Aviation Ground Lighting
Products, Solutions and Services
Advanced Airport Engineering
About ADB Airfield Solutions

ADB Airfield Solutions (ADB) is a world leading airfield technology company providing advanced, integrated and sustainable solutions for visual guidance.

In a world where airport safety remains an elevated priority and runway incursion accidents are on the rise, technologies such as airfield lighting systems, precision approach and landing systems, surface movement radars, and visual docking guidance systems are imperative for ensuring airport safety.
ADB plays a major role through its comprehensive and internationally certified product range of safety solutions and management systems. The company’s integrated solutions such as Advanced Surface Movement Guidance & Control Systems (A-SMGCS) include products and services to ensure safety from landing to take off, covering LED runway and taxiway lights, guidance signs and microprocessor controlled constant current regulators.
ADB offers an innovative portfolio of customized services ranging from design and development, installation, maintenance to consulting and training. These solutions support airport operations around the world to improve their performance, reliability and safety. Safely supporting ground traffic at more than 2000 airports worldwide, night and day, ADB’s solutions have been successfully integrated at both civil and military airports and at heliports.
ADB offers best-in-class products, solutions and services that improve safety and operational efficiencies, and reduce operating costs. The company has the largest installed product base in the industry and its products have been successfully operating on all continents under various climate conditions.

ADB products include:

- Airfield Ground Lighting (AGL) whether incandescent, LED or solar
- AGL power equipment
- Airfield lighting control system (ALCS)
- Individual lamp control and monitoring system (ILCMS)
- A-SMGCS ground-movement routing and visual guidance
- Solutions for preventing and alerting runway incursions

ADB also works with industry leading partners to offer products such as docking stations, photometry solutions, mounting systems, and poles and masts for approach lights. The company’s offerings cover the length and breadth of the airfield making it a proven end-to-end airfield solutions expert in the industry today.
As the leading designer and manufacturer of innovative products, solutions and services for airfield operations around the world, ADB’s mission is to provide customers the latest technology, at uncompromising levels of quality to ensure full availability and reliability.

From day one of a project, a team of specialized engineers is available to support customers in all airport or heliport related lighting safety issues. ADB services customers through the lifecycle of the lighting products and solutions. The company stands out by providing end-to-end services support to its customers:

- Project Based Services
  - Design
  - Installation and supervision
  - Commissioning
  - Training

- After Sales Services
  - Spare Parts
  - Training
  - Maintenance

The benefits of working with ADB include improved operational performance and safety resulting from use of internationally certified equipment and systems, improved technical and operational competency of airport staff, high level maintenance procedures, lower maintenance costs and continuous access to new technology and best practices in the industry.

Christian Onselaere, CEO
Commitment to excellence

With a worldwide presence spanning more than 65 years, ADB offers an innovative portfolio which sets standards in safety, performance and quality.

The company’s production sites, as well as a majority of its suppliers and subcontractors, are ISO 9001 certified. All company products either meet or exceed the requirements of the Federal Aviation Administration’s (FAA) Airport Lighting Equipment Certification Program, and the requirements of the International Civil Aviation Organization’s (ICAO) Audit Program.

But perhaps the company’s commitment to excellence is best illustrated in having the leading airports of the world as customers. These include London’s Heathrow and Manchester in the United Kingdom, Charles de Gaulle in Paris, France, Chicago O’Hare International Airport, Hartsfield - Jackson Atlanta International Airport, and Denver International Airport in the United States to name a few.
ADB endeavours to build a strong global organization that focuses not only on growing its business, but also on providing sustainable solutions to the wider stakeholder community including shareholders, employees, residents and customers. As part of its strong commitment to sustainability, ‘green thinking’ is engrained in all of ADB’s business operations.

As airports place increasing importance on reducing their environmental impact, ADB’s green airport philosophy can assist with a wide spectrum of energy-efficient products and solutions. In fact, ADB has developed the industry’s first comprehensive, energy-efficient airfield ground lighting system that covers all lighting applications and power supply solutions from landing to gate. One of the principal technologies used to achieve these goals is LED lighting. LED fixtures reduce energy consumption and also enhance the performance, efficiency and safety of products. According to statistics, LED lights can reduce energy consumption by up to 90% when compared to traditional incandescent fixtures.

For airports looking to meet their sustainability goals, ADB also provides advisory services. Airports around the world can thus rely on ADB as an environmentally conscious partner who supports their efforts with high quality, energy-efficient products and solutions.
ADB: the soaring history of a high flier

ADB Airfield Solutions is known today as a world leader in airport lighting and visual guidance systems. This adventurous success story had its maiden flight many decades ago. It all started with Adrien De Backer, the man whose initials gave the company its name....
Prelude (1920-1947): Electrical resistors, a new range of possibilities
Adrien De Backer, a creative businessman from Brussels, started manufacturing electrical resistors and variable transformers in the twenties. These made their way to laboratories: ULB professor and balloonist Picard is one of the earliest and best known customers. De Backer also discovered that he could control the light intensity of lights using resistors, and in 1925 he released the first theatre spotlights and their control panels to the market. Floodlights and light organs by Etablissements Adrien De Backer found a home in many theaters, opera and movie houses on home soil and abroad.

The early years (1947-1953): the first steps in airfield lighting
Once the dust had settled after the war years, ADB once again took up its lighting activities and expanded them to include outdoor lighting. However, the real defining moment came in 1947, when Sabena took the decision to start offering night flights. Because the name Adrien De Backer was synonymous with progressive (outdoor) lighting, Brussels national airport approached them to supply and install the visual guidance lighting system. With its years of expertise the company made quick work of the job at hand.

Realizing the potential offered by new and upgraded airports - the reconstruction effort after WW II - the company set its sights firmly on airport lighting or Aviation Ground Lighting. After winning a public tender in 1951, ADB was tasked to provide eight NATO airbases in Belgium with AGL systems. ADB designed and manufactured all the components for the visual guidance system and installed the electrical and lighting components on site. Over the course of the next five years, another five contracts for NATO airports followed suit.

The breakthrough (1953-1987): ADB goes international, always there with the latest technology
The Belgian market proved to be very small. In 1953 ADB took a step abroad and installed the visual guidance lighting system at the Kisangani Airport (previously known as Stanleyville) in Congo. The airports of Turin, Dublin, Baghdad, Teheran and Riyadh were soon knocking at ADB’s door too: the international breakthrough was a reality. The company did not drag its feet in the technology arena either: in 1958 it installed a Touchdown Zone lighting system for the first time, which eliminates the disorientating ‘black hole effect’ in the final phase of the approach to land. What is more, these lights are embedded in the runway pavement on both sides and thus have no trouble withstanding the impact of the landing.
In 1964 ADB introduced in-pavement lights that could be installed along the centerline of the runway. This made landing even safer for pilots, certainly so in low visibility and poor weather conditions. By this time ADB had acquired a customer base all over the world and a second manufacturing plant was on the cards. In 1979 ADB took over the American company ALNACO. Since then, the company has been manufacturing all lighting and visual guidance components for the entire North American market from Columbus, Ohio.

Further specialization (1987-2009): frontrunner in automation, miniaturization and durability

In 1987 the German electrical engineering and electronics giant Siemens AG took over the Belgian ADB. At that time Siemens was already active in the aviation sector and saw the perfect partner in frontrunner ADB for strengthening its market position. In the interim, a great number of new developments had seen the light: everything had become faster, smaller and computer-driven. ADB had a great number of firsts under its belt:

- In 1991 ADB installed the first ‘smart’ communication and operating system (BRITE) in series at the Seattle airport.
- ADB set a new industry standard in 1993 with the new “F” range inset lights. These lights literally shine in terms of performance, low power consumption and long lifespan.
- In 1998 ADB installed the first integrated lighting system (Advanced Surface Movement Guidance Control System) ever at the Oslo international airport. This is a unique automatic system that guides airplanes faultlessly through the taxiing procedure, even in zero visibility!
- In 2003 halogen lamps, that had always been used until then, made way for LEDs (LTS/C): yet another more energy efficient standard set by ADB. The lamps have a lifespan of 60 times longer than the old ones and use 75% less electric energy.
- In 2009 ADB reached a new milestone in sustainability: in association with Carmanah, a solar energy specialist, the company gave the market a series of Aviation Ground Lighting LEDs that use solar energy.
- The Runway Status Lights system (2009) and the Runway Incursion Alert System (2011) warn pilots of possible runway occupancy. Thanks to a unique sensor, developed by ADB to monitor holding positions, developments such as these have a direct impact on safety.
Start your engines (2009 - ...): into the future at cruising speed

In November 2009 ADB was sold to the private equity group Montagu and once again the company had to stand on its own feet, but continued to innovate at the same pace and adjust to the ever-changing market.

In 2009 Manchester airport drew the sustainability card: The new LED lighting system supplied by ADB forced down CO2 emissions by 71%, compared to the previous halogen system.

In 2011 ADB opened a production unit in Tianjin, China and thereby made the most of the economic prospects in Asia. ADB also expanded its network commercially with decentralized sales offices and in 2012 with remote offices in Italy and Brazil. Important and prestigious achievements in Pudong (China), Doha (Qatar), Donetsk (Ukraine), Kuala Lumpur (Malaysia) and Berlin Brandenburg International (Germany) were added to the growing list of references. (all our references can be found on www.adb-airfieldsolutions.com)

After celebrating 65 years of Airfield Solutions activities, ADB is more forward focused than ever. ADB intends to keep anticipating the trends of a fast-changing sector: How can airports be made even safer? How many more passengers and cargo could we soon be transporting by air? And what is the impact thereof on airports, their capacity, their signage, their visual guidance systems? How do we limit the environmental impact of flying and of airports? ADB continues to innovate, looking to set new standards for the sector, as ADB’s proud record shows ...

In 2011 ADB opened a production unit in Tianjin, China.
Lighting Systems Layout according to ICAO Standards
Lighting Systems Layout according to ICAO Standards

Precision approach runway lighting is determined by prevailing visibility conditions. ICAO has developed standard AGL guidelines for each of the different categories.
### Categories of approach path and runway lighting

<table>
<thead>
<tr>
<th>Category</th>
<th>Minimum visual range of lights on runway (RVR)</th>
<th>Decision height (H) (Cloud ceiling)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAT I</td>
<td>≥ 550 m</td>
<td>≥ 60 m</td>
</tr>
<tr>
<td>CAT II</td>
<td>≥ 350 m</td>
<td>≥ 30 m</td>
</tr>
<tr>
<td>CAT III A</td>
<td>≥ 200 m</td>
<td>&lt; 30 m No decision height</td>
</tr>
<tr>
<td>CAT III B</td>
<td>≥ 50 m</td>
<td>&lt; 15 m No decision height</td>
</tr>
<tr>
<td>CAT III C</td>
<td>No RVR</td>
<td>No decision height</td>
</tr>
</tbody>
</table>

### Lighting system requirements for CAT I to III

<table>
<thead>
<tr>
<th>Lighting Systems</th>
<th>Category</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approach lighting (CALVERT or barrette system)</td>
<td>CAT I</td>
<td>-</td>
</tr>
<tr>
<td>Side row barrette lighting with 150 m crossbar</td>
<td>CAT II</td>
<td>For CAT II/III</td>
</tr>
<tr>
<td>Sequenced flashing light</td>
<td>CAT II</td>
<td>Sequenced flashing light optional. In CAT II/III installations, may be switched off in the zone between the threshold and the 300 m bar.</td>
</tr>
<tr>
<td>Precision approach path indicator (PAPI)</td>
<td>CAT II</td>
<td>In CAT II/III installations, the visual approach slope indicator may be switched off</td>
</tr>
<tr>
<td>Threshold lighting</td>
<td>CAT III</td>
<td>With additional wing bars and RTIL lights, as required</td>
</tr>
<tr>
<td>Runway edge lighting</td>
<td>CAT III</td>
<td>-</td>
</tr>
<tr>
<td>Runway center line lighting</td>
<td>CAT I</td>
<td>Optional in CAT I installations</td>
</tr>
<tr>
<td>Runway end lighting</td>
<td>CAT III</td>
<td>-</td>
</tr>
<tr>
<td>Touchdown zone lighting</td>
<td>CAT II</td>
<td>For CAT II/III</td>
</tr>
<tr>
<td>Taxiway edge lighting</td>
<td>CAT III</td>
<td>Also recommended for curves in CAT II/III</td>
</tr>
<tr>
<td>Taxiway center line lighting</td>
<td>CAT III</td>
<td>In the case of complex taxiway systems and high traffic volumes, recommended also for CAT I</td>
</tr>
<tr>
<td>Rapid exit taxiway indicator lighting</td>
<td>CAT I</td>
<td>In the case of complex taxiway systems and high traffic volumes, recommended also for CAT I</td>
</tr>
<tr>
<td>Stop bars</td>
<td>CAT I</td>
<td>Also recommended for CAT I</td>
</tr>
<tr>
<td>Runway guard lights</td>
<td>CAT I</td>
<td>CAT I only when dense traffic</td>
</tr>
<tr>
<td>Signs</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

- **required**  
- **optional**  
- **not required**
Quality that Deserves the Name

The first doctrine of any successful international business venture: you are as good as the products you sell. Developing high-quality products and solutions that deserve the name is always priority one.
Approach Lights

Whether inset or elevated, continuously burning or flashing, low- or high-intensity approach lighting, the extensive ADB product portfolio has a solution for you.

Multipurpose high-intensity inset approach light
White centreline and cross bar, red side row barrettes with 315 W 12" dia lights with only 12.7 mm protrusion.

**FAP**
*Cat. leaflet A.02.312e*

Multipurpose high-intensity elevated approach light
White for centreline lights, red for side row barrettes with max. 150 W lamp.

**UEL-1-150**
*Cat. leaflet A.02.630e*

**Flashing lights**
Used in sequenced flashing and RTILS systems. Each light unit uses a low voltage Xenon lamp, controlled by its own electronic control box. Available as FAA-compliant elevated and inset light.

**UEL-1-120 (Elevated Flashing Light)**
**FFL-1-120 (F-Range Flashing Light)**
*Cat. leaflet A.02.620e*

**Precision approach path indicator**
The world’s only single channel PAPI, providing a very sharp red/white transition over the full beam. Lamp power only 315 W.

**SPL**
*Cat. leaflet A.02.515e*

**Low- and medium-intensity approach light**
Used as addition to HI approach lighting or on secondary airports where HI lighting is not justified.

**Various types**
*Cat. leaflet A03.150*

For more information: www.adb-airfieldsolutions.com
Since their introduction, our F-range inset lights have set new standards in the industry. They remain the most complete and versatile family of inset lights on the market.

**Elevated high-intensity runway edge light**
Bidirectional fitting with omni-directional component for circling guidance and 150 W lamp. Also suitable as a threshold and/or end light, and as turning pan light with other lens and lamp ratings.

*BPE*
*Cat. leaflet A.03.111e*

**High-intensity elevated threshold or end light**
Unidirectional fitting for green or red light using respectively 150 or 65 W.

*UEL-1-150*
*Cat. leaflet A.02.630e*

**LED Elevated runway edge light**
Bidirectional fitting with omni-directional component for circling guidance and only 30 W power consumption.

*EREL / ERES*
*Cat. leaflet A.03.120*

**LED Elevated medium-intensity light**
Used on secondary airports where HI lighting is not justified.

*EMIL*
*Cat. sheet 3022e*

For more information: www.adb-airfieldssolutions.com
### Runway Lights

#### LED high-intensity inset runway centreline light
Bidirectional 8” fitting, 12.7 mm protrusion. Uses only 15W per side.

**DRC**  
*Cat. leaflet A.03.510e*

#### High-intensity inset runway centreline light
Bidirectional 8” dia. fitting with 12.7 mm protrusion using two 48 W 1,500 hrs cold mirror halogen lamps.

**FRC**  
*Cat. leaflet A.03.252e*

#### Low-intensity inset runway edge light
Omnidirectional 8” dia. fitting with 10 mm protrusion using halogen lamps rated 45 to 65 W 1,000 hrs.

**FTO**  
*Cat. leaflet A.03.441e*

#### High-intensity runway touchdown zone light
Bidirectional 8” dia. fitting, 12.7 mm protrusion. Uses only 15W

**DTZ**  
*Cat. leaflet A.03.510e*

#### High-intensity runway touchdown zone or RETILS light
Unidirectional 8” dia. fitting with 12.7 mm protrusion using one 48 W 1,500 hrs cold mirror halogen lamp.

**FTZ**  
*Cat. leaflet A.03.242e*

#### High-intensity combined inset runway threshold and end light
Bidirectional 12” dia. fitting with 12.7 mm protrusion using three 105 W 1,000 hrs cold mirror halogen lamps.

**FTE**  
*Cat. leaflet A.02.322e*

#### High-intensity inset runway threshold light
Unidirectional 12” dia. fitting with 12.7 mm protrusion using two or three 105 W 1,000 hrs cold mirror halogen lamps.

**FTH**  
*Cat. leaflet A.02.313e*

#### High-intensity inset runway edge light
Bidirectional 12” dia. fitting with 12.7 mm protrusion using two or three 105 W 1,000 hrs cold mirror halogen lamps.

**FED**  
*Cat. leaflet A.03.211e*

#### High-intensity inset runway edge light
Unidirectional 12” dia. fitting with 12.7 mm protrusion using one 105 W 1,000 hrs cold mirror halogen lamp.

**FEN**  
*Cat. leaflet A.03.231e*
The continuous increase of air traffic has made taxiway lighting more important than ever before. Low-maintenance lighting products from ADB are up to the challenge.

**LED elevated taxiway and apron edge light**
Elevated light with blue dome and 1 LED. Available for 6.6A and 230 V power supplies.

*ETES*
*Cat. sheet 2050e*

**LED taxiway edge inset light**
8“ omni directional medium intensity LED light (19.5 VA) with 6.35 mm protrusion. Emits directly the correct blue colour.

*LTO*
*Cat. leaflet A.04.470e*

**Elevated runway guard lights**
LED unidirectional blinking lights for series or parallel power supply.

*ERGL*
*Cat. sheet 2087e*

**Multipurpose LED inset taxiway centreline light**
Unidirectional or bidirectional inset light for straight and curved taxiways, stop bar and intermediate intersection bars. Switchable or non-switchable. LED fitting compatible with conventional lighting systems. Uses only 10 W per beam. Available in green, yellow and red.

*DTS/DTC*
*Cat. leaflet A.04.510e*
Omnidirectional elevated taxiway and apron edge light
Elevated light with blue dome and 30 W 1,000 hrs halogen lamp.

_VEE_  
*Cat. leaflet A.03.320e*

Bidirectional medium-intensity taxiway centreline light
8” dia. fitting with 10 mm protrusion for straight and curved taxiways, stop bars and taxiway intersections, using one halogen lamp 45, 65 or 100 W. Available in green, yellow and red.

_FT5/FTC_  
*Cat. leaflet A.03.431e*

Multipurpose low-protrusion inset taxiway centreline light
Unidirectional or bidirectional inset light for straight and curved taxiways, stop bar and intermediate intersection bars. Switchable or non-switchable, 40 W 1,500 hrs lamps. Available in green, yellow and red.

_TLP_  
*Cat. leaflet A.03.433e*

Switchable bidirectional medium-intensity taxiway centreline light
8” dia. fitting for straight and curved taxiways, stop bars and taxiway intersections, using two 48 W 1,500 hrs cold mirror halogen lamps. Available in green, yellow and red.

_FTD_  
*Cat. leaflet A.03.432e*

Omnidirectional inset taxiway edge light
8” dia. fitting with 10 mm protrusion using 1,000 hrs halogen lamps rated 45 W.

_FTO_  
*Cat. leaflet A.03.441e*

LED Internally illuminated taxiway guidance signs
For all mandatory and information signs: Retrofit kits to give older PVO signs a second life at reduced cost. Also available with halogen and fluorescent lamps, supplied in parallel or in series.

_PVL_  
*Cat. leaflet A.04.260*

_PVO_  
*Cat. leaflet A.04.251*

_PVH_  
*Cat. leaflet A.04.255*

High-intensity elevated runway guard lights
Unidirectional blinking lights with two halogen lamps 150 W for series or parallel power supply.

_RGL_  
*Cat. sheet 1023e*

For more information: www.adb-airfieldsolutions.com
Mounting and Levelling Devices

Stability, flexibility, accurate positioning, as well as ease of installation are just some of the features that characterize the design of our state-of-the-art mounting and levelling devices.

Mounting and adjustment devices
For each type of light, elevated or inset, dedicated installation and adjustment devices, and even maintenance tools are available.

Mounting systems for inset lights
Aluminum shallow and FAA-style steel deep bases for dry or wet systems adapted to various connection requirements.

Deep bases
Cat. leaflet A.05.120e
Shallow base HPI
Cat. leaflet A.05.350e

For more information: www.adb-airfieldsolutions.com
Breakable coupling
Breakable couplings for various applications; meet ICAO and FAA requirements.

Various types

Mounting coupling & conduit elbow
Synthetic material mounting coupling, resin tapped with 2” gas, 11 TPI. Used in concrete foundations with or without O.D. PVC conduit elbow, dia. 63 mm.

MC3 and TC3
Cat. leaflet A.05.111e

Anti-corrosion base plate
12” FAA-compliant UV-resistant synthetic base plate, with receptacle seat and earthing provision, for use on FAA deep cans or direct concrete mounting.

T 300/3
Cat. leaflet A.05.360e

Tripod
Synthetic material tripod with 2” gas coupling, 11 TPI. For mounting on concrete of elevated lights.

Cat. leaflet A.05.111e

For more information: www.adb-airfieldsolutions.com
Since the primary function of the AGL system is to provide the pilot with a visual cue during the most critical phases of the flight, its brightness must continuously adapt itself to prevailing visibility conditions. The preset light intensity has to remain constant, despite possible fluctuations in the power supply or changes in the load. In a series circuit, this function is upheld by the constant current regulator (CCR).

**ADB CCRs feature**

Safe easily..., but above all highly reliable, ... serviceable stand alone regulation units with a modular build up from basic to full option functionality. Rack based versions can be supplied upon request.

Present CCRs are fully digital and based on proven power electronics technology using thyristors or the latest state of the art quick responding pulse width modulation controlled IGBT.

All CCRs can be operated and locally configured via clear menu driven displays or remotely making use of hard wires or various communication busses.

For more information: [www.adb-airfieldsolutions.com](http://www.adb-airfieldsolutions.com)
Thyristor controlled
Constant current regulator
Constant current regulator compliant to IEC 61822 and FAA L-828/L-829 ranging from 2.5 kVA to 30 kVA.

**MCR³**
*Cat. leaflet A.07.360e*

Pure sinewave constant current regulator
1 or 3 phase IEC 61822 and FAA L828/L829 compliant stand alone CCR ranging 2.5 to 30 kVA.

**CRE & VIS**
*Cat. leaflet A.07.370e*

Thyristor controlled constant current regulator
IEC 61822 compliant rack mounted CCR. Units 40A and 110A.

**6SF52**
*Cat. leaflet 6SF52*

Series circuit cutout
Safety device for safely servicing CCR’s and circuits.

**SCO**
*Cat. leaflet A.06.455e*

Series circuit selectors
To control two or more circuits from one CCR. Type to be chosen in function of the selected CCR type.

**CSM**
*Cat. leaflet A.06.412e*

For more information: www.adb-airfield solutions.com
The introduction of new low power LED light sources opens the door to new thoughts about the supply of Airfield Ground Lighting circuits

APS is just one of ADBs proven advanced power supply concepts helping airports to achieve their green targets even from an existing infrastructure, hence with a minimum of investment while new installations benefit from its minimum space requirements.

**APS Features:**
- The APS unit is housed in a compact, 19-inch rack mountable enclosure
- The APS architecture is based on Pulse Width Modulation (PWM), greatly reducing airfield lighting system electrical power requirements
- No high voltage skills required: APS units are available in 1 and 2 kVA units operating at 2Amps output current and output voltages up to 1000V only
- Energy savings of about 90% in the fittings and cables
- Less is more: the PWM alternating block signal requires less electronics in the APS fittings, increases reliability, and decreases power consumption

**Uses:**
- All Low and Medium Intensity airport- and heliport-lighting applications
- Particular applications at CAT I, II and III airports without monitoring requirements. Typical applications are taxiway edge lights, dedicated taxiway guidance sign (*) circuits
- Low intensity obstruction light circuits

(*) Foreseen for release in 2013

- Additional lights presently under development for 6,6Amps circuits.
- Taxiway guidance signs (ICAO).
ETES taxiway and apron edge light  
Fitting with only One 1 Watt LED. Also available in other colors for low intensity applications.  
Power consumption 3.4 VA. (Load based on ETES-1X0A)

LTO inset taxiway edge and  
apron edge light  
8” omnidirectional inset light with 6,35 mm protrusion.  
Power consumption 5.9 VA

EMIL multipurpose low and  
medium intensity light  
Elevated light available with various color domes covering most applications for low and medium intensity airports.  
Power consumption: 5.7 VA  
(Load based on EMIL-7XA00)

LTS/C multipurpose medium  
intensity lights  
8” single or two directional inset light available in various colors for taxiway and medium intensity runway applications.  
Power Consumption: 10 VA  
(typical for 2 directional lights)

Shorting device  
Accessory to short circuit the isolating transformer secondary winding assuring a stable operation of the APS unit even in case a high number of elevated lights are knocked over.
Forward-Thinking Technology

Commitment to technological innovation involves more than focusing on the bottom line. Staying ahead of the curve requires anticipation of the future demands of the industry.
AGLAS® provides distributed intelligence in the airfield to control and monitor a variety of airfield lighting devices.

It can be used in the following applications:
- Key component of (Advanced-) Surface Movement Guidance Control Systems: (A-)SMGCS
- Stop bar control and monitoring; taxiway routing support
- Elevated and in-pavement Runway Guard Light (RGL) control and monitoring, CAT II/III monitoring support
- Failed-lamp detection and location identification
- Interface with aircraft/vehicle presence sensors
- Selective control and monitoring of various airfield lighting devices

AGLAS® Technology
- Communicates using a radio frequency signal imposed on the high-voltage airfield series circuit cable - no separate communication cable needed.
- Communication quality is automatically optimized for each series circuit in a permanent background process.
- New communication principle together with forward error correction drastically reduces signal disturbance caused by impulse and narrow band interferences.
- Main system elements: AGLAS® Master (in the substation), AGLAS® Remote (one for each light fixture for individual control and monitoring). In addition, AGLAS® I/O Remote for communication with local field sensors and AGLAS Power Remote for sensor energy supply.

For more information: www.adb-airfieldsolutions.com
Each AGLAS® Remote provides data on the following functions:
- ON/OFF switching of lamps or groups of lamps
- control blink or steady status of single lamps or groups of lamps
- indication of lamp status ON, OFF, DEFECTIVE
- RMS current and voltage feedback
- soft start, stop blinking or delayed actions in ON or OFF
- fail-safe mode activation via a watchdog timer

Maintenance and statistics
AGLAS® continuously reports lamp status to the maintenance center and indicates the exact location of a defective lamp, enabling fast corrective maintenance. In the case of two defective adjacent lamps, an alert is immediately activated in accordance with ICAO Annex 14 requirements for CAT II/III operations. Database archiving of the service life and utilization of various AGL systems allow for the calculation of the mean time between failures (MTBF) - essential information for preventive maintenance.
Airfield Lighting Control Systems (ALCS) allow Air Traffic Controllers (ATC) to monitor and operate a range of lighting functions from the control tower, at the same time providing them with valuable feedback on the performance status of airfield lighting equipment.

### Functions
ALCS modular control system family offers airports a wide range of functions and features - all depending on user requirements, airport size, traffic volume, CAT operation and local conditions. In addition to ON/OFF and brightness switching of AGL functions, ALCS typically provides all or part of the following functions:

- Monitoring and display of AGL equipment status
- Graphic visualization of lighting systems layout and equipment status on a human-machine interface
- Monitoring, analysis and logging of AGL performance for maintenance activities
- Pilot visual guidance on taxiways and/or apron
- Detection of aircraft passing an active stop bar and alerting ATC
- Stop bar control and surface movement guidance system (SMGCS) functions
- Monitoring and visualization of switching gear, generators, RVR and other external systems
- Interface and exchange data with external systems such as airport management computers, meteorological and power supply systems etc.
- Auxiliary control and 100% availability through a redundant concept

For more information: www.adb-airfieldsolutions.com
ALCS Style 1 to 7 - full modularity.
ADB’s Airfield Lighting Control System (ALCS) family ranges from Style 1 to Style 7, enabling selection and specific adaptation of Airfield Ground Lighting (AGL) control features for all sizes and levels of complexity of airfield ground lighting systems.

Maintenance functions include:
- receiving, logging and database management
- clear display of information (e.g. layouts of the airfield, substations, electronic versions of manuals, etc.)
- editing of layouts (editor tool to allow easy alterations)
- hot stand-by for tower control system (particularly where the maintenance PC is located in the tower building)

A maintenance computer receives data from the substation controller(s) via the central tower controller. A database stores the required information coming from lighting circuits and lighting device communication links, the individual lamp control system, CCRs, AGL control systems and, as required, generator sets and switching gear.
ICAO has specified the provision of (advanced) surface movement guidance and control systems (A-) SMGCS, comprising innovative, partially automated ground traffic management procedures for enhanced routing and visual guidance and specifically to avoid collisions on the ground. ADB is doing its part to help airports to fulfil these requirements.

**SMGCS benefits**
Thanks to sophisticated navigational aids, air traffic control is able to conduct safe landings in all weather conditions. Even at efficient airports however, the operations flow can be dramatically impaired when visibility is below 350 m, frequently resulting in delays on the ground.

An SMGCS shall be designed to uphold airport operations under these conditions by providing thorough monitoring of ground traffic, including tracking and labelling, visual guidance for aircraft and vehicles, automatic calculation of taxi routes and alert functions.

ADB contributes with the key elements AGLAS, ALCS with integrated Surface Manager (SMAN) functions such as individual routing and conflict avoidance and local sensors AFS to an integrated system solution improving significantly safety and efficiency.

**The SMGCS concept**
ADB’s concept for (A-)SMGCS is designed to provide air traffic controllers with a complete overview of the traffic situation at their integrated workstations, including all necessary visual guidance functions for safe and efficient ground traffic operations, thus reducing operator workload. Airport information and surveillance systems update continuously aircraft type and position, call sign, flight plan and gate in order to select appropriate taxi routes and to signal possible conflicts.

Surface Movement Surveillance supported by ADB Field Sensors (AFS) at dedicated locations and Airfield Ground Lighting join forces in the A-SMGCS package.

Runways and taxiways are ICAO compliant equipped with edge lights, center line lights, stop bars and signs that are individually controlled (ON/OFF) and monitored. This entire infrastructure is divided into segments and information stored in a database.

For more information: www.adb-airfieldsolutions.com
The integrated system solution enables air traffic control to select the level of automated support functions for enhanced visual guidance with „Follow-the-Greens“ operation, Stop Bar control and Runway Incursion Alerting System (RIAS).

The system is designed to support controller decision-making by calculating and suggesting a specific taxi route based on gate allocation and runway in use. The controller can adapt and accept the suggested taxiway route with a simple mouse click.

Once accepted, the desired routing is activated accordingly, and feedback from each segment displayed. All lights are individually controlled and continuously monitored (status, defective) by AGLAS, which automatically activates an alarm when two adjacent lamps are not lit according to ICAO requirements for low-visibility operations.

Primary (A)-SMGCS features (including options)
- integrated controller workstation, reduced ground controller workload
- tracking and labelling of aircraft and vehicles
- partial surveillance with local field sensors
- selection of suggested taxi routes
- control of taxiway center line lights
- automatic activation of lead-in lights
- stop bar and intersection control
- conflict prevention and alert tools
- maintenance facilities
- interface with flight and radar data processing, gate management, flight information systems, etc.
Series circuits are equipped with special single core cables. The performance environment as well as high operating voltages require particularly durable insulation. At ADB, we have made it our personal responsibility to develop AGL circuits with highest reliability for long lasting and safe operation.

Primary and secondary cabling
All types of primary series circuit cable with or without screen for rated voltages up to 5 kV, and secondary wiring and cable for installation in conduits or saw cuts. All of them in full compliance with FAA and EN standards.

Cat. leaflet A.06.910e
Cat. leaflet A.06.920e

Leads
Confectioned leads with molded-on L-823 plugs and/or sockets are available in any length. The molding of the connectors to the cable ensures perfect water tightness between lead and connector.

Cat. leaflet A.06.960e

Secondary connector kits
FAA L-823 type II class B style 4, 5, 11 and 12 secondary connector kits.

SCK
Cat. leaflet A.06.940e

Note: All secondary cabling, pre-confectioned leads and connector kits are now available in two-pole and three-pole (2 pole + earthing) executions. The earthing provides a higher operational safety and – especially important for LED lights – a better surge protection.
... are more than just a commodity. The excellent efficiency and load characteristics of ADB transformers are the best guarantee for a stable light output within the normal distances between the light unit and the series transformer.

Isomax-encapsulated series transformers
According to ICAO, FAA and future IEC requirements, providing galvanic insulation between the series circuit and the lights. Operating voltage until 5 kV, power range from 10 VA to 300 VA.

*RST*
*Cat. leaflet A.06.112e*

Primary connector kits
FAA L-823 type I class B style 3 and 10 single pole connector kit for screened and unscreened cable.

*PRK*
*Cat. leaflet A.06.930e*
Our weather equipment includes both wind cones and free-floating or motorized landing tees. From the H.V. towers of the Suez Canal to the smallest antenna, ADB obstruction lights are designed to mark every possible hindrance for air traffic.

LED obstruction light
ICAO type A & B compliant steady burning red LED light, with a lifetime of 100,000 hours and a power consumption of only 7 W.

LBO
Cat. leaflet A.08.210e

Wind direction indicators
(Non-) illuminated wind cones, with white, orange or red- and white-striped windsock of different sizes. Available with optional flood lighting and obstruction lighting.

L-806 cat. sheet 1016
L-807 cat. sheet 1005

For more information: www.adb-airfieldsolutions.com
ADB offers a wide range of solar-powered products:

- As a stand-alone lighting option, solar-powered airfield lights can be quickly and easily deployed to challenging locations where the electrical infrastructure is incomplete or non-existent.
- The combination of ADB LED products and Carmanah solar power management technology enables the deployment of fully compliant lighting systems using solar as either the primary or as a back-up power source.
- Hardwired solar-powered airfield lighting systems reduce energy costs to virtually zero and eliminate the need for mains power.

SATO (Solar Aviation Taxiway/Obstruction)
Up to 10 cd, almost unbreakable, self-contained solar elevated light. Available in red, white, blue, green, yellow color outputs.

Cat. sheet 3014e

SOLS (Solar Obstruction Lighting System)
FAA- and ICAO-compliant modular, stand-alone, self-contained solar-powered obstruction warning lighting system for towers and other structures.

Cat. sheet 3023e

SART (Solar Aviation Runway/Threshold)
Up to 18 cd self-contained solar elevated light. Available in red, green, amber, white, blue, threshold red/green, and amber/white color outputs including optional infrared capabilities.

Cat. sheet 3015e

SSS (Solar Sign System)
Solar-powered sign (SS) powered by a Solar Engine Power Supply (SEPS).

Cat. sheet 3030e

SAWL (Solar Aviation Wireless Light)
Features an innovative combination of solar power, visible LED, NVG compatible I.R. option and an optional secure wireless control system. Available in 3 versions: economic, standard & high intensity (over 650cd visible light) to cover all the user's needs.

Cat. sheets: 3047, 3016, 3048

SWCS (Solar Wind Cone System)
Solar-powered L-806 (8” wind sock) or L-807 (8” wind sock) wind cone (SWC) powered by a Solar Engine Power Supply (SEPS).

Cat. sheet 3029e

SRGLS (Solar Runway Guard Light System)
Unidirectional blinking lights with two LED lamps solar-powered by a Solar Engine Power Supply (SEPS).

Cat. sheet 3028e

SAPS (Solar-powered Advanced Power Supply System)
Hardwired solar-powered taxiway lighting system that reduces energy costs to almost nothing and backs up the mains power.

Cat. Sheet: Ask your ADB Regional Sales Manager

For more information: www.adb-airfieldsolutions.com
In the latest edition of Annex 14, Volume II, ICAO issued comprehensive guidelines and regulations concerning the standardization of visual aids for heliports. ADB offers the full range of products for these applications.

Steady burning approach light
Elevated light fitting with a clear omnidirectional Fresnel dome and 100 W 6.6 A 1,000 hrs pre-focus halogen lamp.

*RVE-T*  
*Cat. leaflet A.03.150e*

precision approach path indicator
The world’s only single channel PAPI, providing a very sharp red/white transition over the full beam. Lamp power only 315 W.

*SPL*  
*Cat. leaflet A.02.515e*

Final approach and take-off area, aiming point
touchdown and lift-off area lights
8” dia inset light equipped with a 45, 48 or 65 W 6.6 A pre-focus halogen lamp developed especially for heliport applications. Available in white or yellow color.

*FTO*  
*Cat. leaflet A11.100e*

Winching area flood lights
Highly efficient flood lights with extra wide beam for an even lighting of the perimeter surface.

Other available equipment includes beacons wind cones, supply and control equipment. The products described in the airport section of this brochure may also be used on heliports.

For more information: [www.adb-airfieldsolutions.com](http://www.adb-airfieldsolutions.com)
The Portable Aviation Ground Lighting System combines reliability and operational advantages of conventional series airport lighting equipment with ease of deployment.

Although designed primarily for temporary installation, the system has found application in a number of different - even permanent - installations, including:
- emergency lighting on existing runways or taxiways
- lighting of in-the-grass landing strips for aircraft and helicopters
- lighting for helidecks on buildings and oil rigs
- landing spots on frozen lakes
- lighting of a roadway used as a tactical deployment airfield

A complete system comprises:
- portable transformer/light units
- a PAPI system
- preconfectioned lengths of primary cable
- a supply system consisting of one or more constant current regulators
- a low-voltage distribution switchboard
- a generator set
- a remote control system
- additional secondary equipment (e.g. mobile flood lighting)

The equipment is packaged to enable rapid setup and operation. In most cases, this means not more than a few hours.

ADB sales representatives will be glad to assist you in finding the best solution for your needs.

For more information: www.adb-airfieldsolutions.com
ADB products and solutions have been installed at more than 2000 airports in more than 150 countries, from Afghanistan to Zimbabwe. The list includes airports in regions with extreme temperatures (e.g. Vladivostok -30 °C or Bahrain +40 °C) and high humidity levels (e.g. Singapore 99%). Our systems have been successfully integrated at civil and military airports alike, as well as heliports.
The information provided in this brochure contains merely general descriptions or characteristics of performance which in actual case of use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.