CHALLENGER® 1

Full Cut-off Sports Floodlight

A double asymmetric, flat glass floodlight range specifically designed for lighting of sports grounds and large open areas.

Advanced Lighting Technologies

IP66

ULOR 0% 60°

LIGHT CONTROL SYSTEM

SPORTING AND LARGE AREA LIGHTING

Challenger® 1 and Venture

The Challenger® 1 luminaire when combined with the Venture lamp provides a complete lighting solution. Play and train at night under the crisp, white daylight provided by the Venture 2000W metal halide lamp delivering high performance illumination.

From amateur to professional level, participants training and playing, as well as spectators are provided with comfortable lighting, an even light distribution and low glare.

Whether it be for Australian Rules Football, Rugby, Hockey, Athletics, Football, Tennis or large area application, the Challenger® 1 Floodlight, combined with the Venture 2000W metal halide lamp provides a cost effective and standards compliant solution that delivers high illuminance levels for your application.

Applications

- Australian Rules Football
- Football
- Rugby
- Tennis
- Hockey
- Athletics
- Golf Course/Ranges
- Bowling Greens
- Ports & Harbours
- Loading Bays & Freight Distribution Areas
- Airport Aprons
- Railway & Shunting Yards

Challenger® 1 and Venture, your complete sports lighting solution

Design Excellence

Successful sports lighting begins with good design. There are three main factors to be considered in the design process: the quantity of light, the quality of light and local council bylaws.

The quantity of light, expressed as an average lux, is usually determined by the level of sports competition. General guidelines suggest lower levels for recreational play, a medium level for club standard and a higher level for international or professional grade.

The quality of light is evaluated by the degree of light uniformity and lack of glare. Optimum uniformity is achieved by using fittings which provide correct light distribution that are mounted at the appropriate height. Glare is kept to a minimum by utilising fittings with precise cut-off distribution.

Most local bodies have restrictions pertaining to spill light and pole heights. These aspects need to be addressed at the commencement of the design process.

Quantity Of Light

Light Levels
Australian standards AS 2560 recommend different maintained levels of play. See the following sporting applications for these typical lighting levels.

The light levels recommended refer to average maintained horizontal illuminance at ground level. Our designs utilise a depreciation factor to allow for dirt build-up on the fitting and lamp output diminishing throughout its life. Owing to these factors, a luminaire maintenance and lamp replacement program should be developed to retain integrity of the system.

Complete lighting design support services are available from Advanced Lighting Technologies.

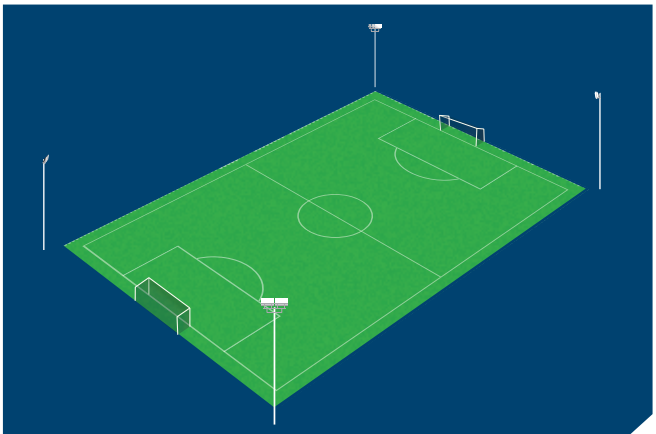
FOOTBALL

Recommended luminaire location zones and pole location for Football

Lighting for Football needs illumination to allow for fast pace, low trajectory passes in all directions across the principal playing area. Due to the importance of the goalkeeper, some back lighting from a corner location is recommended. Side lighting systems are convenient and appropriate.

The Challenger® 1 and Venture combination will ensure that the ball and players are illuminated at all times while in play.

The ultimate striker - Challenger® 1 2kW and Venture lamps.



Recommended pole layout

Light Levels

Australian Standards AS2560.2.3:2007 recommend the following average maintained illuminance levels for the various levels of play for Football.

Level of play	Illuminance (lux)	Uniformity Min/Ave	Uniformity Min/Max	Luminaire height	No. of 2kW Challenger® 1 floodlights required
RECREATIONAL/TOUCH AND TAG **AMATEUR**/TRAINING **SEMI-PROFESSIONAL**/TRAINING	50	0.3	N/A	18m	8
AMATEUR/MATCH PRACTICE & COMPETITION **SEMI-PROFESSIONAL**/MATCH PRACTICE **PROFESSIONAL**/TRAINING	100	0.5	0.3	18m	12
SEMI-PROFESSIONAL/COMPETITION **PROFESSIONAL**/MATCH PRACTICE	200	0.6	0.4	18m	24

Recommendations of the AS2560.2.3:2007 (Extract from table 1)

Note: The lighting scheme shown on the diagram and in this table will ensure full compliance with the requirements of the AS2560.2.3: 2007 -Sports Lighting - Lighting for Football with respect to the recommended illumination levels and light uniformity for the level of play shown.

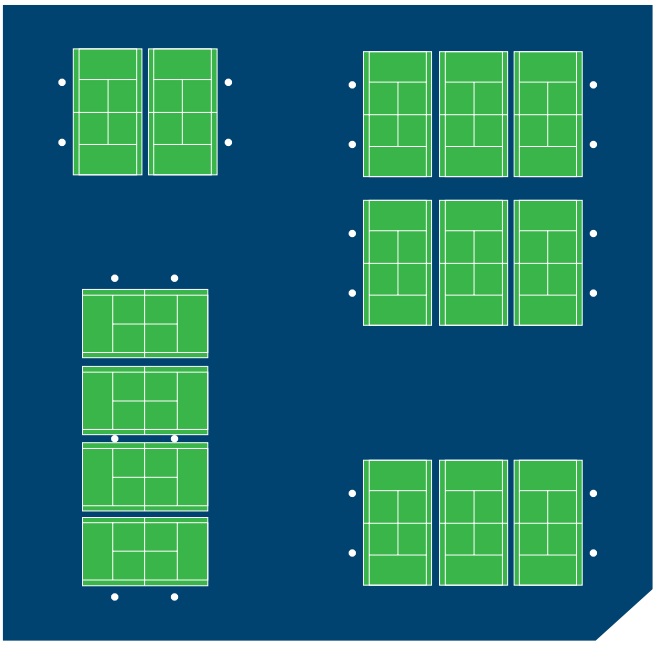
TENNIS

Recommended luminaire location zones and pole location for Tennis

The speed of ball in a game of Tennis can be incredibly high. Players move rapidly around the court and need to be able to see the ball from virtually all directions. So the visual tasks of the players and officials are very demanding.

The Challenger® 1 floodlight and Venture 2kW lamp will provide a winning combination for your Tennis court lighting. Avoid costly "fixes" and lengthy disputes with the neighbours and serve an ace by getting the right solution first time.

For single courts and club Tennis lighting where lower height poles (6-10m) and/or lower wattage floodlights are preferred or necessary to meet site conditions, please contact Advanced Lighting Technologies for custom lighting designs and professional advice.



Light Levels

Australian Standards AS2560.2.1: 2003 recommend the following average maintained illuminance levels for the various levels of play for Tennis.

Tennis Court Lighting	Luminaire Height	No. of Poles	No. of 2kW Challenger® 1 floodlights required
TWIN COURT	10m	4	4
TRIPLE COURT	15m	4	8
FOUR COURT	10m	6	8
SIX COURT	15m	8	16

Level Of Play	Illuminance (Lux)	Uniformity Min/Ave	Uniformity Min/Max
CLUB COMPETITION & COMMERCIAL	350 (PPA) 250 (TPA)	0.6 (PPA) 0.3 (TPA)	0.4 (PPA) 0.2 (TPA)

Recommendations of the AS2560.2.1:2003 (Extract from Table 1)

Note. The lighting schemes in this table will ensure full compliance with the requirements of the AS2560.2.1: 2003 - Sports Lighting - Lighting for Outdoor Tennis with respect to the recommended illumination levels and light uniformity over the principal (PPA) and total (TPA) play areas for the Club Competition and Commercial Tennis.

HOCKEY

Recommended luminaire location zones and pole location for Hockey

Lighting for hockey requires illumination to allow players and spectators to clearly see the ball and participants in play. Play is predominately at ground level although the ball will also be played in the air. Because of the small size of the ball and the speed at which it travels, lighting must be of a quality such that the players and spectators can see the background against the ball as clearly as possible from glare.

Side lighting systems are convenient and appropriate.

Recommended pole layout

Light Levels

Australian Standards AS2560.2.7:1994 recommend the following average maintained illuminance levels for the various levels of play for Hockey.

Level of play	Illuminance (Lux)	Uniformity Min/Ave	Luminaire height	No. of 2kW Challenger® 1 floodlights required
PHYSICAL TRAINING ONLY	30*	0.25	-	-
BALL TRAINING, JUNIOR AND MINOR GRADE COMPETITION	250	0.6	15m	16
MAJOR GRADE CLUB, NATIONAL & INTERNATIONAL COMPETITION	500	0.7	15m	28`

Recommendations of the AS2560.2.7:1994 (Extract from table 1)

***Nb:** contact Advanced Lighting Technologies for further assistance as it is possible to meet the requirements of this category by utilising lower wattage floodlights and fewer number of poles.

AUSTRALIAN RULES FOOTBALL

Recommended luminaire location zones and pole location for Australian Rules Football

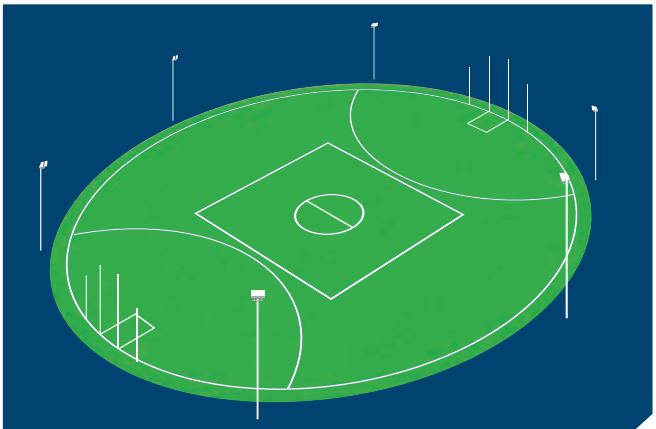
Australian Standards recommend floodlights be positioned evenly around the area, but not near the goalposts.

To minimize the risk of injury to players, poles should be located behind the boundary fence, if any, or set back at least 5m outside the limits of the principal playing area.

The Challenger® 1 2kW luminaire and Venture 2000W lamp combine to give exceptional performance for your club sporting ground area.

Depending on the oval size and site conditions, it is possible to meet the requirments of the standard by utilizing 20m poles. Please contact Advanced Lighting Technologies for further information.

Keep your eye on the ball with Challenger® 1 and Venture.



Recommended pole layout

Light Levels

Australian Standards AS2560.2.3:2007 recommend the following average maintained illuminance levels for the various levels of play for Australian Rules Football.

Level of play	Illuminance (lux)	Uniformity Min/Ave	Uniformity Min/Max	Luminaire height	No. of 2kW Challenger® 1 floodlights required
RECREATIONAL/TOUCH AND TAG **AMATEUR**/TRAINING **SEMI-PROFESSIONAL**/TRAINING	50	0.3	N/A	28m	12
AMATEUR/MATCH PRACTICE & COMPETITION **SEMI-PROFESSIONAL**/MATCH PRACTICE **PROFESSIONAL**/TRAINING	100	0.5	0.3	28m	18
SEMI-PROFESSIONAL/COMPETITION **PROFESSIONAL**/MATCH PRACTICE	200	0.6	0.4	30m	36

Recommendations of the AS2560.2.3: 2007 (Extract from table 1)

Note: The lighting scheme shown on the diagram and in this table will ensure full compliance with the requirements of the AS2560.2.3: 2007 - Sports Lighting - Lighting for Football with respect to the recommended illumination levels and light uniformity for the level of play shown.

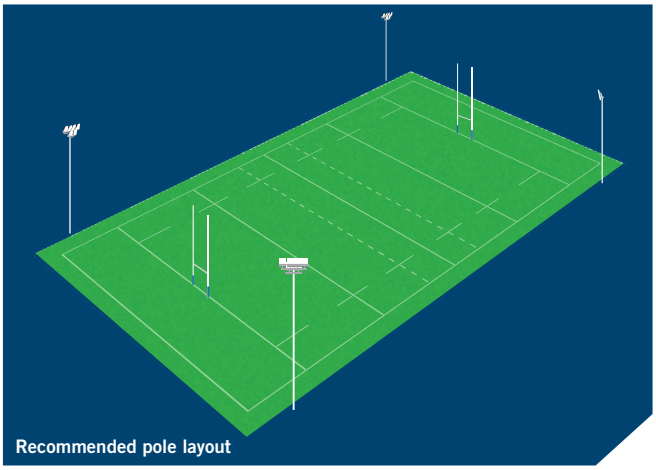
RUGBY LEAGUE AND RUGBY UNION

Recommended luminaire location zones and pole location for Rugby

Lighting for Rugby needs illumination to allow for fast pace, deliberate heavy body contact, low trajectory passes across the principal playing area, and kicks ranging from along the ground to high trajectory, generally parallel to the long axis of the ground.

Side lighting systems are convenient and appropriate.

The Challenger® 1 and Venture combination will ensure that the ball and players are illuminated at all times while in play.



Recommended pole layout

Light Levels

Australian Standards AS2560.2.3:2007 recommend the following average maintained illuminance levels for the various levels of play for Rugby.

Level of play	Illuminance (lux)	Uniformity Min/Ave	Uniformity Min/Max	Luminaire height	No. of 2kW Challenger® 1 floodlights required
RECREATIONAL/TOUCH AND TAG **AMATEUR**/TRAINING **SEMI-PROFESSIONAL**/TRAINING	50	0.3	N/A	18m	8
AMATEUR/MATCH PRACTICE & COMPETITION **SEMI-PROFESSIONAL**/MATCH PRACTICE **PROFESSIONAL**/TRAINING	100	0.5	0.3	18m	12
SEMI-PROFESSIONAL/COMPETITION **PROFESSIONAL**/MATCH PRACTICE	200	0.6	0.4	18m	24

Recommendations of the AS2560.2.3:2007 (Extract from table 1)

Note: The lighting scheme shown on the diagram and in this table will ensure full compliance with the requirements of the AS2560.2.3: 2007 - Sports Lighting - Lighting for Rugby with respect to the recommended illumination levels and light uniformity for the level of play shown.

CHALLENGER® 1

Features	Benefits
Body of high-pressure die cast aluminium, first given a zinc chromate substrate, then finished in RAL7035 light grey polyester powder coating.	Optimum protection against harsh environments.
Narrow, medium and wide beam, bi-asymmetric, flat glass distributions.	Versatility and optimisation of lighting design. Control of light spill, upward light and glare.
Toughened flat glass, secured within an aluminium frame.	A robust protection against frontal impact.
Double asymmetric reflector system of high purity, polished and anodised aluminium, incorporating an internal baffle.	To produce high luminaire efficiency and glare control.
Galvanised steel stirrup with additional locking screws.	Durable and robust mounting.
Sealed with silicone rubber gasket.	IP66 Weather Protection.
Electrical connection box (IP66) housing ignitor, located on the side of the stirrup, fitted with 2 x GORE™ membrane breathers.	Allowing long distance, remote gear location.
Breather management system regulates air flow through the cable hose and in/out through IP67 GORE™ membrane.	To alleviate pressure stress on the front glass.
Factory fitted cut-out timed ignitor.	Better protection for the lamp and cabling.

Specifications

Weight (Max in range)

Luminaire only: 20.0kg

Control gear - remote
In enclosure: 21.5kg
On gear tray: 17.0kg

Windage

0.126m^2 (Flat Glass)
0.135m^2 (+10° Elevation)

Mounting

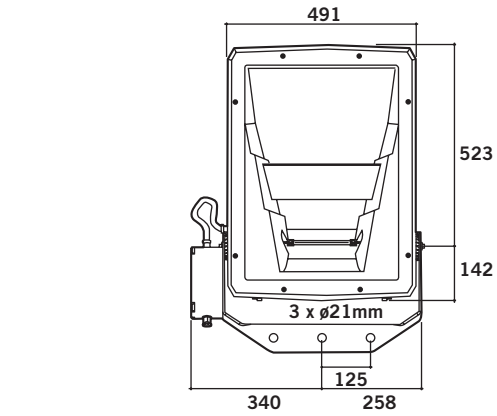
Stirrup mounted using M20 fixing
Stirrup adjustment +/- 140°

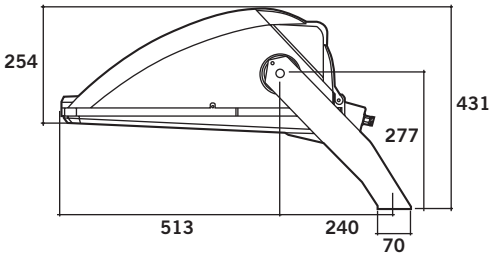
Aiming

Separate protractor device for accurate setting of elevation angle

Electrical Specification

Supply Voltage: 415V, 50Hz





KEY FEATURES

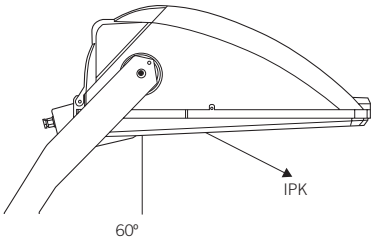


FIG 1

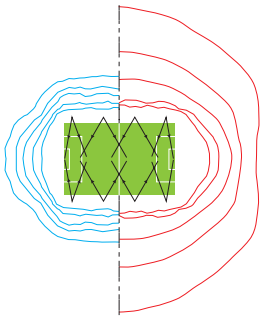


FIG 2

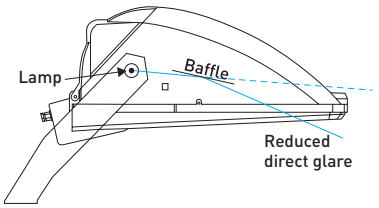


FIG 3

Control System

A combination of efficient lighting design and careful floodlight design has rewarded Advanced Lighting Technologies with an international reputation for pioneering high performance floodlighting combined with effective control of obtrusive light.

The Challenger® 1 product consists of a series of complimentary design features which produce high target efficiency while effectively controlling light pollution.

Double Asymmetric Reflector

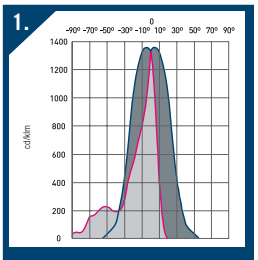
The double asymmetric reflector is designed to ensure full flow of light over the lit area from each floodlight. With the main beam emitted from the floodlight at an angle of 60 degrees forward from the normal to the front glass, it results in a flat appearance (fig 1). The benefit is that less of the reflector is visible to spectators and onlookers, resulting in low glare to the surrounding locality.

Internal Baffle

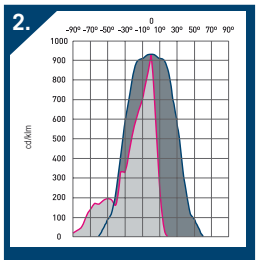
The internal baffle re-directs upward stray light back into the floodlight beam, providing increased efficiency. At angles above the beam the baffle shields direct lamp glare (fig 3). Produces sharp run back above high peak resulting in greater overspill containment and minimal intrusion to adjacent areas bordering the installation (fig 2).

Maintenance

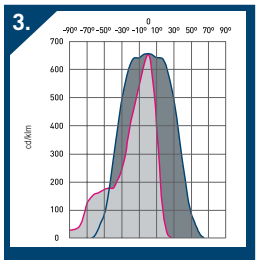
Easy lamp changing via opening back cover using a clip system ensures ease of maintenance.



CHAL1-2KWN
MH-TS 2kW
Narrow beam



CHAL1-2KWM
MH-TS 2kW
Medium beam



CHAL1-2KWW
MH-TS 2kW
Wide beam

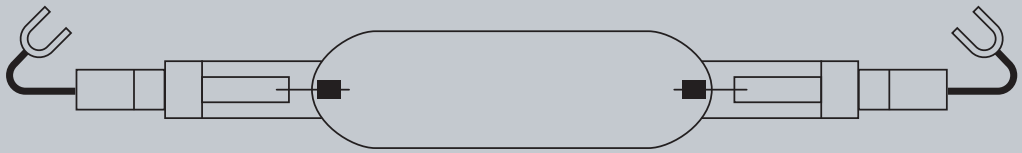
ORDERING INFORMATION

Advanced Lighting Technologies

Fixture Product Code	Product Description	Beam Spread	Lamp Manufacturer	Lamp Code
CHAL1-2KWMBB	FLOOD Challenger® 1 2KW M.B. GEAR BOX & LAMP	Medium Beam	Venture	22813
CHAL1-2KWMBT	FLOOD Challenger® 1 2KW M.B. TRAY & LAMP	Medium Beam	Venture	22813
CHAL1-2KWNBB	FLOOD Challenger® 1 2KW N.B. GEAR BOX & LAMP	Narrow Beam	Venture	22813
CHAL1-2KWNBT	FLOOD Challenger® 1 2KW N.B. TRAY & LAMP	Narrow Beam	Venture	22813
CHAL1-2KWWBB	FLOOD Challenger® 1 2KW W.B. GEAR BOX & LAMP	Wide Beam	Venture	22813
CHAL1-2KWWBT	FLOOD Challenger® 1 2KW W.B. TRAY & LAMP	Wide Beam	Venture	22813

VENTURE LIGHTING

Product Code	Lamp Description	Lamp Current	Initial Lumens	Avg. Life Hours	CCT (K)	Warm Up (Min)	Restrike (Min)	RA	Finish	Oper. Pos	Ctn Qty
22813	MH-TS 2000W/XL/K12/4K	10.3	240000	8000H	4500	3-5	10-15	68	Frosted	HOR±15°	2



Contact Advanced Lighting Technologies for site specific design requirements. For advice on pole solutions, including hydraulic pole applications, contact our sales and customer service representatives.

Digger Dawes Oval, Kalgoorlie, WA- Challenger® 1
Photograph courtesy Kalgoorlie Miner

Advanced Lighting Technologies

Advanced Lighting Technologies Australia Inc

110 Lewis Road
Wantirna South
VIC. AUSTRALIA 3152

T: +61 03 9800 5600
F: +61 03 9800 5533

E: sales@adlt.com.au

www.adlt.com.au
www.venturelighting.com.au

Advanced Lighting Technologies New Zealand Ltd

Unit 8, 25 Airborne Road
Albany, Auckland
NEW ZEALAND 0632

T: +64 09 415 6332
F: +64 09 415 6255

E: light@adlt.co.nz

www.adlt.co.nz
www.venturelighting.co.nz

Advanced Lighting Technologies Asia Pte Ltd

Block 4008, Ang Mo Kio Avenue 10
#04-06, Techplace I
SINGAPORE 569625

T: +65 6844 2338
F: +65 6844 2339

E: sales@adlt.com.sg

www.adlt.com.sg
www.venturelighting.com.sg