Lights, Reflectors, Glazing, Noseweights
Required On a Centre-Axle Trailer Class O1 in UK.

WARNING

This document is provided free, by PhieldBug.co.uk, without any warranty whatsoever, in the hope that it may be useful. This document attempts to summarise some parts of the law relating to trailers. Most data are taken from "IVA O1-O4 Inspection Manual" 29/10/2014 downloaded June 2017.

This document is not guaranteed to be error-free nor is it guaranteed to be a complete and correct interpretation of the regulations. It is your responsibility to determine the current regulations that apply to trailer construction and use, and it is your responsibility to comply with those regulations.

Your completed trailer may require an IVA inspection before it can be used on the road.

NOTES

Dimensions are in mm unless notated otherwise.

Assumes trailer is O1 classification and is <2100 wide and <6000 long, and under 750kg. Trailers wider, longer, or heavier will have additional requirements. Width is the widest part including wheel hubs, tyre walls, mudguards, as well as the pod and its fittings. Awnings are measured in the stowed position and doors measured in the closed position.

Assumes date of manufacture is after 15/7/2007.

Heights are measured when the trailer is level.

Distances to lights/reflectors are to the edge of the reflector nearest to the reference. The outside edge of the trailer is taken to be at the widest point. (Example: the outer edge of the mudguards.)

All lights/reflectors must be E-marked. (OK… this isn't strictly true. Only the fog light needs to be E-marked on an O1 trailer. But E-marking is the only realistic way to tell that the lights meet the Construction and Use Regulations so an IVA inspector - or DVSA roadside inspector - is unlikely to allow non-E-marked fittings.)

All lights/reflectors must be oriented as marked (e.g. by the word "TOP"). Triangle reflectors must be oriented point-upwards.

There are specific angular limitations (upwards, downwards, toward the outside and toward the inside) through which lights and reflectors must be visible. This document does not cover those requirements because generally, if the lights/reflectors are mounted vertically as designed and are on the rearmost/frontmost part of the trailer (or are in a clear area on the side of the trailer for side reflectors) then they will meet the requirements. See the IVA O1-O4 Inspection Manual for further details if in any doubt. Take special note that front reflectors and rear lights/reflectors mounted on the mudguards are unlikely to be sufficiently visible on their inward angle, and in any case may be too far from the end of the trailer to be legal.

Conspicuity markings, such as reflective red tape around the outline of the trailer or diagonal-striped retro-reflective plates, are forbidden on this class of trailer. Yes, “forbidden”. Not “optional”.

The reference to caravans as 'Special Purpose Vehicles' in the IVA O1-O4 Inspection Manual does not permit any variation from the lighting requirements for teardrops. Almost all teardrops are simply trailers, not caravans.

All fitted lights must be functional. Incorrect fitment example: a non-functional light fitted on the nearside to symmetrically/decoratively match a single offside fog light.

Even if the towing vehicle does not legally require a given light and cannot supply the necessary power to the trailer’s light, the trailer must nevertheless still be fitted with that light. Incorrect fitment example: omitting a foglight from a trailer which is to be towed by a pre-1980 car.

Where multiple optional fittings are permitted, at least one fitting must meet all the requirements of the IVA O1-O4 Inspection Manual. The optional additional fittings are permitted to only partially meet the requirements. Incorrect fitment example: a white reflector on the front of the mudguard and a second white reflector on the front edge of the bodywork: together, the two reflectors meet the requirements, but neither one meets the requirements on its own: the mudguard-mounted reflector is not visible through sufficient arc and the body-mounted reflector is too far from the outside edge of the trailer.

Where optional fittings are installed, they must be maintained in working order. Incorrect fitment example: optional sidelights fitted on the mudguards, but not illuminated due to damage or lack of maintenance.

Implicit in the rules is the requirement that light/reflectors intended for specific fitment positions should not be fitted elsewhere on the trailer. Incorrect fitment examples: red reflector showing to the front or white light showing to the rear or fog lamp used as a stop-light.

SIDE

Amber reflector (non-triangle). Qty 1+ each side. At least one no more than 3m from the ballhitch. At least one in the middle 1/3rd of the trailer. At least one no more than 1m from the rear. Max 3m between any adjacent two. Rearmost is permitted to be red. Height 250-1500.
Example: A round red reflector on the side of the trailer close to, and at the same height as, the rear lights. Plus a round amber reflector mounted at the same height just behind the door.

FRONT

White reflectors (non-triangle). Qty 2+. Max 150 from side. Height 250-900. Visible 10degrees inwards and 30degrees outwards. Example: On stalks to either side of the front of the trailer body.

Incorrect fitment example: see “Where multiple optional fittings are permitted…”, above.

Additional front reflectors. Optional. Example: A pair of white round reflectors on the front of the mudguards.

Front position white lights. See (*) below.

REAR

Red rear lights. Qty 2. Max 400 from side. Height 350-1500.
Red stop lights. Qty 2. Height 350-1500. At least 600** apart. A 3rd “high level” stoplight can optionally be fitted. Must be on the centreline. Must be no lower than the other stop lamps.
Amber direction lights. Qty 2. Max 400 from side. Height 350-1500. At least 600** apart.
Rear and stop lights can be combined. There is no minimum distance between rear lights and direction lights.
Example: A 'hamburger' light cluster mounted on the rear face of the trailer close to each side.

Red triangle reflectors. Qty2. Dimensions: 150-200 along each side of the triangle. Max 400 from side. Height 250-900. At least 600** apart. Visible 30degrees left and right.
Example: A pair fitted just inside of the rear light clusters.

Additional rear reflectors. Optional.
Example: A pair of red round reflectors on the rear of the mudguards.

Red fog lamp. Qty 1/2**. At least 100 away from stop lamp. If qty1: on centreline or toward offside. If qty2: matched pair. Height 250-1000.
Example: To the left of the RHS red triangle reflector.

White reversing lamp. Optional. Qty 1/2. Height 250-1200.
Example: None fitted.

Number-plate space. Mandatory. 520x120 or 340x240. Vertical. Must be rigidly mounted.
Example: clips to hold a standard plate, fitted directly to the rear of the bodywork, centrally.
Height: not specified in IVA O1-O4 Inspection Manual. But be sensible.

Number-plate illumination. Mandatory. "Positioned sufficient to illuminate the rear registration plate". Not stated, but implicit: direct white light from the illuminators should not be visible rearwards. Example: Two wide-angle illuminators above the plate.

*IF THE TRAILER IS OVER 1600 WIDE

If the trailer is over 1600 wide, front position lamps are also required. White. Max 150 from the side. 350-2100 from the ground. Visible at least 5-degrees inwards (which means siting on the mudguards *may* just be an option).

**IF THE TRAILER IS UNDER 1300 WIDE

If the trailer is narrower than 1300 then:

- No fog light is required.
- Red rear triangle reflectors need be only 400 apart.
- Stop lights need be only 400 apart.
- Indicator lights need be only 400 apart.

GLAZING

Must be of a type that does not shatter into fragments likely to cause severe cuts. Glazing must be E-marked, even if it can be covered by shutters. Example: hard-coated clear polycarbonate E-marked by a certified supplier.

EXTERNAL CABLES

Must be secured at max 300 intervals.

WEIGHTS

IVA glossary of terms also includes a hidden noseweight requirement: "Centre Axle Trailer: A trailer having only a single axle... so that, when the trailer is uniformly loaded, the [nose weight] does not exceed 10% of the maximum authorised weight for the axle". Or put it another way: the axle must be positioned so that the noseweight is no more than 10% of the gross weight of the trailer. Incorrect example: a teardrop with the axle fashionably far rearwards, so that a large proportion of the weight of the trailer bears down on the car's tow-hitch instead of on the trailer's wheels.

BRAKES

If a trailer is equipped with brakes then the brakes must be functional, even if the trailer is below the mass at which brakes are mandatory. Incorrect fitment example: a second-hand trailer-base with the brakes removed, but some brake components (e.g. the hub drums) still fitted.

SECONDARY COUPLING

An unbraked O1 trailer requires a secondary coupling. Typically a chain or cable which will continue to hold the nose of the trailer to the tow-car in event of the hitch failing. A braked O1 trailer can optionally have a secondary coupling, or a breakaway cable which applies the brakes.

HITCH HEIGHT

When the trailer is level (which means when the floor is level, unless some other 'level' line is permanently marked on the trailer) the centre of the ballhitch must be 385mm to 455mm from the ground. Curiously, the requirement doesn't state how laden the trailer should be for this measurement.