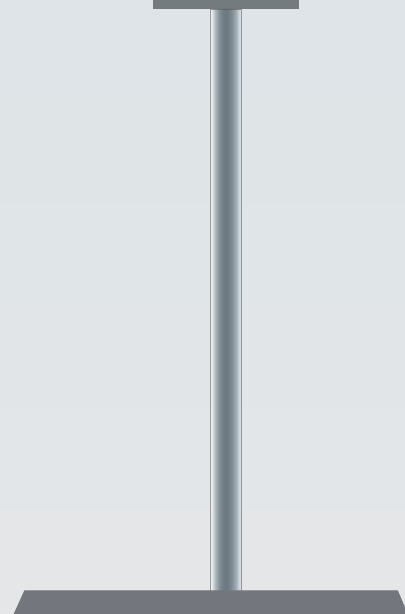
- Mostly used atop of a mono-pole or mast

Legend

	TY10	1
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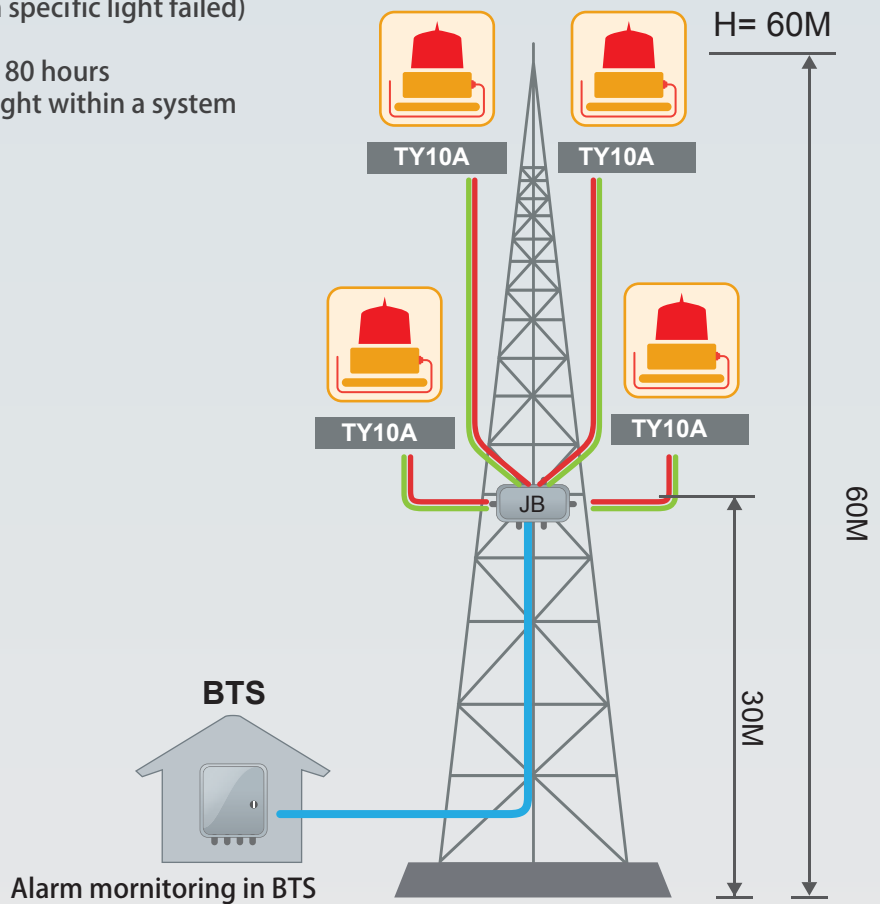
TY10








TY10A Application Plan A

Functions & features:

- Work in group, one-way light failure alarm report (can't report which specific light failed)
- Dry contact type relay
- Alarm signal duration max 80 hours
- One light work as master light within a system (adjustable by DIP switch)

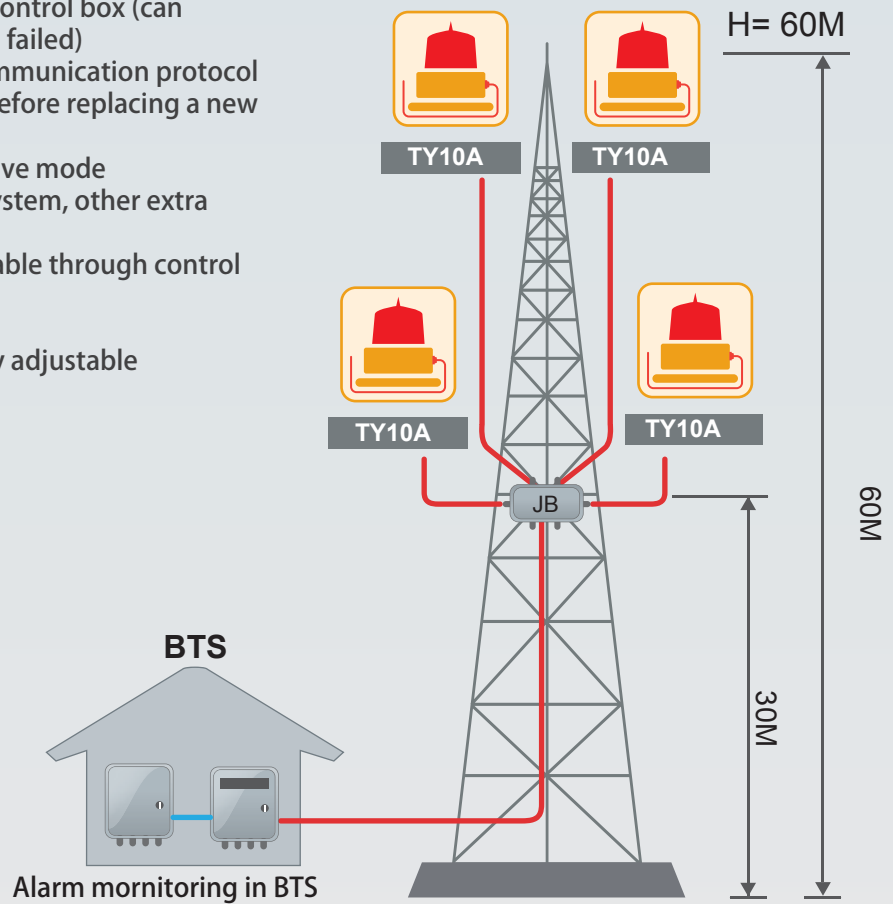







Legend		
	TY10A	4
	Junction box	1
	3*1.0 core suffix cable	depends
	2*1.0 core suffix cable	depends
	(N+1)*1.0 core suffix cable	depends

TY10 Application Plan B

Functions & features:

- Work in group, multi-way light failure alarm report available through control box (can report which specific light failed)
- Alarm through RS485 communication protocol
- Alarm signal consistent before replacing a new light
- No need to set master/slave mode
- With control box in the system, other extra functions available
 - * Flash frequency adjustable through control box
 - * manual/auto switch
 - * Photo sensor sensitivity adjustable

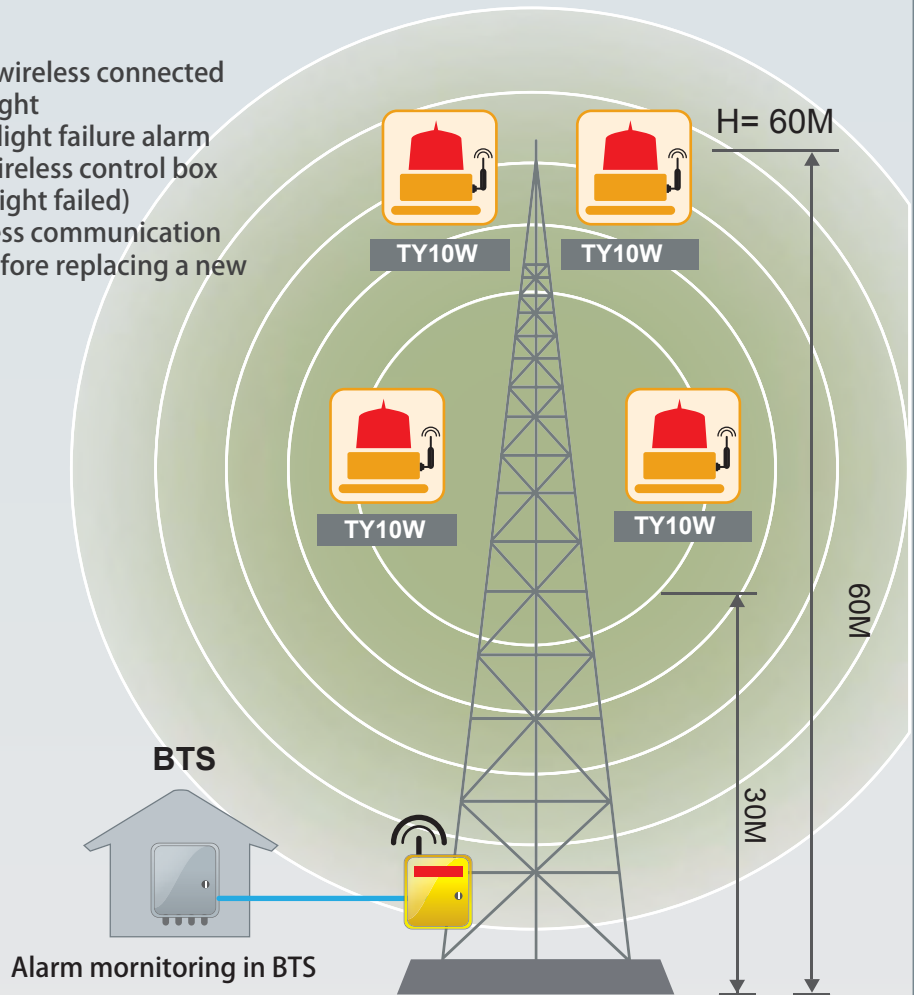





Legend		
	TY10A	4
	Junction box	1
	CBL04A	1
	3*1.0 core suffix cable	depends
	(N+1)*1.0 core suffix cable	depends

TY10W Application Plan

Functions & features:

- All lights in the group are wireless connected in series, no master/slave light
- Work in group, multi-way light failure alarm report available through wireless control box (can report which specific light failed)
- Alarm through 2.4G wireless communication
- Alarm signal consistent before replacing a new light



Legend		
	TY10W	4
	CBLW04	1
	(N+1)*1.0 core suffix cable	depends

Warranty Policy



LANSING products are warranted to be free from manufacturing defects in materials and workmanship starting from the date of delivery. The actual warranty period of the product depends on the product category.

Limitation of Liability

The provisions of the warranty are in lieu of any other warranty, whether expressed or implied, written or oral. LANSING's liability arising out of the manufacture, sale, or supplying of the product and its use, whether based on warranty, contract, negligence, product liability, or otherwise, shall not exceed the original cost of the product. In no event shall LANSING be liable for unintended or consequential damages, including, but not limited to, a loss of profits or use damages arising out of the manufacture, sale, or supplying of the product.

Replacement

- Due to the high rate of international air transportation and custom clearance paper works, we may not require customers to return products as long as the customer could provide enough materials of the incorrect product. In that case, LANSING will send out replacement product once our QC approved the application.
- Before returning a LANSING product, please provide information like model, quantity, your region, and product photo or situation statement of the product in order to get quicker service. Please contact info@lansinglight.com, or contact with individual sales person.

Warranty Periods

Products Category	Warranty Period
Light & control device	5 Years
Solar panel	10 Years
Rechargeable battery	2 Years
Accessory	1 Years

Note

- Please make sure connect the product according to the wiring diagram on the category.
- For products containing rechargeable battery, LANSING normally give 2 years warranty on the battery unless there is specific stating on the product's category.
- For products containing solar panel & rechargeable battery, the battery's power may reduce to insufficient level during storage and transit. In this case, please first put the product under sunlight at daytime for several days for battery charging purpose.
- Product warranties remain valid provided the product was properly installed and used. Defects, malfunctions, or failures of the warranted product caused by damage resulting from acts of God (such as floods, fire, etc.), environmental and atmospheric disturbances, other external forces such as power line disturbances, host computer malfunction, plugging the board in under power, or incorrect cabling, and damage caused by misuse, abuse, and unauthorized alteration or repair, are not warranted.
- For large order projects, customers may purchase an extended maintenance contract. Some parts may have a limited warranty from the original supplier of the parts. Please contact LANSING's sales department if you would like to extend the maintenance period of a LANSING product.

For customers

Thank you for taking the time to read our products!

If you are interested on any LANSING product, please don't hesitate to contact us. Our sales people will come back to you at first time.

For better understanding for the right product you are looking for, or the type of solution you will need, we recommend that you state your situation as much as possible, for example :

- Which industry the product will be applied to, telecom industry, tall building, etc
- Which position the product will be applied to, a 60 meters telecom tower, etc
- Any key functions must be included in the product, relay type alarm output, etc
- Any special industrial regulations that must be followed, Transport Canada rules, Australia CASA rules, etc
- Others like the region you are from, your project budget, your project dead-line, etc

In some region, we have distributor already. In such case, we will forward your request to our distributor. Our distributor can support you better locally.

Any other questions please don't hesitate to contact us, we will be more than happy to assist!

For distributors

LANSING welcome distributors that have expertise knowledge to sell our product. If you are interested on distributing LANSING product in your region, please send email to us for further discussion. You can state your interest, together with background information like:

- Concentrating industry
- Interested areas
- Interested products
- preferred commercial terms, etc

