



## Design and Access Statement

In Relation to:  
**Temporary Orchard West Theatre**

**Land East of Orchard Street,  
West of Hythe Street,  
Dartford**

**November 2023**



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## 1.0 INTRODUCTION

1.1 This Design and Access Statement has been prepared on behalf of Dartford Borough Council ('the applicant') in support of their planning application on land between Orchard Street and Hythe Street, Dartford. The planning application relates to:

***“Retrospective planning application for temporary theatre (including auditorium, foyer, bar area, box office, toilets, stage, backstage and storage) (Sui Generis); together with associated servicing area; external waste storage, above ground fuel tanks, external heaters and power generators; pedestrian ramps (for external Stage Door and Fire Exits); alterations to and additional asphalt hardstanding; alterations to vehicle access gates on Hythe Street; alterations to means of enclosure to introduce fire escape gates; on-site security (V Mesh) fencing and external lighting.***

1.2 The application is required following the discovery of 'Reinforced Autoclaved Aerated Concrete' (RAAC) in the roof of The Orchard Theatre in Dartford. Following national guidance and advice from building surveyors the decision has been taken to close The Orchard Theatre to allow works to the roof. As a result of this closure, the Council and the operator of the theatre (Trafalgar Theatres) have taken the decision to construct a temporary theatre to accommodate performances already scheduled to take place in coming months, including the 2023/24 pantomime 'Beauty and the Beast'. The temporary theatre is expected to operate until the end of the 2024/25 pantomime season and is expected to be dismantled in January 2025.

1.3 This statement addresses the key issues formerly promoted by CABE which are still of relevance, namely: Use, Amount, Layout, Scale, Landscaping, Appearance and Access.

1.4 All materials contained within this DAS are shown for ILLUSTRATIVE PURPOSES ONLY and are not to scale. Scale drawings form part of the application submission.

## 2.0 SITE AND LOCATION

2.1 The application site, which has an area of approximately 0.57 hectares, is located between Orchard Street and Hythe Street in Dartford town centre.

Figure 1: Site Location



2.2 The site comprises cleared land which comprises a mixture of largely asphalt hardstanding and compacted hardcore. Until circa 2010 the site accommodated a Co-Op department store (which closed in the early 2000s). The Co-op building primarily used to be bounded by Hythe Street and Orchard Street, but since its demolition only one frontage, dating from the 1930s, has been retained on Spital Street at the southern end of Orchard Street. More historically, the site previously comprised residential dwellings and the Kidd Brewery (and before that Miskin's Brewery), a large 19th century industrial complex.

- 2.3 Following the demolition of the Co-Op, the site was cleared and until recently it has been used as a temporary contractor's compound for public realm/highway works being undertaken in the town centre on behalf of Dartford Council.
- 2.4 The application site is in a highly sustainable location, being within a town centre location, adjoining existing shops and services. In addition, the site is highly accessible, being only 150 metres from the numerous bus stops on Home Gardens to the north east. These stops provide bus services west to Woolwich, south to South Darenth and West Kingsdown, and east to Bluewater. In addition, the site immediately adjoins a town centre bus stop on Hythe Street. Dartford train station is located approximately 400m walking distance to the north east, providing rail services west into London Victoria and London Charing Cross and east to Gravesend and Rainham.
- 2.5 The site boundaries are currently protected by steel palisade fencing, with two 6m gated vehicle accesses, one on Orchard Street and a second on Hythe Street, both of which include dropped kerbs. There are no Public Rights of Way (PRoW) within or directly surrounding the Site. A sub-station (outside of the applicant's ownership) is located in the north western corner of the site, accessed from Orchard Street.
- 2.6 The land to the west of the site (west of Orchard Street) accommodates the 110 space Westgate surface car park, to the south is the rear of retail premises (fronting Spital Street), including the vacant frontage of the former Co-Op store which has been retained. To the east (east of Hythe Street) are retail stores on the east side of Hythe Street, and to the north is a terrace of residential properties together with an Indian restaurant/takeaway. The Orchard Theatre lies less than 100 metres to the east of the application site.
- 2.7 Whilst there are no statutory listed buildings on the site, it is partly located (to the south) within the Dartford Town Centre Conservation

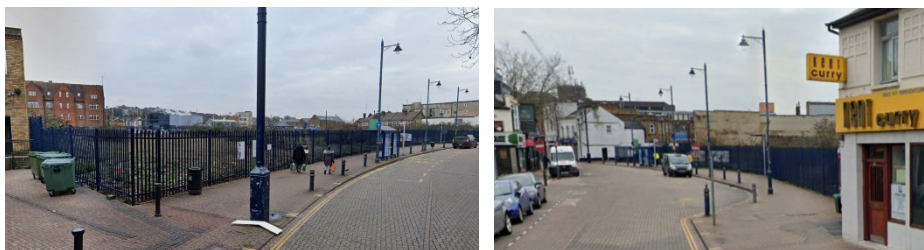
Area. In addition, the retained Co-op façade on Spital Street is identified as being appropriate for local listing in the Conservation Area Statement. Within the wider area, local heritage assets include a Grade II listed building (The Coach and Horses Public House) to the south east of the site on Spital Street. Furthermore, there are other listed buildings to the south, south west and south east of the site.

- 2.8 As outlined in further detail in the supporting Planning Statement, the application site, together with the former decked car park site to the west (now the Westgate car park) was subject to the approval of a full planning permission (Ref. DA/20/00409/FUL) granted on 14<sup>th</sup> April 2022 for 'Comprehensive mixed use redevelopment of the Westgate Dartford Site comprising flexible commercial (A1, A2, A3, A4, D1, D2 and B1), cinema (D2), hotel (C1), residential (C3) and health / wellbeing (D1) with associated parking, infrastructure, public realm and landscaping'. This permission has not been implemented.
- 2.6 Various photos of the site are included in Figure 2.

**Figure 2: Site Photos**







### 3.0 PROPOSED DEVELOPMENT

- 3.1 Following the temporary closure of The Orchard Theatre (to repair the roof), the decision has been made by the Council and Trafalgar Theatres to open a temporary theatre. The immediate loss of theatre provision during the busiest quarter in the theatre year means that swift action is required to mitigate the impact. Getting a temporary venue open in time for the pantomime season is crucial from both a financial and community perspective as it is the time of year that most residents attend the theatre. Reopening a temporary theatre will also protect employment of the theatre team, visiting artists and backstage crew,
- 3.2 The new temporary theatre is designed to operate for the entire building works at The Orchard Theatre, which are expected to be completed in late 2024, with the temporary theatre expected to close in January 2025. During its operation, it is expected that some of the performances and events that were scheduled to take place in The Orchard Theatre will be transferred to the new venue, although this is not possible for all performances. On average, it is expected the temporary theatre will hold between 3 and 8 events per week (the number being dependent on the nature of shows visiting the theatre in any given week), although during the pantomime season, the number is expected to increase to 12 performances per week.

- 3.3 Following the decision to open a temporary theatre, two potential sites were considered, the application site (west of Orchard Street) and the Acacia car park (west of Darenth Road). Assessments were undertaken of both sites, which demonstrated that the application site was the most appropriate. due to its location in the town centre The application site was chosen for the following reasons:

- The site is located within the town centre, close to the existing Orchard theatre;
- The site's town centre location means that it is highly accessible, being located close to public transport facilities (the station being 400 metres to the north east, and the bus stops on Home Gardens being even closer), and car parks;
- The site is vacant and level;
- The entire site is securely fenced;
- The site's size (including its width) could accommodate the size of theatre needed to provide an appropriate replacement to The Orchard Theatre;
- The site benefits from connections to infrastructure, including power, water supply and drainage;
- The site is wholly owned by Dartford Borough Council.

- 3.4 The proposed temporary theatre comprises a series of off-site constructed temporary inter-connecting module structures (referred to from here on as 'Tents'). These are erected on a scaffolding constructed base platform covered with wooden ply, which raises the tents approximately 0.95m above the ground level. The structure is fixed to the ground using bracing systems and steel plates bolted to the ground using chemical/resin anchors and metal stakes.

- 3.5 Further details of the design and appearance of the temporary theatre, together with the access to and within the site are described in the following sections.

## 4.0 DESIGN ISSUES ARISING FROM THE PROPOSAL

4.1 This section describes the scheme and examines its use, amount, scale, layout, landscaping, appearance, means of enclosure, external lighting and operational requirements.

### Use

4.2 The proposed use is a theatre (a sui generis use). Given the temporary nature of the proposal, the planning application proposes a 15 month period for the theatre to be in operation (this length of operation is expected to be secured by a planning condition embedded into a future planning approval).

4.3 The purpose of the development is to temporarily replace The Orchard Theatre, whilst building works take place, enabling the theatre to honour the performances and bookings scheduled over the next 12-15 months. As a result, the temporary theatre is not only required to be of a size capable of accommodating the size of audience that have already pre-purchased tickets for performances at The Orchard Theatre, but it also needs to provide support facilities which performers and members of the audience expect to find in a fully functioning theatre. These facilities include:

- The main auditorium, which has a seating capacity of 1,091;
- The stage area, which is required to be sufficiently large and flexible to accommodate a range of productions;
- The performers area, which includes the stage door, 8 No. dressing rooms (of differing sizes), a green room, toilets and showers and an area for laundry;
- Foyer and bar area (for use prior to performances and during internals, including to allow ticket checking);
- A box office (which, in addition to being open during performances, will also be open outside of these times to enable the purchase and collection of tickets);

- Audience toilets (separate male, female and disabled toilets);
- Back of house areas for staff, including 3 No. offices, 2 No. store rooms, a cold storage area and a cleaners store.

4.4 All of the uses described above (and illustrated in Figure 7 & 8 below) are ancillary to the main use of the structure as a theatre and will ensure that staff and members of the audience have the most enjoyable experience possible, in an environment which replicates a permanent theatre.

### Amount and Scale

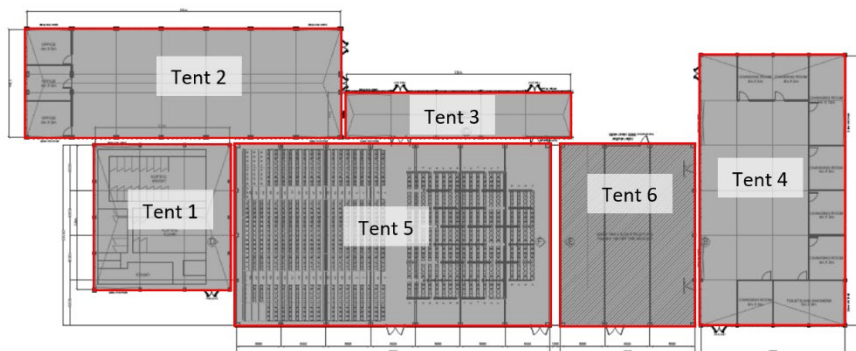
4.5 The proposed structure comprises 6 No. inter-connected Tents, which are joined by canopies, designed to ensure that both internally and externally the component Tents will give the impression of a single structure.

4.6 Collectively, the various Tents have a combined GEA floorspace of 2,405.15 sqm as illustrated in the following table and diagram:

*Figure 3: Size of Proposed Tents / Floorspace*

Structure/Name	Purpose	Sq. M (GIA)
Tent 1: 'Premier Structure'	Audience toilets, Storage, Offices	16m x 15m = 240 sqm
Tent 2: Absolute A Frame Structure	Bar, Entrance Area, Box Office	12m x 35m = 420 sqm
Tent 3: Structure	Link Corridor (from Bar/Entrance Area to Auditorium)	5m x 25m = 125 sqm
Tent 4: Premier Structure	Stage Door, Dressing Rooms, Performer Toilets and Showers, Green Room, Laundry	16m x 30m = 480 sqm
Tent 5: Aganto Temp Structure	Main Auditorium	20m x 35m = 700 sqm
Tent 6: Aganto Temp Structure	Stage	20m x 15m = 300 sqm
<b>Sub- Total (6 No. Tents)</b>		<b>2,265 sqm</b>

Connecting Canopies	140.15 sqm
<b>Gross External Area</b>	<b>2,405.15 sqm</b>



4.7 In terms of the heights, the temporary theatre has been designed to be as low as practical while still allowing the necessary technical functionality of the theatre within. The proposed Tent heights are as follows:

Figure 4: Proposed Tent Heights

Structure/Name	Purpose	Ridge Height
Tent 1: 'Premier Structure'	Audience toilets, Storage, Offices	5.940 m
Tent 2: Absolute A Frame Structure	Bar, Entrance Area, Box Office	5.215 m
Tent 3: Structure	Link Corridor (from Bar/Entrance Area to Auditorium)	4.078 m
Tent 4: Premier Structure	Stage Door, Dressing Rooms, Performer Toilets and Showers, Green Room, Laundry	5.940 m
Tent 5: Aganto Temp Structure	Main Auditorium	9.770 m
Tent 6: Aganto Temp Structure	Stage	10.770 m

4.8 The overall mass of the proposed theatre is illustrated in the models included in Figure 5 and 6.

Figure 5: 3D Model (Viewed from South East)

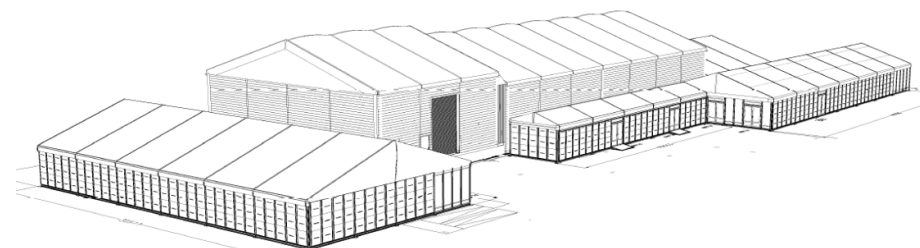
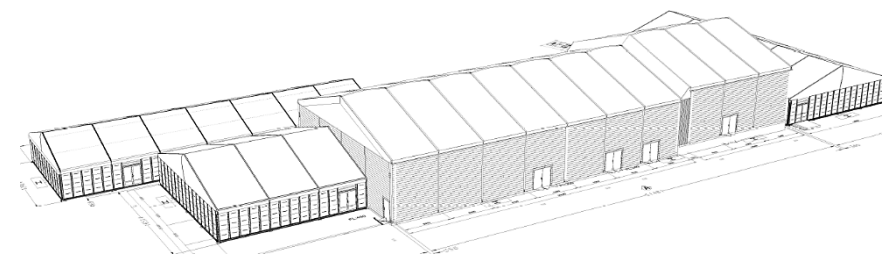


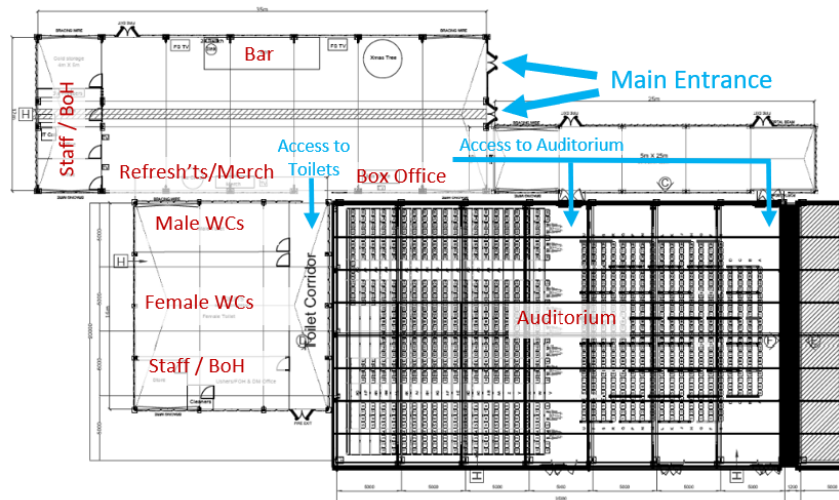
Figure 6: 3D Model (Viewed from North West)



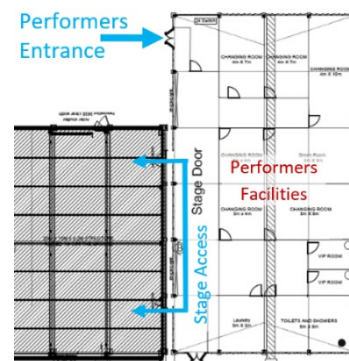
### Layout

4.9 The layout of the temporary theatre follows a standard design for public entertainment venues. In this regard, members of the audience will access the building from the two entrance doors located in the south elevation of Tent 2, where they will find the foyer, box office and bar. From this area audience members will be able to use the toilet facilities in Tent 1 and/or access the main auditorium (in Tent 5), via the link corridor accommodated in Tent 3. This layout and points of access for the audience is illustrated in Figure 7.

**Figure 7:** Layout of Proposed Theatre (Extract - For Audience)



**Figure 8:** Layout of Proposed Theatre (Extract For Performers)



- 4.10 The auditorium accommodates 1,091 seats, divided between floor seats closest to the stage and tiered seating, accessed by two stepped aisles. Approximately 10% of the seating is designed for access by disabled users.
- 4.11 The layout is designed to separate the areas accessible to audience members from the performers facilities. To achieve this, the performers area is separated from the audience by the stage. Performers would access the theatre by a separate entrance (located in the north east corner of Tent 4), which provides access to the changing rooms and other facilities (including the green rooms and showers/toilets). Performers will be able to access the stage via the stage door (using internal steps and a ramp up to the elevated stage). The configuration of the performers area is illustrated in Figure 8 below.

- 4.12 The layout of the wider site on which the theatre is to be located is illustrated in the Proposed Site Plan (Drawing No. 1000009506-4-0100-01), a copy of which is reproduced as Figure 9.

**Figure 9:** Layout of Wider Site



- 4.13 Figure 9 illustrates that the temporary theatre will be located centrally within the site, with the public (audience) facilities in the northern



part of the site, the auditorium and stage in the central part of the site and the performers area in the southern part of the site.

- 4.14 Audience members access to the theatre will be taken from Hythe Street. Pedestrians entering the site will pass across a new asphalt surface (which is being put down on an existing asphalt hard-standing on the site) where they will access the theatre's main entrance. The new asphalt surface is being gradually inclined from Hythe Street to the theatre entrance, thereby ensuring that a flush entrance can be achieved at the main doors to the theatre (avoiding the need for pedestrian ramps to access the building).
- 4.15 Performers will also access the theatre from Hythe Street, accessing the building using the door in the north east corner of Tent 4. Due to a level change between this entrance door and the hardstanding outside area, a ramp is to be introduced to access this door.
- 4.16 A servicing area (accessed from Hythe Street) will be located in the southern part of the site. This servicing area is able to accommodate 16.5 metre HGV vehicles.
- 4.16 Other features of the site layout include:
- Two compounds for the storage of above ground fuel bowsers/tanks and generators (the larger of the two being in the south east corner of the site, with a small compound in the site's north west corner), see **Appendix A** for details – both compounds will be secured by a new 2.4 m V Mesh security fence, with a maintenance access gates;
  - Two waste/recycling stores located between Tent 2 and the Hythe Street site boundary. The larger area is the southern store, which will be used for general waste and recycling (excluding glass). This area has been designed to accommodate 6 No. 1100L wheeled bins. The northern waste store is purely for the

storage of glass recycling and is located close to the theatre's bar, where most glass will be derived. This smaller area would accommodate 8 No. wheelie bins;

- 6 No. locations where external heating units will be sited.

#### **Appearance/Materials and Design**

- 4.17 The design of the temporary theatre is highly functional, reflecting the nature of the 6 No. tent structures of which it is made up. The proposed temporary theatre (including external site works) will be constructed of the following materials:

**Figure 10: Proposed Materials**

Element of Development		Material
Roof	Roof (External)	PVC Roof (Colour: White)
	Roof (Linings)	Polyester Fabric
Walls	Walls (Outside)	4mm Trovidur ESA PVC Sheet (Colour White)
	Walls (Internal)	MDF Boards
	Wall (Linings)	Polyester Fabric
Floor/Base	Floor Structure	Galvanised Steel Scaffolding Poles
	Floor (Base)	Phenolic Ply
	Floor (Overlay)	18mm chipboard moisture resistant Tongue & Groove
Doors	Double (Entrance Doors)	Aluminium Frame with Glass window (Colour: White)
	Double (Emergency Exit doors)	Aluminium Frame with Plastic panel (Colour: White)
Additional Fences/Gates	Amended and new gates in 2.4m perimeter fence	Steel
	Additional V Mesh Security Fencing	Powder coated pre-galvanised steel wire
Surface Treatment	Existing Hardstanding	Part crushed stone fill, part asphalt
	Additional Hardstanding	Asphalt

### Hard and Soft Landscaping

- 4.18 The site is devoid of soft landscaping. Given the temporary nature of the proposals, no additional soft landscaping is proposed.
- 4.19 Whilst the majority of the site is currently surfaced with crushed stone fill, there is an existing hardstanding area (constructed of asphalt) which has previously been used for car parking (when the site was a construction compound). This existing hardstanding is located in the

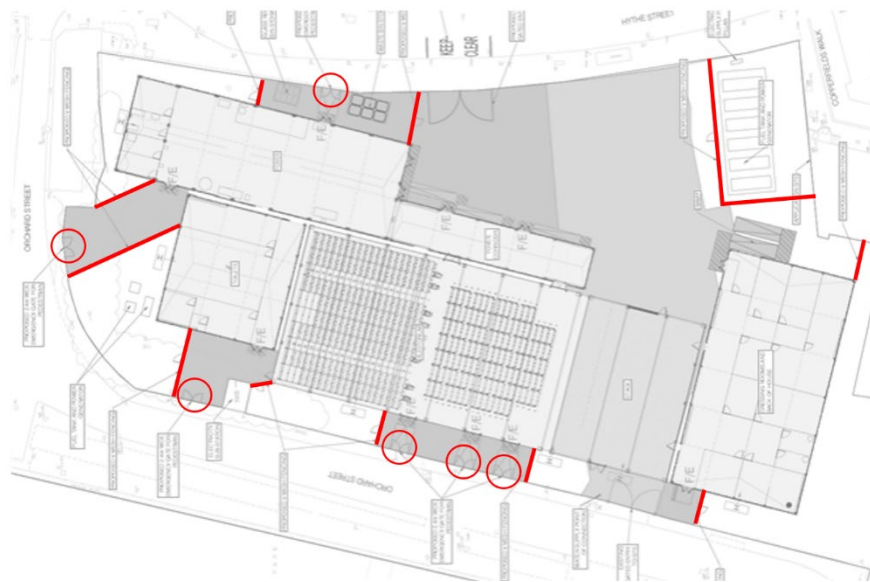
southern part of the site, and is accessed from the Orchard Street gate, with an asphalt connection to the existing Hythe Street gate.

- 4.20 The proposal will retain the existing hardstanding, part of which is being used to accommodate Tent 4 and 6. The hardstanding will be extended northwards (using asphalt), to form the surface of the main entrance to the site from Hythe Street, upon which both pedestrians and vehicles will access the site. In addition, several other hardstanding areas (constructed of asphalt) are to be introduced to provide emergency access routes between fire exits (in the tent's outside walls) to the emergency pedestrian access gates being introduced to the site's perimeter fencing.

### Means of Enclosure / Gated Access

- 4.21 The site is surrounded by an established 2.4m steel palisade fence, with two gates allowing vehicular access (one on Hythe Street and a second on Orchard Street).
- 4.22 The proposals retain this fence and the two existing gates, although the Hythe Street gate is to be widened (from 6m to 8m) to allow larger HGVs to enter the site. In addition, 6 No. pedestrian gates are to be introduced into the existing steel palisade fence (1 No. on Hythe Street and 5 No. on Orchard Street). These gates are for emergency use only and will be positioned to serve fire exits. The location of the new gates are illustrated (by the red circles) in Figure 11.

**Figure 11:** Location of Emergency Pedestrian Gates and Additional Fencing



4.23 Figure 11 also identifies (using red lines) the locations where new 2.4 metre V Mesh fencing is to be constructed, to further improve site security and to ensure that visitors to the site cannot access non-public areas.

**External Lighting**

4.24 External public lighting is to be introduced into the site, for wayfinding and security purposes. Full detail of the proposed lighting is set out in the technical specifications which support this application, including a lighting plan and schedule.

4.25 In summary, two different types are lighting (see **Appendix B** for details) are to be introduced, namely:

- **Type A:** 8 No. 6m root mounted lighting column to KCC coastal specification with new CU Phosco LED P863 128 P4 luminaire, having a maximum light output of 6.35klm, (optic setting: W5-

325-43W), post top, 0 degree tilt. Column to be wet painted. Column and luminaire finished in black RAL 9005;

- **Type B:** 5 No. 6m root mounted lighting column to KCC coastal specification with new CU Phosco LED P863 128 F2 luminaire, having a maximum light output of 14.53klm, (optic setting: W5-750-95W), post top, 0 degree tilt. Column to be wet painted. Column and luminaire finished in black RAL 9005.

**Operational Requirements**

4.26 The temporary theatre's performance hours will generally be between 19:30 and 22:30/23:00 hours Monday to Sunday, with an occasional matinee/daytime performance. Outside of these hours, the box office is expected to open daily between 12:00 and 18:00 and theatre staff will be on site from 08:00 to 23:30.

4.27 It is anticipated that delivery vehicles transporting production equipment to and from the site will operate between 07:00 and 13:00 hours. However, this is largely dictated by the individual requirements of each production.

**5.0 ACCESS ISSUES ARISING FROM THE PROPOSAL**

5.1 This section describes the access to and within the temporary theatre.

**Access into and within the Temporary Building**

5.2 As illustrated in Figure 7, audience members will enter the site from Hythe Street in the west, accessing the theatre via a step free entrance in the south east corner of Tent 2. Performers will also access the site from Hythe Street, using a separate entrance located in the

north east corner of Tent 4. Due to a change in levels, this entrance requires a DDA compliant access ramp.

- 5.3 The areas of the theatre accessible to audience members will be DDA compliant, comprising either flat surfaces or ramps capable of use by wheelchair users. The proposed theatre will be single level, therefore no lifts are proposed. The only inaccessible area will be the tiered seating to the rear of the auditorium. To address this, 10% of the seating is designed to accommodate disabled users, including wheelchair seating positions on the flat auditorium area, thereby negating the need for those with mobility impairment to use the tiered seats.
- 5.4 Other measures designed to ensure maximum accessibility within the building include:
- Provision of accessible toilets;
  - Ramped approaches will have a non-slip surface and designed to be 1:20 or lower gradient to meet DDA requirements;
  - Doors will be managed by stewards before and after a show and during interval;
  - Doors into all parts of the theatre will be wide enough to allow wheelchair access;
  - Lighting will be designed to give appropriate levels of lighting for wayfinding in and around buildings and give good illumination at face level;
  - The auditoria will have a hearing loop system to aid those with hearing impairments;
  - Some performances will be signed for the benefit of patrons who use sign language. Trained British Signed Language (BSL) signers are expected to stand to the side of the stage and interpret the script used by the performers at the same time as it is being performed.

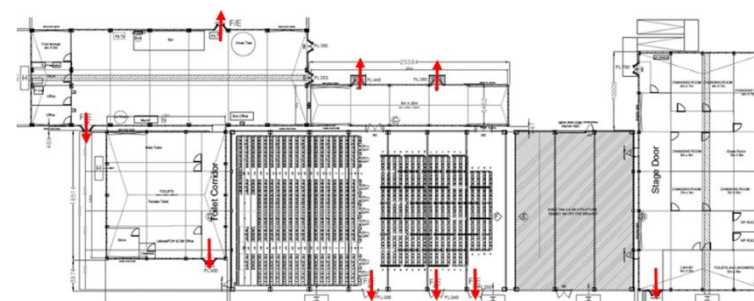
### Servicing Access

- 5.5 Production equipment, sets and costumes will enter the theatre via a roller shutter loading/servicing door located in the eastern elevation of Tent 6.

### Fire Exits

- 5.6 Full details of fire safety measures are set out in a separate Fire Strategy which supports this application. In summary, fire egress comprises 9 No. fire exits, comprising 1 No. from Tent 4; 3 No. from Tent 5; 1 No. from Tent 1; 2 No. from Tent 2; and 2 No. from Tent 3.
- 5.7 Given that the temporary structure is erected on a base platform (circa 0.95 m above ground level), each fire exit would access onto a ramp to allow all building users to exit the building safely in case of fire. Where fire exits/ramps are close to the site's existing perimeter fence, new emergency access gates will be installed in the fence to enable safe exit out of the site, in the event of fire.
- 5.8 The location of the fire exits are illustrated in Figure 12.

**Figure 12:** Location of Fire Exits



### Vehicle Access To The Site

- 5.9 The only vehicles expected to access the site will be HGV vehicles and vans delivering production equipment/sets/costumes to the site,



together with refuse vehicles collecting waste and vehicles delivering stock for the bar and refreshment facilities.

- 5.10 Based on the operation of the existing Orchard Theatre, it is unlikely that more than 2 No. HGVs will need to access the site per day. The service area is designed to accommodate up to 16.5 metres HGVs.
- 5.11 The temporary theatre will be accessed by vehicles from Hythe Street, using the existing vehicle cross over and dropped kerb. However, to enable ease of access, the existing gates on Hythe Street are to be widened (from 6m to 8m wide).
- 5.12 Vehicles entering from Hythe Street (travelling in a northerly direction) will reverse into the site. Thereafter they will leave the site in a forward gear. These manoeuvres are illustrated in the following swept paths.

**Figure 13:** Vehicle Tracking Plans



- 5.13 To assist servicing vehicles enter the site, a 'Keep Clear' white lined marking will be added to the highway in front of the dropped kerb. This is designed to prevent parked cars (including taxi's using the adjoining taxi rank) from restricting service vehicle access.
- 5.14 To remove conflict between pedestrians entering the site (to purchase tickets at the box office or to attend performances), the operator of the Theatre ('Trafalgar Theatres') is prepared to accept a planning condition requiring the operation of the temporary theatre to follow the procedures and timings for servicing set out in the supporting 'Traffic Management Plan'.

### Waste Storage and Collection

- 5.12 Two storage areas for waste and recycled material will be provided on site, close to the temporary building. These will be positioned in the east of the site, between Tent 2 and the Hythe Street site boundary.
- 5.15 The larger waste store area is the southern store, which will be used for general waste and recycling (excluding glass). This area has been designed to accommodate 6 No. 1100L wheeled bins.
- 5.16 The smaller (northern) waste store is purely for the storage of glass recycling and is located close to the theatre's bar, where most glass will be derived. This recycling store will accommodate 8 No. wheelie bins.
- 5.17 Waste vehicles are expected to enter the site on a weekly basis, using the servicing area accessed from Hythe Street.

### Car & Cycle Parking

- 5.18 No car or cycle parking is proposed within the application site. Instead, visitors to the site (both audience and performers) will be encouraged to use public transport facilities (described earlier in this Statement) or use the existing town centre car parks, including The

Orchards Shopping Centre car park (to the east) or the Westgate car park (to the west).

- 5.19 Visitors cycling to the temporary theatre will be able to use the existing cycle stands located in Spital Street.

## 6.0 SUSTAINABILITY / ENERGY EFFICIENCY

6.1 Given the temporary nature of the proposed theatre, the structures being used (i.e. the 6 No. tents, fixtures and fittings, seating, toilets, etc ) are dismantlable and reuseable. In addition, the battery back-ups for the generators and all timber used in the construction of the temporary theatre will be reused or recycled.

6.2 Much of the internal production equipment needed to operate the theatre, including the theatre lighting rig and house lights (all of which are LED), is being transferred from The Orchard Theatre, and will be returned back into the permanent theatre when the repairs to the roof have been completed.

6.3 Beyond the above measures, it is difficult to introduce other sustainability and energy efficient measures into the proposed design, given the temporary nature of the facility and the 'emergency' need for the theatre (to fill a short term void created by the temporary closure of The Orchard Theatre).

## 7.0 SUMMARY AND CONCLUSION

7.1 The key elements of the proposal are:

- The proposed theatre is needed as a temporary replacement for The Orchard Theatre, which has had to close due to essential roof maintenance work to replace 'Reinforced Autoclaved Aerated Concrete' (RAAC);

- The proposed theatre (to be known as 'the 'Orchard West Theatre') is constructed of 6 No. portal structures (referred to in this DAS as tents), which are joined by canopies to create a single structure;
- The temporary theatre is expected to accommodate regular performances (in place of The Orchard Theatre) from December 2023 to January 2025, after which it is to be removed and the site returned to its current condition;
- To control the temporary period of operation, this retrospective planning application seeks planning permission for the structure to remain in place for 15 months;
- The application site was chosen as it is in a highly accessible town centre location, close to the existing theatre. It is also flat and large enough to accommodate the size of structure needed to meet the theatre's temporary needs;
- The temporary theatre will have a GEA of 2,406 sqm, and will be capable of accommodating a maximum audience of 1,091 people;
- The internal layout follows the standard design of public entertainment venues including a box office, foyer, bar and refreshment area, toilets and an auditorium;
- The temporary theatre site will be accessed via enlarged gates from Hythe Street, which are located close to the theatre's main entrance. The gates also provide access to a servicing/delivery area;
- Any potential conflict between visitors to the site and vehicles using the servicing/delivery area will be managed by a Traffic Management Plan, which will limit the hours which vehicles can enter/exit the site (to avoid performance times);

- Additional asphalt hardstanding is being introduced to ease pedestrian and vehicle movements into the site;
- The wider theatre site includes other features such as waste storage, external heaters (which heat the inside of the theatre) and secure areas for the storage of generators and fuel tanks (for the heating/generator system) – manufacturers details and specifications for these features are included in **Appendix A**;
- The temporary theatre has been designed in compliance with fire safety requirements, as set out in a Fire Strategy. This includes use of fire retardant materials and 9 No. fire exits leading to emergency ramps out of the building and gates to exit the perimeter fencing;
- Additional fencing is to be introduced onto the site, to secure non-public areas.
- External lighting will be provided for wayfinding and security purposes;
- The design incorporates measures to ensure the temporary theatre is accessible to all, including wheelchair users and people with other disabilities;
- No parking is to be provided on site, and visitors will be encouraged to use public transport or town centre car parks.

7.2 In summary, whilst the proposed theatre is clearly a temporary structure, reflected in its functional appearance, careful attention has been paid to its design and access arrangements to ensure that visitors to the theatre get an enjoyable and immersive experience, in an environment which is little different to a permanent theatre.

## **Appendix A:**

Manufacturer Specification for:

- Generators;
- Heating Equipment (three different types)
- Fuel Tanks





# 60kVA

## STAGE V COMPLIANT

### Power Rating

Continuous Power (PRP)	<b>60.3 (kVA)</b>
Continuous Power (PRP)	<b>48.2 (kW)</b>

### Rated Voltage

Voltage (V)	<b>230</b>
Phase	<b>3</b>
Rated Frequency (Hz)	<b>50</b>

### Engine Data

Engine Brand	<b>FPT</b>
Engine Model	<b>F34TEVP01</b>
Speed	<b>1500 RPM</b>
Governor Type	<b>Electronic</b>
Fuel	<b>Diesel</b>

### Alternator

Alternator Brand	<b>Mecc Alte</b>
Alternator Model	<b>ECP32-2M4 C</b>
Type	<b>Brushless</b>
Poles	<b>4</b>
IP Protection	<b>23</b>
Winding	<b>Standard</b>
Efficiency @ 100% of Load	<b>89.4%</b>
Power Factor	<b>0.8</b>
Class	<b>H</b>

### Control Panel

Control Panel	<b>Deep Sea 7320</b>
---------------	----------------------

### Fuel System

Capacity (Litres)	<b>120</b>
<b>Fuel Consumption</b>	<b>L/hr</b>
100% Load	<b>13.99</b>
75% Load	<b>8.32</b>

### Noise Level

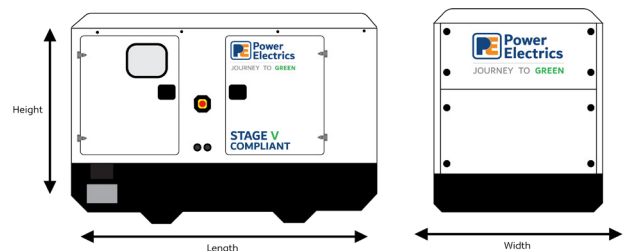
Guaranteed Noise Level (LWA)	<b>93 dB(A)</b>
Noise Pressure @ 1m	<b>76 dB(A)</b>
Noise Pressure @ 7m	<b>64 dB(A)</b>

### Weight (Kg)

Weight	<b>1250</b>
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### Dimensions

Configuration	Length (mm)	Width (mm)	Height (mm)
Generator Only	2400	1040	1745



### Head Office

St Ivel Way, Bristol, BS30 8TY  
 T: 0370 850 0858  
 W: [www.powerelectrics.com](http://www.powerelectrics.com)  
 E: [rental@powerelectrics.com](mailto:rental@powerelectrics.com)





NEW

# SCUDO

GENERATORI D'ARIA CALDA A BASAMENTO A COMBUSTIONE INDIRECTA  
CON VENTILATORE CENTRIFUGO

*BASE FRAMED INDIRECT COMBUSTION SPACE HEATERS WITH CENTRIFUGAL FAN*

## SCUDO - GENERATORI D'ARIA CALDA A BASAMENTO A COMBUSTIONE INDIRECTA CON VENTILATORE CENTRIFUGO

- Basamento per movimentazione mediante inforcolamento
- Carter di protezione anteriore con porta dotata di serratura per copertura bruciatore
- Carter posteriore a protezione del ventilatore centrifugo con raccordo laterale di aspirazione/ripresa aria
- Basamento di protezione parte superiore con ganci per sollevamento/fissaggio
- Gancio di sollevamento centrale
- Pannelli rimovibili per il lavaggio interno con pieghi di rinforzo a croce per garantire maggior rigidità e robustezza
- Utilizzo esclusivamente di viti e inserti metrici per il fissaggio, no viti autofilettanti
- Il nuovo scambiatore di calore abbinato ai nuovi ventilatori di maggiori prestazioni permettono di ottenere un rendimento termico del 96%;
- Ventilatore protezione (IP 55):
  - molto silenzioso (rumore  $\leq 69$  db a 2 metri);
  - ad alta prevalenza e prestazioni che garantisce un elevata portata d'aria e pressione statica (500 Pa) per la diffusione omogenea ed a lunga distanza dell'aria calda mediante canalizzazioni o guaine;
  - ventilatore ancorato alla struttura portante mediante robusti longheroni e staffe di fissaggio;
  - serranda regolabile di ripristino aria fresca;
- Quadro elettrico posteriore di comando (IP 65):
  - posizionato nella parte posteriore evita che sia a contatto con polvere, acqua, neve etc;
  - provvisto di una robusta copertura metallica che consente anche il ricovero di attrezzi e documenti;
- Quadro elettrico anteriore di servizio (IP 65):
  - posizionato nella parte anteriore della macchina dentro il cassetto copertura bruciatore: per evitare che sia a contatto con polvere, acqua, neve per una più facile manutenzione; per un più agevole controllo ed intervento dell'operatore
- Base adapted for moving with a fork lift
- Front protective casing with lockable door for burner cover
- Rear protective casing for the centrifugal fan with air intake/aspiration side joint
- Protective base for the upper part with lifting/fastening hooks
- Central lifting hook
- Removable panels for internal washing with reinforcement cross folds to ensure more rigidity and strength
- Exclusive use of metric screws and inserts for fastening, no self-tapping screws
- The new heat exchanger combined with the new higher performance fans, achieve a thermal output of 96%
- Fan protection IP55:
  - very silent (noise level  $\leq 69$  db at 2 meters);
  - high output and performances which ensure high air delivery and static pressure (500 Pa) for uniform diffusion and through long distances of warm air through canals or ducts;
  - fan anchored to weight-bearing structure through sturdy beams and fastening brackets;
  - adjustable shutter for fresh air restoration;
- Rear electric control panel (IP65):
  - situated at the rear of the machine to avoid contact with dust, water, snow, etc...
  - supplied with a sturdy metal cover which can also be used to stow tools and documents;
- Front service control panel (IP 65):
  - situated at the front of the machine, inside the burner cover casing: to avoid contact with dust, water, snow; for easier maintenance; for more convenient control and intervention operations



ACCESSORI A RICHIESTA / ACCESSORIES ON DEMAND

RACCORDO 1 VIA ONE WAY ADAPTER	RACCORDO 2 VIE TWO WAYS ADAPTER
	
<p>Mod. Ø 700 mm Cod. 02AC891</p>	<p>Mod. Ø 600 mm Cod. 02AC892</p>
RACCORDO 4 VIE FOUR WAYS ADAPTER	GUAINE FLESSIBILI IN PVC L= 6 m CON CINGHIA DI FISSAGGIO FLEXIBLE AIR DUCTS 6 m WITH CLIP
	
<p>Mod. Ø 400 mm Cod. 02AC893</p>	<p>Mod. Ø 650/700 mm Cod. 02AC568</p>
RACCORDO ASPIRAZIONE 1 VIA AIR INLET ADAPTER	GUAINA RINFORZATA PER RIPRESA ARIA REINFORCED FLEXIBLE AIR INLET DUCT
	
<p>Mod. Ø 745 mm Cod. 02AC894</p>	<p>Mod. Ø 750 mm Cod. 02AC804</p>
	<p>Mod. SCUDO 235 Fascetta fissaggio guaina-clip for flexible duct (Ø 400-750 mm) Cod. 02AC663</p>





## SCUDO - GENERATORI D'ARIA CALDA A BASAMENTO A COMBUSTIONE INDIRECTA CON VENTILATORE CENTRIFUGO

<b>BRUCIATORE GASOLIO RIELLO</b> <i>RIELLO DIESEL BURNER</i>	<b>BRUCIATORE RIELLO GPL + RAMPA GAS</b> <i>LPG RIELLO BURNER + GAS TRAIN</i>	<b>BRUCIATORE RIELLO METANO + RAMPA GAS</b> <i>NATURAL GAS RIELLO BURNER + GAS TRAIN</i>
		
<b>Mod. DIESEL/OIL</b> <b>Cod. 076B105</b>	<b>Mod. GPL/LPG</b> <b>Cod. 074B105-08</b>	<b>Mod. METANO/NATURAL GAS</b> <b>Cod. 074B106-08</b>
<b>BRUCIATORE GASOLIO ECOFLAM</b> <i>ECOFLAM DIESEL BURNER</i>	<b>PASSAPARETE SNORKEL + GUAINA FLESSIBILE</b> <i>SNORKEL PASS PLATE + FLEXIBLE DUCT</i>	<b>KIT SERRANDA TAGLIAFUOCO</b> <b>MANDATA ARIA(REI 120)</b> <i>AIR OUTLET FIRE SHUTTER KIT(REI 120)</i>
		
<b>Mod. DIESEL/OIL</b> <b>Cod. 072B105</b>	<b>Mod. Ø 150 mm</b> <b>Cod. 02AC794</b>  <b>Mod. Guaina /Duct RIELLO</b> <i>(Ø 150 mm, l=5m)</i> <b>Cod. 02AC792</b>	<b>Cod. 02AC898</b>
<b>KIT SERRANDA TAGLIAFUOCO</b> <b>INGRESSO ARIA (REI 120)</b> <i>AIR INLET FIRE SHUTTER KIT (REI 120)</i>	<b>TERMOSTATO AMBIENTE +5/+30°C</b> <b>CON CAVO L=10 m E SPINA 90°</b> <i>ROOM THERMOSTAT +5/+30°C</i> <b>CABLE 10 m, PLUG 90°</b>	<b>TERMOSTATO AGRICOLTURA/CANTIERE</b> <b>-5/+50°C CON CAVO L=10 m E SPINA 90°</b> <i>HEAVY DUTY THERM. -5/+50°C</i> <b>CABLE 10 m, PLUG 90°</b>
		
<b>Mod. Ø 745 mm</b> <b>Cod. 02AC913*</b>	<b>Cod. 02AC581</b>	<b>Cod. 02AC582</b>
<b>TERMOSTATO ELETTRONICO DI</b> <b>PRECISIONE IP55 CON DISPLAY -10/+70°C</b> <b>SENZA CAVO E SPINA</b> <i>ELECTRONIC THERMOSTAT IP55</i> <b>WITH DISPLAY -10/+70°C</b> <b>WITHOUT POWER CORD AND PLUG</b>	<b>KIT COLLEGAMENTO BITUBO SERBATOIO</b> <b>ESTERNO GASOLIO (l= 5 m) +</b> <b>KIT ATTACCHI RAPIDI</b> <i>TWO-PIPE EXTERNAL FUEL TANK</i> <b>CONNECTION KIT (l=5 m) +</b> <b>QUICK CONNECTIONS KIT</b>	<b>FILTRO GASOLIO RISCALDANTE</b> <i>PRE-HEATED FUEL FILTER</i>
		
<b>Cod. 02AC294</b>	<b>Mod. Kit collegamento bitubo serbatoio esterno/</b> <i>Two-pipe external tank connection kit</i> <b>Cod. 02AC668</b>  <b>Mod. Kit attacchi rapidi (M+F x 2)/</b> <i>Quick connections kit (M+F x 2)</i> <b>Cod. 02AC669</b>	<b>Cod. 02AC818</b>

\* Necessario abbinamento a "raccordo aspirazione" - *Additionally it's necessary to buy "air inlet adapter"*

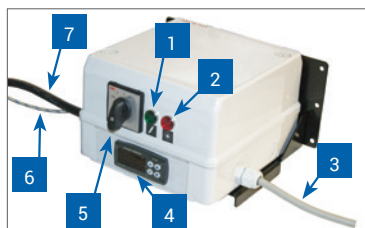
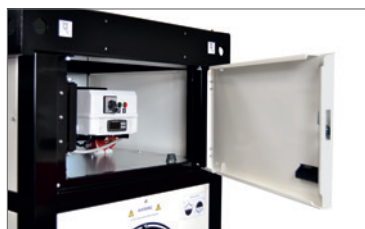
*SCUDO - BASE FRAMED INDIRECT COMBUSTION SPACE HEATERS WITH CENTRIFUGAL FAN*

<p><b>KIT COLLEGAMENTO MONOTUBO CON FILTRO DE AERATORE SINGLE PIPE EXTERNAL FUEL TANK CONNECTION KIT WITH DE AERATOR</b></p>	<p><b>FILTRO SEPARATORE ACQUA ANTI-WATER FILTER</b></p>	<p><b>FILTRO GAS GAS FILTER (P.in MAX 2 bar)</b></p>
		
<p><b>Cod. 02AC819</b></p>	<p><b>Cod. 02AC801</b></p>	<p><b>Mod. DN 32 - 1 1/4"</b> <b>Cod. 03AC604</b></p>
<p><b>FILTRO REGOLATORE GAS GAS FILTER REGULATOR (P.in MAX 2 bar)</b></p>	<p><b>TUBO GAS MEDIA PRESSIONE (l = 3 m) + VALVO- LA CHIUSURA + RACCORDI COLLEGAMENTO MEDIUM PRESSURE GAS HOSE (l = 3 m) + GAS VALVE + CONNECTIONS (P. MAX 10 bar)</b></p>	<p><b>TUBO SCARICO FUMI INOX (L = 1 m) STAINLESS STEEL EXHAUST PIPE (L = 1 m)</b></p>
		
<p><b>Mod. DN 32 - 1 1/4"</b> <b>Cod. 03AC602 (P.out 12 ÷ 50 mbar)</b></p>	<p><b>Mod. Tubo/Hose gas 1 1/4"</b> <b>Cod. 03AC616</b></p>	<p><b>Mod. Ø 200 mm</b> <b>Cod. 02AC287</b></p>
<p><b>TERMINALE PER CAMINO IN INOX STAINLESS STEEL CHIMNEY POT</b></p>	<p><b>KIT SUPPORTO SCARICO FUMI CHIMNEY SUPPORT KIT</b></p>	
		
<p><b>Mod. Ø 200 mm</b> <b>Cod. 02AC658</b></p>	<p><b>Cod. 02AC814</b></p>	

# SCUDO - GENERATORI D'ARIA CALDA A BASAMENTO A COMBUSTIONE INDIRECTA CON VENTILATORE CENTRIFUGO

## BASE FRAMED INDIRECT COMBUSTION SPACE HEATERS WITH CENTRIFUGAL FAN

### Quadro elettrico posteriore- Rear electrical panel

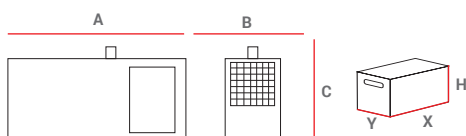


#### Legenda

- 1 Alimentazione elettrica
- 2 Surriscaldamento motore (solo per trifase)
- 3 Cavo motore
- 4 Termoregolatore che consente:
  - il settaggio del termostato FAN per il controllo ventilatore: pre riscaldamento e post ventilazione camera di combustione
  - il settaggio termostati LIMIT per il controllo del bruciatore
  - la visualizzazione delle ore di funzionamento macchina
  - la temperatura uscita aria dalla mandata
  - modifiche settaggio tramite password
- 5 Interruttore 4 posizioni:
  - O**= STOP
  - V**= VENTILAZIONE (ARIA FRESCA)
  - H**= RISCALDAMENTO
  - H+V**= RISCALDAMENTO CON VENTILAZIONE CONTINUA
- 6 Sonda termoregolatore
- 7 Cavo alimentazione

#### Legend

- 1 Electrical power supply
- 2 Motor overheat (only for three-phase)
- 3 Motor cable
- 4 Thermoregulator allows for:
  - FAN thermostat setting to control the fan: before heating and after ventilation of combustion chamber
  - LIMIT thermostat setting for burner control
  - display of machine's hours of work
  - temperature of air exiting the outlet
  - setting changes with password
- 5 Switch 4 positions:
  - O**= STOP
  - V**= VENTILATION (FRESH AIR)
  - H**= HEATING
  - H+V**= HEATING WITH CONTINUOUS VENTILATION
- 6 Heat adjustment probe
- 7 Power cable



PESI E DIMENSIONI MACCHINA* WEIGHTS AND DIMENSIONS MACHINE*					IMBALLO PACKAGING			
MOD	A	B	C	Netto/Net	X	Y	H	Lordo/Gross
	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]	[kg]
SCUDO 235	2790	900	1766	856	2790	900	1766	856

\* Macchina completa con bruciatore e uscita 1 via  
Complete machine with burner and one way adapter

		SCUDO 235T* (OIL-GAS)
codice - code		02AG196 (V 400,3~.50 hZ)
potenza term. nominale - rated heat power	Hs [kW] Hs [kcal/h - BTU/h]	235,72 202.715 - 810.861
potenza term. resa - output heat power	Hs [kW] Hs [kcal/h - BTU/h]	227,47 195.620 - 782.480
rendimento - heat efficiency	[ % ]	96,50
portata d'aria - air flow	[ m³/h ]	20.000
pressione statica disp. - available static press	[ Pa- mm H <sub>2</sub> O ]	500 - 50
salto termico - temperature rise	a 20°C [ °C ]	47
campo di lavoro effettivo - effective heat range	[ m ]	70
consumo gasolio - oil consumption	[ kg/h ]	18,65
consumo metano - natural gas consumption G20	[ m³/h ]	22,035
pressione alim. - inlet pressure G20	[ mbar ]	20
consumo GPL - LPG consumption G31	[ m³/h - kg/h ]	8,637 - 16,92
pressione alim. - inlet pressure G31	[ mbar ]	37
alimentazione elettrica - electrical power	[ V - ph - Hz ]	400/(230 - 3 - 50)◆
potenza elettrica - power consumption	[ W ]	4850 (230V) - 4970 (400V)
∅ camino - ∅ flue	[ mm ]	200
∅ guaina uscita aria/L. max - ∅ outlet hose/L.max	[ mm/m ] 1 VIA	700 - 50
	[ mm/m ] 2 VIE	600 - 30
	[ mm/m ] 4 VIE	400 - 25
∅ guaina snorkel/L. max - ∅ outlet snorkel/L.max	[ mm/m ]	150 - 6
∅ guaina ripresa aria/L. max - ∅ inlet hose/L.max	[ mm/m ]	750 - 10

\* Macchina senza bruciatore ed uscita aria - Machine without burner and air adapter

◆Disponibile su richiesta - Available on demand

## PRODUCT SPECIFICATIONS IMA



IMA 200 RADIAL IMA 150 RADIAL IMA 111 RDD IMA 61 RADIAL



IMA 150 AXIAL IMA 111 AXIAL IMA 61 AXIAL

## TECHNICAL SPECIFICATIONS | DIMENSIONS AND WEIGHTS

1 kW = 860 kcal/h 1 kW = 3,413 Btu/h 1 kW = 3.6 MJ/h 1 kg = 1.2 l/h

MODEL IMA	61 AX	61 RAD	65 EC	111 AX	111 RDD	111 RHP	150 AX	150 RAD	150 RHP	200 RAD	200 RHP
Item number	41.722.800	41.722.300	41.722.850	41.724.800	41.724.710	41.724.210	41.726.800	41.726.650	41.726.000	41.728.650	41.728.010
Fuel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Heat output (Btu/hr)	222,000	222,000	222,000	375,000	375,000	375,000	512,000	512,000	512,000	682,000	682,000
Heat output (kW)	65	65	65	110	110	110	150	150	150	200	200
Fuel consumption max. (l/hr)	6.5	6.5	6.5	10.9	10.9	10.9	14.8	14.8	14.8	19.4	19.4
Efficiency (%)	92	92	92	92	92	92	92	92	92	92	92
Heated air flow (m³/hr)	4.000	4.000	4.400	5.800	8.000	10.000	7.400	9.000	11.000	10.000	13.000
Max. ventilator back pressure (Pa)	130	250	500	130	300	500	100	300	500	300	500
Power supply (V)	230	230	230	230	230	3x400	230	230	3x400	230	3x400
Power consumption (AMPS)	3.3	6.5	5.5	4.4	15	7.5	5.7	15	9	15	10
Outlet cone Ø (mm)	400	400	500	500	500	500	500	500	500	600	600
Flue connection Ø (mm)	180	180	180	200	200	200	200	200	200	200	200
Thermostat connection	*	*	*	*	*	*	*	*	*	*	*
Dim. heater only LxWxH (cm)	162x71x128	199x71x128	179x71x128	179x78x134	223x78x134	223x78x134	200x84x151	246x84x151	246x84x151	271x91x152	271x91x152
Dim. incl. packing LxWxH (cm)	203x75x145	203x75x145	203x75x145	180x80x145	241x98x172	241x98x172	210x95x172	265x95x172	265x95x172	300x104x172	300x104x172
Weight (kg)	210	245	235	295	350	340	324	385	385	450	450
Weight incl. packing (kg)	250	275	260	325	450	440	435	525	525	588	588

## ACCESSOIRES

MODEL IMA	61 AX	61 RAD	65 EC	111 AX	111RDD	111 RHP	150 AX	150 RAD	150 RHP	200 RAD	200 RHP	Item number
<b>FLUE STACKS</b>												
Galvanized pipe 1 m, Ø 180 mm	*	*	*									41.522.172
Galvanized pipe 1 m, Ø 200 mm				*	*	*	*	*	*	*	*	41.528.192
Galvanized rain cap, Ø 180 mm	*	*	*									41.522.175
Galvanized rain cap, Ø 200 mm				*	*	*	*	*	*	*	*	41.528.187
Galvanized bend 45°, Ø 180 mm	*	*	*									41.522.171
Galvanized bend 45°, Ø 200 mm				*	*	*	*	*	*	*	*	41.528.230
Bushing set for flue in polytunnels, Ø 180 mm	*	*	*									41.750.250
Bushing set for flue in polytunnels, Ø 200 mm				*	*	*	*	*	*	*	*	41.528.181
<b>THERMOSTATS</b>												
RT1, room thermostat -10/+40 °C with 5 m cable and plug, IP 54, switching differential ± 2 degrees.	*	*	*	*	*	*	*	*	*	*	*	40.228.405
RT2, as RT1, with 10 m cable IP 54.	*	*	*	*	*	*	*	*	*	*	*	40.228.410
RT3, as RT1, with 20 m cable IP 54.	*	*	*	*	*	*	*	*	*	*	*	40.228.420
IT1, duct thermostat 0/100 °C with 6 m cable and plug, switching differential ± 1.5%. For control of temperature in ducting system.	*	*	*	*	*	*	*	*	*	*	*	40.000.107
DA1, dual connection for thermostat. For control of 2 heaters on 1 thermostat.	*	*	*	*	*	*	*	*	*	*	*	41.729.220
Extension cable 10 m for thermostat, with plug.	*	*	*	*	*	*	*	*	*	*	*	40.202.140
Fault detector IMA GSM.	*	*	*	*	*	*	*	*	*	*	*	41.722.720
Fault detector GSM room temperature monitoring, no connections needed. Regardless of the type of heater.	*	*	*	*	*	*	*	*	*	*	*	40.223.400
<b>SWITCHING / ELECTRONICS</b>												
Transformer set for electrical connections without 0						*			*		*	41.728.190
Soft-starter set for gradual run-in of fan												41.728.203
Hour counter	*	*	*	*	*	*	*	*	*	*	*	41.728.235
Digital timer, burning and ventilating	*	*	*	*	*	*	*	*	*	*	*	41.728.302
VFD fan speed controller (only factory option)						*			*		*	41.724.930

## ACCESSOIRES IMA

MODEL IMA		61 AX	61 RAD	65 EC	111 AX	111 RDD	111 RHP	150 AX	150 RAD	150 RHP	200 RAD	200 RHP	ITEM NUMBER	
<b>DISTRIBUTION HEADS FOR IMA</b>														
To be fixed instead of standard outlet panel	Ø (mm)													
	2x300	*	*										41.722.068	
(ex works, if necessary), excluding clamps	4x300				*	*	*	*	*	*			41.724.177	
	2x360				*	*	*	*	*	*			41.724.192	
	4x300										*	*	41.728.177	
	2x400										*	*	41.728.443	
	2x500										*	*	41.728.068	
Air distributor	400	*	*	*	*	*	*	*	*	*			50.500.450	
Connection piece 300 to 400 mm for air distributor		To connect hoses 300 mm to the air distributor (400 mm)												
Connection piece 150 to 400 mm for air distributor		To connect hoses 150 mm to the air distributor (400 mm)												
<b>WARM AIR TRANSPORT HOSES</b>														
Temperature resistant -30/+100 °C yellow, L = 6 m	300	v	v		v	v	v	v	v	v	v	v	40.107.276	
	365				v	v	v	v	v	v			40.107.278	
	400	*	*		*	*	*	*	*	*		v	v	40.107.280
<i>v = distribution head instead of standard outlet cone</i>	500			*	*	*	*	*	*	*		v	v	40.107.282
On request warm air transport hoses temperature resistant -40/+80 °C and warm air transport hoses in other colours are available.														
<b>CONNECTION PIECE FOR HOSES WITH SLEEVE</b>														
To connect hoses, including 2 hose clips.	300												41.218.071	
	400												41.404.154	
<b>RUBBER QUICK RELEASE CLAMPS FOR HOSES</b>														
<b>WITH END RING</b>														
To connect hoses and if desired to fix to the heater flange.	300												40.502.067	
	365												40.502.068	
	400												40.502.069	
	500												40.502.071	
<b>GALVANIZED HOSE CLIPS</b>														
To fasten hoses to the heater flange or to a connection piece	60-600												41.522.196	
<b>RECIRCULATION FLANGES AND HOSES</b>														
Recirculation flange with bayonet connection for models from production year 2008 and up	300	*	*										41.722.140	
	400				*	*	*						41.724.445	
	500			*									41.722.854	
	500							*	*	*	*	*	41.728.445	
Recirculation set for models up to production year 2008	300	*											41.722.120	
	400				*	*	*						41.724.008	
	500							*	*	*	*	*	41.728.008	
	L (m)													
Recirculation hoses Ø 400 mm	5				*	*	*						41.729.223	
	10				*	*	*						41.729.224	
Recirculation hoses Ø 500 mm	5	*	*	*				*	*	*	*	*	41.729.228	
	10	*	*	*				*	*	*	*	*	41.729.246	
<b>HOSE CONNECTION BEND 45 DEGREES</b>														
To connect hoses to marquees.	Ø (mm)													
	300	v	v		v	v	v	v	v	v	v	v	41.000.300	
	400	*	*								*	*	41.000.400	
<i>v = distribution head instead of standard outlet cone</i>	500			*	*	*	*	*	*	*	v	v	41.000.500	
<b>FUEL ACCESSORIES</b>														
Oil supply unit DE 600, 60 litre to transport oil under pressure from bulk tank to one or more heaters, to maximum height of 30 m.		*	*	*	*	*	*	*	*	*	*	*	41.530.005	
Needed per heater: connection/reduction set with magnetic valve		*	*	*	*	*	*	*	*	*	*	*	41.522.213	
Oil preheating with cable (for SL 22)		*	*	*									41.527.212	
Oil preheating with cable (for SL 44/SL 55)					*	*	*	*	*	*	*	*	41.527.211	
Oil filter with water separation and bracket for return pipe		*	*	*	*	*	*	*	*	*	*	*	41.722.230	
Oil filter set with preheating		*	*	*	*	*	*	*	*	*	*	*	41.722.370	
Oil suction set universal		*	*	*	*	*	*	*	*	*	*	*	41.520.104	
<b>TRANSPORT AND STORAGE</b>														
Set of air wheels with axle parts		*	*	*	*	*	*	*	*	*	*	*	41.722.237	
Various transport frames		*	*	*	*	*	*	*	*	*	*	*	On request	



RT1, RT2, RT3



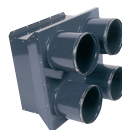
Flue stack with rain cap



Fault detector GSM



Fault detector GSM



Distribution head



Yellow hose + end ring



Connection piece



Rubber quick release clamp



# KwikHEAT MH60

Portable Indirect Fired Oil Heater



Small Footprint



Efficient



Oil Fired



Dual Voltage



Indirect Fired



## Description

The KwikHEAT MH60 provides large volumes of 100% fume free dry heated air. It is designed to be used in areas with limited ventilation. The MH60 can run on either a 110 or 230v single phase power supply.

## Typical applications

- Marquees
- Industrial buildings
- Process Heating
- Factories
- Loading bays
- Food Processing
- Warehousing
- Events & Exhibitions
- Storage Facilities
- Construction Sites

## Unit Specification

Nominal Heating Capacity	60kW
Airflow	3060m <sup>3</sup> / Hr
Noise Level	68dB(A) @ 3m
Outlet Duct Ø / Max Length	300mm / 30m
Inlet Air	Fresh air via louvre, optional air recirculation
Electrics	230V 1Ph 50Hz 16A or 110V 1Ph 50Hz 32A
Length / Width / Height / Weight	1560mm / 760mm / 1110mm / 220kg

Call us on **0800 999 6 365** or visit [www.watkinshire.co.uk](http://www.watkinshire.co.uk)

# FuelPAK 1000

Fuel Tank



## Description

The FuelPAK 1000 is truly PPG2 & PPG26 Compliant and UN certificated making it 100% legal for use on construction sites.

## Typical applications

- Marquees
- Factories
- Sports Halls
- Industrial buildings
- Large scale heating
- Events & Exhibitions
- Process heating
- Supermarkets
- Storage facilities

## Unit Specification

Tank Capacity	1000 litres
Monitoring Device	GSM Telemetry device
Lockable	Yes
Length / Width / Height	1150mm / 1150mm / 1330mm
Weight Empty	530kg
Weight Full	1394kg

## **Appendix B:**

- Lighting Plan and Schedule
- Manufacturers Details for Lighting Units





- NOTE CONTINUED**
11. Electrode to be installed in accordance with BS7671.
  12. For details on termination Type 8, and 11 refer to KCC Standard Detail KCC/SD/1400/010 and KCC/SD/1400/013 respectively.
  13. It is the responsibility of the contractor to ascertain the exact location of services in the vicinity of the works e.g. GPR scans, trials holes, cat and genny scan etc.
  14. Trial holes shall be carried out to confirm the locations for proposed street lighting equipment. Any change to equipment locations shown is subject to approval by the asset owner.
  15. Manufacturers label must be fitted indicating production date and batch number.
  16. All electrical works are to be in accordance with BS7671 Electrical regulation. Electrical regulations, safe isolation procedures are to be followed during the disconnection and removal of lighting. Contractor to provide necessary safe system of work, method statement and risk assessment.
  17. If there is any deviation from the approved drawings, the contractor shall obtain approval from KCC prior to carrying out any works.
  18. The lighting should be able to be dimmed any chosen area, for example, in the loading and power station area if required. The adaptive lighting and dimming schedule to be confirmed by DBC.
  19. All drawings should be colour printed.

- LEGEND**
- Dartford Orchard Theatre project boundary.
  - (A) Install new 6m root mounted lighting column to KCC coastal specification with new CU Phosco LED P863 128 P4 luminaire, having a maximum light output of 6.35klm, (optic setting: W5-325-43W), post top, 0 degree tilt. Column to be wet painted. Column and luminaire finished in black RAL 9005.Qty: No.8
  - (B) Install new 6m root mounted lighting column to KCC coastal specification with new CU Phosco LED P863 128 F2 luminaire, having a maximum light output of 14.53klm, (optic setting: W5-750-95W), post top, 0 degree tilt. Column to be wet painted. Column and luminaire finished in black RAL 9005.Qty: No.5
  - LC000 Lighting Column ID number (Indicative) Proposed.
  - PCNC New private cable network connection.
  - DNOT DNO cable network to transfer
  - CX/TX Proposed circuit number/termination type.
  - Install 100mmØ orange PVC Ducting with draw rope at 450mm depth. Refer to feeder pillar schematic for cable details within ducts.
  - FP Proposed Single-phase 100A feeder pillar. For further details refer to 140 schematic drawings (1000009506-4-1400-0001)
  - ☒ Install new 600mm x 600mm duct chamber and composite lid.
  - ⏏ Install electrode in accordance with BS7671. Refer to LCC Standard Detail SD/14/4H.
  - ⚠ Hazard Symbol
  - 5 Lux value contour lines
  - 10
  - 20
  - 30
  - 40
  - 50

- NOTES**
1. All dimensions are in meters unless otherwise specified.
  2. Background survey information supplied by others. See original survey plans for details.
  3. All proposed materials and lighting works to be installed in accordance with KCC standards, guidelines and specifications.
  4. This design shall be read in conjunction with KCC standard details and KCC/SD/1400 series drawings for guidance.
  5. For General Arrangement drawing refer to 1000009506-4-0100-0.
  6. The contractor shall investigate locations for all proposed lighting columns and other equipment to determine site conditions.
  7. All isolators are to be from the Charles Endirect L510 range L5102 or above as per KCC Appendix A document.
  8. It is the contractor's responsibility to verify locations and depths of all services before excavating by hand-dug trial pits, radar survey or other approved means.
  9. For electric design and cable details refer to proposed lighting schematic 1000009506-4-0140-0001.
  10. The asset numbering shown on the drawings is for design purpose only. The contractor shall liaise with KCC to install correct asset numbers.

Rev	Date	Description	Drn	Chk	App	
0	21.11.2023	ORIGINAL ISSUE		AS	US	TW

This drawing has been specifically prepared to meet the requirements of the named client and may contain design and innovative features which differ from conventional design standards.



Client	DARTFORD BOROUGH COUNCIL					
Project	DARTFORD ORCHARD THEATRE					
Drawing Title	PROPOSED LIGHTING LAYOUT SHEET 1 OF 1					
Drawing Status	FOR APPROVAL					
Drawn	Designed	Date	Scale	Size		
AS	US	21-11-2023	1:200	A1		
Drawing No.	1000009506-4-1300-0001				Rev	0

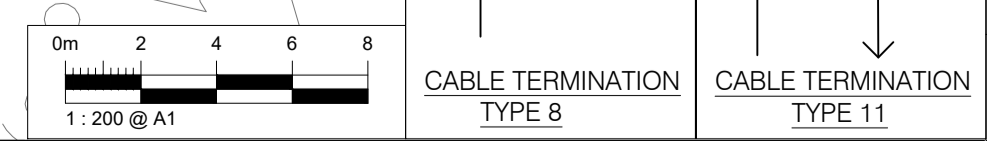
**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**  
 In addition to the hazards/risks normally associated with the type of work detailed on this drawing, note the following significant risks and information identified by the designer

**▲ CONSTRUCTION**  
 C01 Close to underground drainage pipe lines.  
 C02 Close to temporary building structure.  
 C03 Close to the electric sub station.  
 C04 Column close to entrance door.

**▲ DEMOLITION**  
 ---

**▲ MAINTENANCE & OPERATION**  
 ---

It is assumed that all works are carried out by a competent contractor working, where appropriate, to an approved method statement.





Lighting Asset Schedule

Item No	Proposed Asset I.D	X - Co-ordinate	Y - Co-ordinate	Area	Setback	Mounting (m)	Luminaire	Luminaire and Column Colour	Optic Setting	Colour Temperature	LED's	Wattage (w)	Flux (lm)	Driver (mA)	Supply Type	Termination Type	Proposed Foundation	Bracket Project	Column/Bracket Suppliers drawings	Drawing sheet number
1	PRLC01	554114.611	174136.000	Orchard Theatre Area	Front of the fence, 1m offset	6	P863	RAL9005	F2	4000K	128	95	14.53	750	PCN	T11	Planted	Post top	KCC Costal Specifications	1000009506-4-1300-0001
2	PRLC02	554100.563	174134.730	Orchard Theatre Area	Front of the fence, 1m offset	6	P863	RAL9005	F2	4000K	128	95	14.53	750	PCN	T11	Planted	Post top	KCC Costal Specifications	1000009506-4-1300-0001
3	PRLC03	554091.8741	174146.1408	Orchard Theatre Area	Front of the building, 0.5m offset	6	P863	RAL9005	F2	4000K	128	95	14.53	750	PCN	T11	Planted	Post top	KCC Costal Specifications	1000009506-4-1300-0001
4	PRLC04	554094.9903	174161.1105	Orchard Theatre Area	Front of the building, 0.5m offset	6	P863	RAL9005	F2	4000K	128	95	14.53	750	PCN	T8	Planted	Post top	KCC Costal Specifications	1000009506-4-1300-0001
5	PRLC05	554117.3785	174153.5377	Orchard Theatre Area	Front of the fence, 0.5m offset	6	P863	RAL9005	F2	4000K	128	95	14.53	750	PCN	T11	Planted	Post top	KCC Costal Specifications	1000009506-4-1300-0001
6	PRLC06	554115.2974	174173.8692	Orchard Theatre Area	Front of the fence, 0.5m offset	6	P863	RAL9005	P4	4000K	128	43	6.35	325	PCN	T11	Planted	Post top	KCC Costal Specifications	1000009506-4-1300-0001
7	PRLC07	554101.4986	174183.2314	Orchard Theatre Area	Front of the building, 0.5m offset	6	P863	RAL9005	P4	4000K	128	43	6.35	325	PCN	T11	Planted	Post top	KCC Costal Specifications	1000009506-4-1300-0001
8	PRLC08	554116.1324	174200.9082	Orchard Theatre Area	Front of the fence, 0.5m offset	6	P863	RAL9005	P4	4000K	128	43	6.35	325	PCN	T8	Planted	Post top	KCC Costal Specifications	1000009506-4-1300-0001
9	PRLC09	554094.3344	174219.9082	Orchard Theatre Area	At the back of the footway	6	P863	RAL9005	P4	4000K	128	43	6.35	325	PCN	T11	Planted	Post top	KCC Costal Specifications	1000009506-4-1300-0001
10	PRLC10	554076.9226	174211.684	Orchard Theatre Area	Front of the fence, 0.5m offset	6	P863	RAL9005	P4	4000K	128	43	6.35	325	PCN	T11	Planted	Post top	KCC Costal Specifications	1000009506-4-1300-0001
11	PRLC11	554071.364	174191.0296	Orchard Theatre Area	Front of the fence, 0.5m offset	6	P863	RAL9005	P4	4000K	128	43	6.35	325	PCN	T11	Planted	Post top	KCC Costal Specifications	1000009506-4-1300-0001
12	PRLC12	554066.2177	174169.3236	Orchard Theatre Area	Front of the fence, 0.5m offset	6	P863	RAL9005	P4	4000K	128	43	6.35	325	PCN	T11	Planted	Post top	KCC Costal Specifications	1000009506-4-1300-0001
13	PRLC13	554060.3084	174146.5445	Orchard Theatre Area	Front of the fence, 0.5m offset	6	P863	RAL9005	P4	4000K	128	43	6.35	325	PCN	T8	Planted	Post top	KCC Costal Specifications	1000009506-4-1300-0001

**NOTES:**

The contractor shall check all material specifications, to ensure they are suitable for the works, prior to ordering. It is the contractors responsibility to ensure that all materials and components required for these works (but are not shown on these drawings) are considered and correct specifications ordered accordingly.

Any quantities shown on this drawing are taken from CAD and are for guidance only. The contractor must check and confirm all quantities prior to ordering.

The proposed asset numbering shown is for drawing purposes only. The contractor shall confirm actual proposed numbering with the assets owner KCC.


0	21.11.2023	ORIGINAL ISSUE		AS	US	TW
Rev	Date	Description		Drn	Chk	App

This drawing has been specifically prepared to meet the requirements of the named client and may contain design and innovative features which differ from conventional design standards.



Client  
 Project  
 DARTFORD ORCHARD THEATRE

Drawing Title  
 PROPOSED LIGHTING SCHEDULE  
 SHEET 1 OF 1

Drawing Status  
**FOR APPROVAL**

Drawn	Designed	Date	Scale	Size
AS	US	21-11-2023	NTS	A1
Drawing No. 1000009506-4-1300-0002				Rev 0





The **KING**  
of the  
**ROAD**



These luminaires comply with ETL guidelines for White Light Emitting Diode Lighting Units and is eligible for the Enhanced Capital Allowance (ECA) scheme.

**INTRO**

Whatever your requirement for lighting major road infrastructures or small residential streets our King of the Road range of Luminaires will maximise your energy efficiency. The range of luminaires has a lumen output ranging from 78,050 lm down to 3,680 lm with multiple optical distributions to meet any lighting class.

Contractor-friendly installation and ease of maintenance with minimal total cost of ownership makes this range of luminaires perfectly suited for ease of project delivery.



	P860 - 672	P861 - 448	P862 - 256	P863 - 128
MAX. LUMINOUS FLUX	24,100 ~ 78,050lm	15,900 ~ 52,310lm	8,050 ~ 31,075lm	3,680~ 16,750lm
MAX. LUMINAIRE EFFICACY	163 lm/W	162 lm/W	159 lm/W	159 lm/W
LUMEN MAINTENANCE *Full power, Ta = 25°C	L86 @ 100,000 hrs	L86 @ 100,000 hrs	L90 @ 100,000 hrs	L90 @ 100,000 hrs

\*Lumen depreciation calculated up to 100,000 hours using IES TM-21 method.

**KEY BENEFITS**

- Slim and elegant aesthetics
- Future-proof and upgradable on site
- Max. luminaire efficacy - 163 lm/W
- Wide range of optics and lumen packages
- Advanced thermal management
- Maximised savings on energy and maintenance costs
- Contractor-friendly installation and maintenance
- Minimal total cost of ownership
- Up to ME1 lighting class applications
- Dark sky friendly and no upward light
- Flexible and intelligent lighting control options
- Low windage and lightweight
- IP66 ingress protection
- 100% recyclable

**IMPROVED SERVICEABILITY**



- Tool-less access
- Easy, fast wiring and installation
- Contractor-friendly maintenance
- Quick replacement for LED and Driver compartment
- Automatic electrical isolation when opened
- Easy electrical testing without altering wiring

**FLEXIBLE MOUNTING OPTIONS**

Universal SE/PT spigot caps to suit 34-42mm, 42-60mm and 60-76mm nominal diameter spigots providing -10°, -5°, 0°, +5° and +10° tilt in both post top and side entry arrangements with permanent indication on the luminaire.

**Ø 60 - 76MM X 76MM POST-TOP**



**Ø 34 - 42MM X 100MM SIDE-ENTRY / POST-TOP**

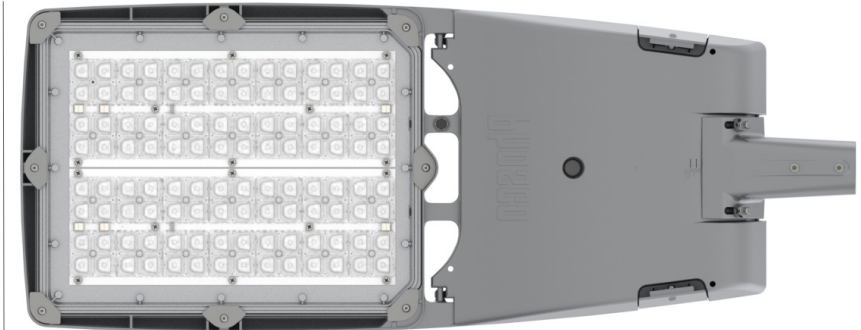


**Ø 42 - 60MM X 100MM SIDE-ENTRY / POST-TOP**



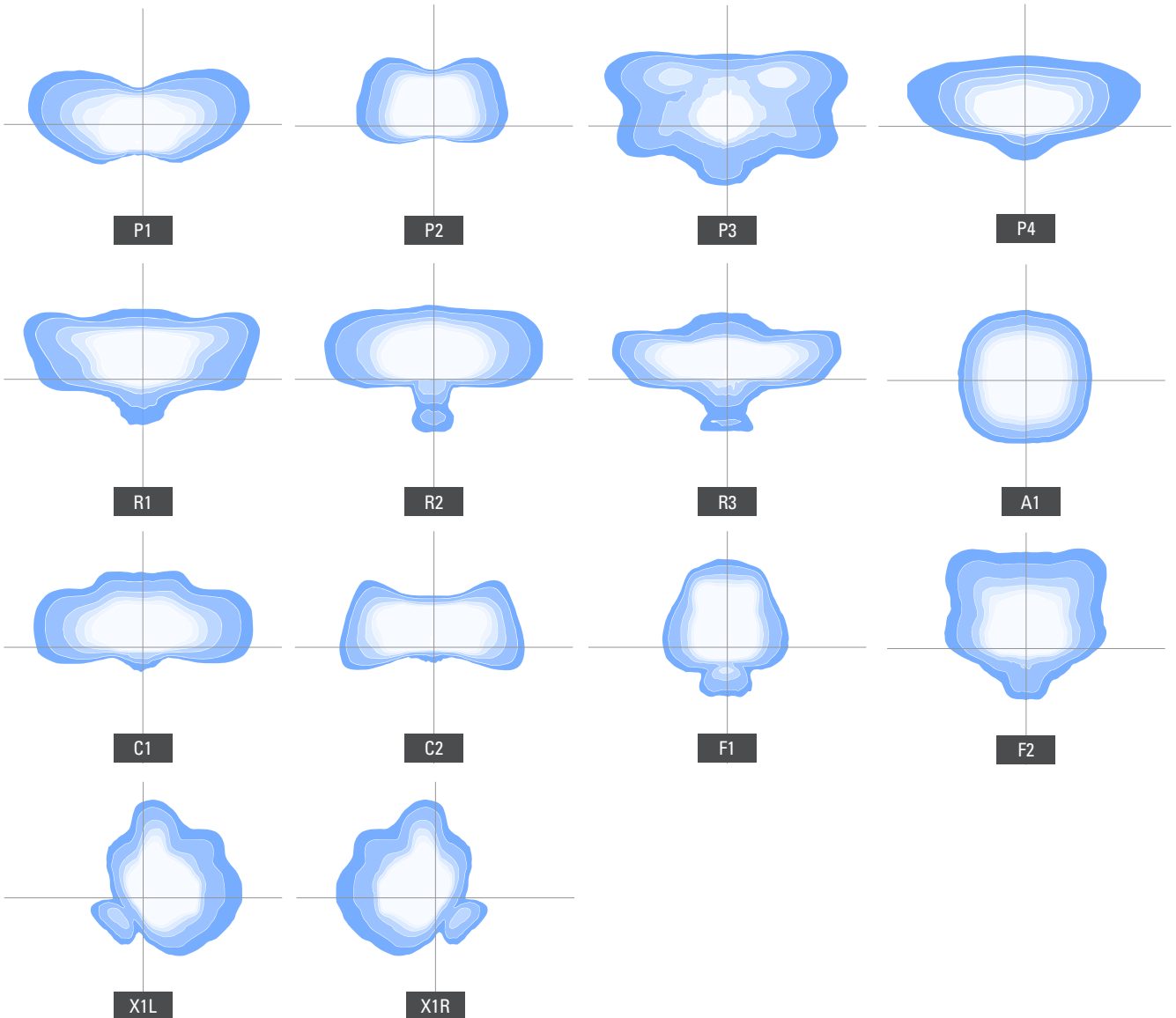
**EXCEPTIONAL OPTICAL PERFORMANCE**

Standard Neutral White LEDs ( CCT = 4000K )  
Optional Warm White LEDs ( CCT = 3000K )  
Colour Rendering Index > 70  
Improved mesopic vision  
High quality PMMA lenses  
Exceptional uniformity  
Dark sky-friendly ( zero upward light )  
Minimal glare ( up to G6 )

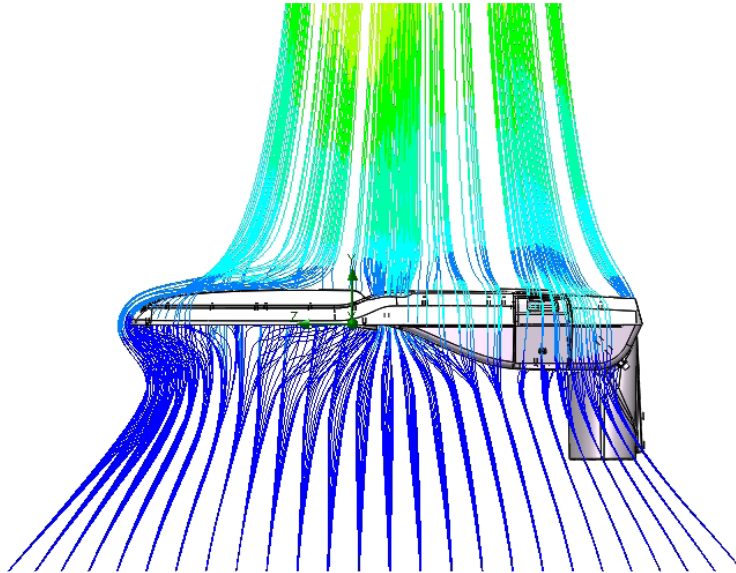


**OPTICAL DISTRIBUTIONS**

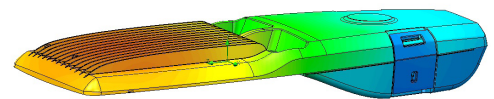
The P860, P861, P862 and P863 all offer a wide choice of optics and lumen packages. High efficacy optics with up to 25 distributions (14 shown below) allows most challenging schemes to be effectively lit with maximum energy efficiency. Specialised optics are provided for amenity, pedestrian crossings (X1 and X2) and floodlighting as well as the usual residential, main road and conflict area distributions.



**ADVANCED THERMAL MANAGEMENT**



AIR FLOW VELOCITY & LUMINAIRE TEMPERATURE DIAGRAMS DEPICT P862



LUMINAIRE TEMPERATURE RESULTS FROM CFD

This King of the Road family of Luminaires uses widely spaced LED chips, combined with large surface cooling area as well as longitudinal fins to avoid any centralised heating problem which occurs in typical modular LED luminaire designs, thus maintaining all LEDs at an even low temperature.

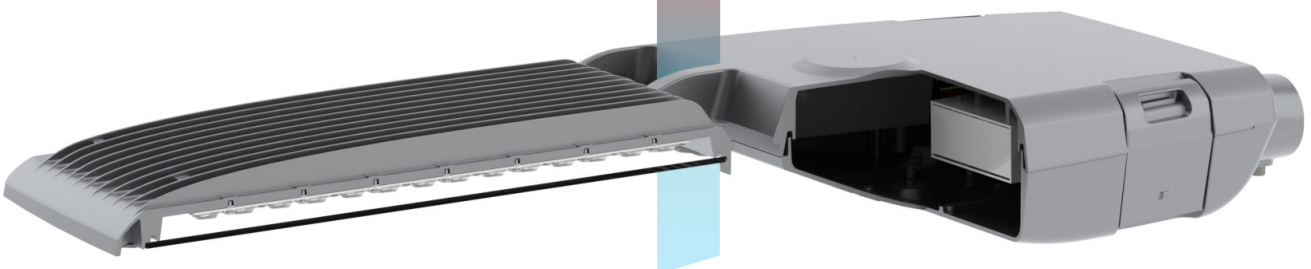
The complete separation of the driver compartment from LEDs keeps the drivers very cool, significantly increasing the luminaire operating life in high ambient operating temperatures.

**AIR VOID**

- Both gear and optical compartments are separated in order to optimise thermal management

**PROGRAMMABLE DRIVER**

- Module Temperature Protection (MTP)
- Single level or multi-level dimming
- Adjustable Output Current (AOC)
- Constant Light Output (CLO)
- DALI dimmable
- Integrated surge protection
- Driver thermal protection



**FLAT GLASS**

- Vandal resistant toughened glass
- Increased light transmission
- Dark sky friendly
- Suitable for harsh environment
- Easy cleaning externally

**LEDs**

- Superior light output
- High efficacy
- Proven reliability
- Tight CCT control

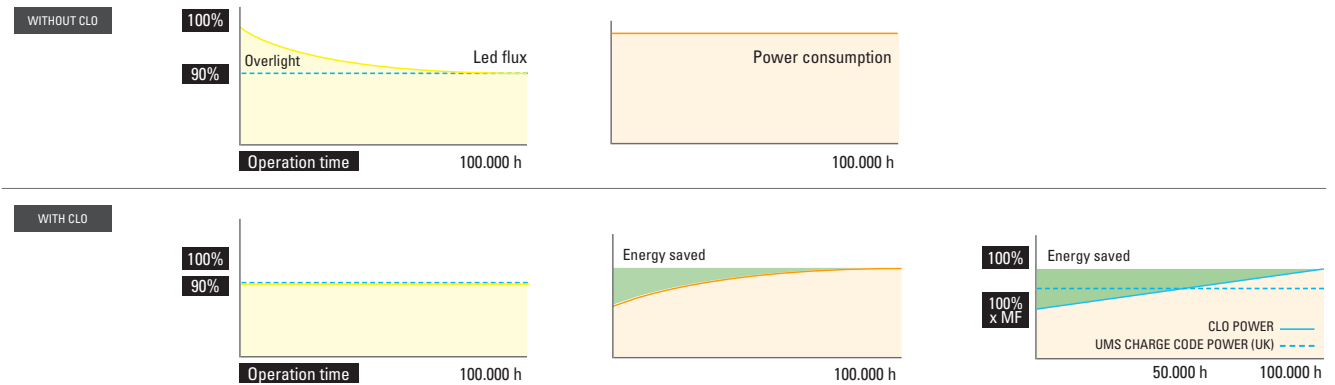


**CONSTANT LIGHT OUTPUT (CLO)**

All light sources experience lumen depreciation - a reduction in light output over time, which means the system would consume more power than necessary to meet the required light levels at the end of the lamp's useful life (e.g. L90).

The drivers of the P860, P861, P862 and P863 can be programmed to ensure that the LEDs will always deliver the necessary light level, by increasing the operating current over time to compensate for the LED lumen depreciation.

Over-lighting at the beginning is taken away and this feature can produce extra energy saving and extend the lifetime of the system.



**PROGRAMMABLE LIGHTING CONTROLS**

The programmable driver enables CU Phosco Lighting to adjust the light level to match a specific application with optimised energy savings. The various control options offer different levels of energy savings, from simple stand-alone controls to more advanced networked Central Management Systems (CMS).

The range is currently compatible with the following CMS:

- Mayflower
- Philips Starsense
- Telensa PLANet
- Zodion Vizion
- Ask Controls RMS
- Telematics
- CityTouch
- CELtek

CONTROL SYSTEM	BENEFITS	FUNCTIONALITY	RELATIVE SAVING	WITH CLO
Photocell	Standard control	Switch on/off with ambient light level	0%	up to 10%
Multi-step dimming	Substantial energy saving	Programmable dimming (up to 5 steps)	up to 20%	up to 30%
Wireless CMS	Full control and monitoring of each individual luminaire	DALI and 1-10V dimming inputs with full CMS functionality	up to 40%	up to 50%

**TOTAL COST OF OWNERSHIP**

While HID technology has a low initial cost, it requires frequent maintenance, resulting in a high total cost of ownership.

The P860, P861, P862 and P863 with dimming and CLO options deliver an attractive total cost of ownership package making it extremely competitive for invest-to-save schemes.

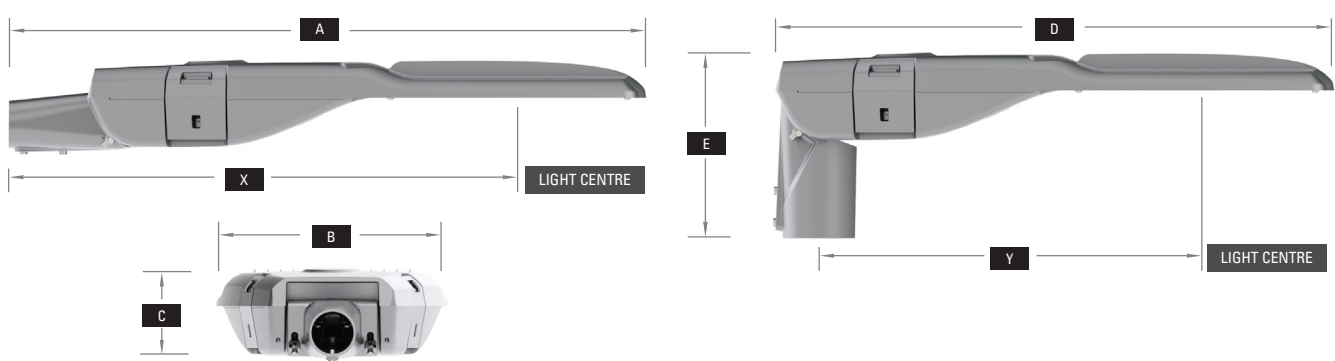


\* Based on S and P class example above, standard control, 20 years lifetime

	P860	P861	P862	P863
Number of LEDs	672	448	256	128
Power consumption	150 - 473W	100 - 342W	52 - 194W	28 - 110W
Driver current ( 25mA steps )	300mA - 1050mA	300mA - 1050mA	200mA - 800mA	200mA - 850mA
Lumen maintenance	L90 > 100,000 hours ( 850mA, Ta = 25°C ) L86 > 100,000 hours ( 1050mA, Ta = 25°C )	L86 > 100,000 hours (1050mA, Ta = 25°C )	L90 > 100,000 hours (800mA, Ta = 25 5°C)	L90 > 100,000 hours (850mA, Ta = 25°C )

Operating Temperature	-40°C to +50°C
Raised Ambient Temperature	+50°C (with limit on maximum mA)
Correlated colour temperature ( CCT )	4000K ( 3000K option)
Colour rendering index ( CRI )	>70
Glare rating	up to G6
Optical cover	Flat glass - Tested to IK09
Electrical class	Class I - All types Class II - All except P860
Surge protection	10 kV Common Mode, 6 kV Differential Mode to IEC 61000-4-5
Dimming	multi-step dimming
Control system input	DALI or Step-dimming
Lighting regulation	Mini Photocell • 7-pin ANSI Socket • Zhaga Book 18 socket • Bluetooth Control Node • Central Management Systems
CMS	Compatible with CMS systems
Installation	SE Ø 34-42mm or Ø 42-60mm PT Ø 42-60mm or Ø 60-76mm
Post top / Side entry tilt	-10°, -5°, 0°, 5°, 10°
Material ( body )	High pressure die cast aluminium
Finish	Polyester powder coat cured under heat
Colour	Light grey ( RAL 7035 ), other RAL colours available on request
Ingress protection	IP66

	Dimension (mm)								CxS(m <sup>2</sup> )	H	Kg max
	A	B	C	D	E	X	Y				
P860	1060	470	110	960	235	790	630	0.054	8 - 20m	19.5	
P861	935	370	110	835	238	700	543	0.042	8 - 17m	14.5	
P862	810	296	110	710	235	628	470	0.042	5 - 8m	9.7	
P863	740	240	110	640	235	600	445	0.039	4 - 6m	8.2	



# The KING of the ROAD



Crown  
Commercial  
Service  
Supplier



Charles House  
Gt. Amwell, Ware  
UK, SG12 9TA  
01920 860600

enquiries@cuphosco.co.uk  
www.cuphosco.co.uk  
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