

GolfPod LIGHTING DESIGN REPORT

Mannings Heath Golf Club

04/06/2026



Design of the lighting, for and on behalf of Golf Pod, has been provided by Exled Golf Ltd, a manufacturer of specialist lighting for use with golf tracking technology, experienced in lighting design across a range of specialist sectors.

Golf Pod is a golf driving range experience with a unique format, utilising a reduced outfield length, achieved by the installation of a 30m square netting pod to the extents of the range building. Traditional driving range lighting relies heavily on the use of high-powered flood lights, with the light projected onto the outfield perpendicular to the range building which can in turn cause issues with glare, light-spill and skyglow to neighbouring plots and residential properties.

Exled Golf, in partnership with Golf Pod, have developed a lighting scheme that seeks to minimise lighting impacts to surrounding properties, ecology and other concerned parties whilst providing sufficient task illumination for golfers and the Toptracer technology employed by Golf Pod.

This report is a summary of the lighting design and should be read in conjunction with the Luminaire Datasheet and full Site Lighting Design documents.

The design of a suitable lighting scheme for Golf Pod installations, that will provide sufficient task lighting for golfers and the Toptracer technology employed by Golf Pod, whilst minimising harmful effects to neighbouring properties, wildlife and ensuring minimal ULR values.

Task lighting for golf driving ranges as set out in Lighting Guide 4: Sports Lighting by The Society of Light and Lighting, suggests that *'distance markers must be clearly visible, and the player must be able to follow the flight of the ball'* and that vertical illuminance on distance markers should reach an average 50 lux (+1m AGL).

These requirements are modified by the Toptracer system requirements, which call for a light wall of 30 lux vertically, at 50m out (from the range bays) and 30m high. Additionally, system constraints mean lighting must be situated behind or inline with camera installations to light the balls for camera vision.

Further modification to the guidance notes come from the unique outfield layout of the Golf Pod. Outfield extents are limited to 30m from the range bays, and a maximum height of the netting is 12m.

Traditional golf driving range lighting, as referenced in the Project Brief and supported by Lighting Guide 4: Sports Lighting, primarily uses '*end-range lighting systems*' which employs '*high-powered floodlights behind tee locations with high angles of elevation to achieve adequate vertical illuminance at each target area*' which is very likely to cause glare to surrounding neighbourhoods when '*viewing towards the tees in the direction of play*'.

The reduced nature of the Golf Pod outfield, in conjunction with low netting heights relative to the ball path, allows for a more novel approach to the task lighting requirements, and this is what is proposed in the following Design Summary.

Further aims of the lighting design are to minimise obtrusive night-time illumination, whilst being sensitive to other ecological elements (fauna and flora). Design proposals have been framed by the following guidance:

- Lighting Guide 4: Sports Lighting (The Society of Light and Lighting)
- GN 01/21: The Reduction of Obtrusive Light (The Institute of Lighting Professionals)
- GN 08/23: Bats and Artificial Lighting at Night (The Institute of Lighting Professionals)

The nature of the Golf Pod allows for a novel approach to golf driving range lighting, whereby LED fittings are proposed for installation to the netting truss adjacent to the Golf Pod building, at a height of +9.5m above finished ground level, allowing for a design that significantly reduces the opportunity for glare to surrounding properties. Unlike traditional golf driving range lighting, the fittings will be installed facing the ground, rather than out towards the outfield from the building roof, leading to vastly reduced upward waste light (ULR) comparative to standard golf driving range designs.

Proposed fittings have a Correlated Colour Temperature (CCT) below 3000K, which is considered the upper limit of the warm white range and is correlated with less negative impacts on wildlife.

This design has been calculated using photometry from Exled Golf's own manufactured product, to ensure the highest level of accuracy in calculations. The lighting design minimises the number of required luminaires to two in all standard dimensioned (30mx35m) Golf Pod installations. Proposed light fittings are suitable for remote control and are integrated with dimmable control to reduce the total light output where required based on site constraints.

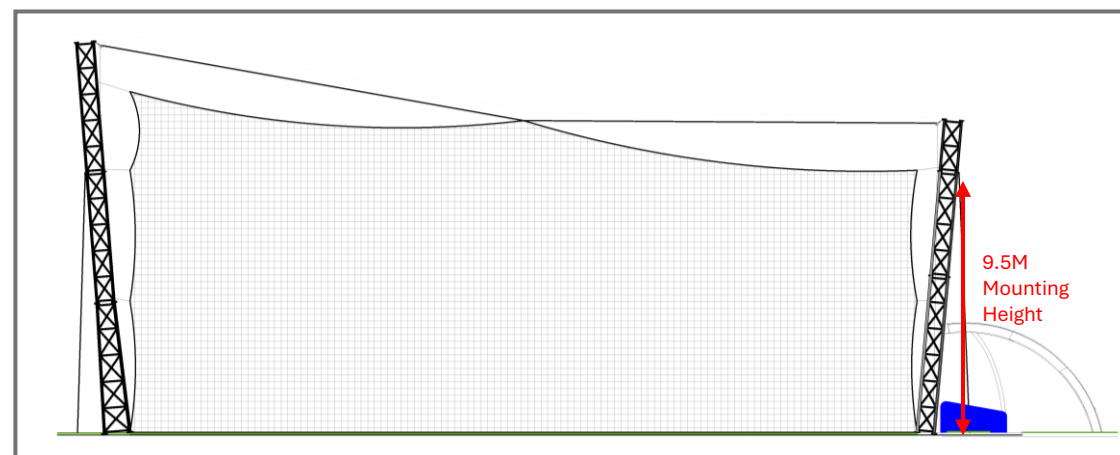
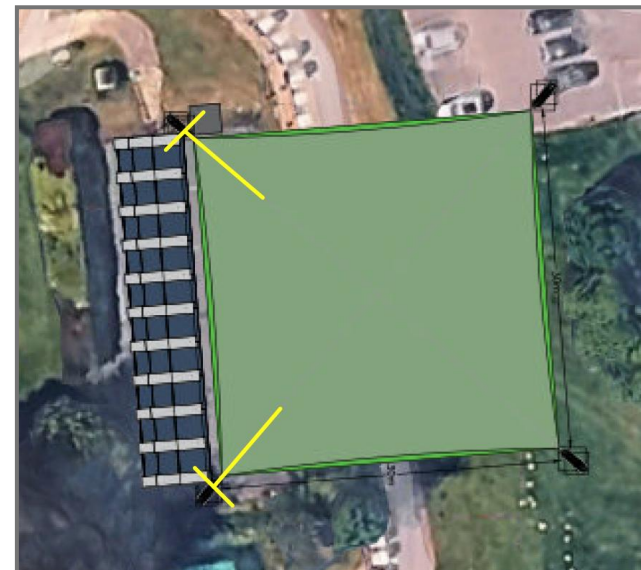
SITE OVERVIEW

- The proposed Golf Pod lies to the south-east of the clubhouse at Mannings Heath GC.
- Existing woodland planting is present to the south and east of the proposed Golf Pod location.
- The Golf Pod will be adjacent to the existing club car park.



LUMINAIRE MOUNTING

- 2No. Fittings required to achieve required light output for Toptracer Range system
- Luminaires to be mounted at 9.5m above ground level, on netting trusses adjacent to Golf Pod building and from central truss behind range building
- Fitting head units aimed 45 degrees across building, towards opposite truss.
- Fittings will only be used when facilities are in use during hours of darkness, and a brief transitional period before dusk to aid Toptracer cameras as light levels fade.



Typical Golf Pod 30x15 – 12H Elevation View

ISOLINE DIAGRAM

- Calculated outputs are based on 420W fittings at 100% output, using a maintenance factor of 1 to provide a worst-case scenario.
- Testing with the proposed fittings on an existing Golf Pod has indicated that outputs can be reduced to ~30% and maintain sufficient tracking where lower outputs are required.
- Proposed scheme fulfils design brief, providing suitable and uniform lighting within the bounds of the Golf Pod.
- All design results have been provided without trees. Note; however, that proposed planting at the site may assist with minimising obtrusive light to neighbouring properties.



ISOLINE KEY

 20 Lux	 1.0 Lux
 10 Lux	 0.1 Lux
 5 Lux	

TOPTRACER REQUIREMENTS

- The system requires a light wall of 30 lux vertically, at 50 meters out (from the range building) and 30 meters high.
- The light source should never be closer than 5 meters from the sensors in a horizontal direction, and never closer than 2 meters in a vertical direction.
- The light source must come from behind or be inline with the cameras for the light to reflect off the golf ball back to the camera sensors.

