



2.5-5kW Dual Wattage Luminaire

DUAL WATTAGE

Dual filament lamps are produced so that either filament can be used independently or, by addition, different power combinations are achieved, i.e. 1.25kW and 2.5kW filaments when combined give 3.75kW and spread of light is 3:1.

There can be advantages in rigging by using dual wattage luminaires as it allows the same luminaire to be used as a standard throughout the studio rig. Also where marginal lighting levels are reached the lighting director can easily make the necessary changes. One drawback of dual wattage luminaires is that their physical size is dictated by the ventilation requirements of the highest wattage used.

The chart shows the usable range of light output for the various wattage combinations in use at the present time. It is assumed that the dimmer has been set to '7' so that plus or minus one stop is available.

Although the optical system of dual spots tends to be a compromise for the two filaments, in practice that has not proved to be noticeable. Softlights can sometimes have differing characteristics dependent upon switch modes but most modern luminaires have overcome this problem.

Two points in favour of the dual wattage are:

- i) with one luminaire in use maintenance spares are kept to a minimum.
- ii) lighting mode changes can easily be accommodated without re-rigging which saves valuable studio time.

CONSTRUCTION AND HANDLING

With modern lighting the number of luminaires in use imposes a considerable load upon the supporting structure. It is therefore essential to keep the weight to a minimum, and this is also desirable when handling luminaires. It can be shown that maintenance and damage increases with the weight of the luminaire, imposing a strain on the operating staff. Ideally, luminaires should be within the handling capability of one or two men. A 5kW spot weighing 17kg can be handled by one man, but when this weight is exceeded, two men are required.

Luminaires have been substantially reduced in weight in recent years without affecting durability or performance. With the increased requirements for lighter luminaires have come associated problems, other than the robustness of the luminaire, as their compact size demands an efficient ventilation system to ensure adequate convection cooling of the lamp. To aid rigging and handling of luminaires, pole operation is usually employed in the studios. Functions such as pan, tilt, spot/flood and barn door adjustments can be made from the studio floor with a specially made operating pole to avoid using step ladders to manually make these adjustments.

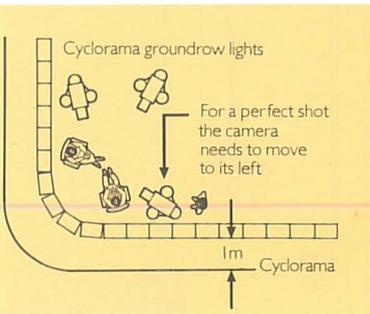
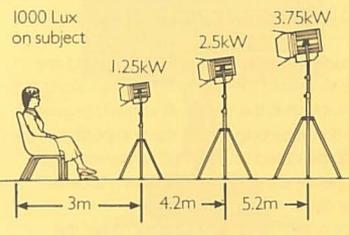
CYCLORAMA LIGHTS

Why are cycloramas so important? They offer, after the initial cost, an inexpensive and reliable method of providing a multiplicity of backings which would be costly and more inhibiting with conventional 'flats'.

Four compartment groundrow units are usually placed 1m from the cyc spaced at 1.22m centres and four compartment top units are placed 3m from the cyc spaced at 2.5m centres. Generally the floor units will use 625W lamps and top units 1250W lamps

To light from the cyc bottom in four colours approximately 2000W per metre is required. A small studio, e.g., 100m², with cyc on three sides, i.e., 25m of cyc, would require 50kW; if only two colours are used, then the figure of approximately 25kW is still quite substantial. Top cyc lighting at the quoted distance will also require 2000W per metre for four colours.

In the case of studios up to 200m² bottom cyc lighting poses a problem with regard to floor space. To have a studio with cycs on three sides with units placed 1m away from the cloth in a 100m² studio means 35% of floor area is lost. This loss can give problems with camera shots (see illustration) and it should be borne in mind when planning small studios. Having made this point, it must always be remembered that the lighting director needs the artists at least 1m away from the cyc, so that backlights can be used effectively. For these reasons top cyc lighting is preferred in studios up to 200m².



Multicolour cyc lighting on a grand scale is more often used with large open space sets such as light entertainment and music productions. In this type of production the cyc top lighting often predominates. With other types of production, such as drama, the requirement for cyc lighting is very much reduced and the need is usually to light backings to windows and the studio exteriors. Owing to the increased complexity of lighting of artists and sets in drama type productions groundrow cyc lighting is used, thus saving valuable grid space.

PROFILE AND FOLLOW SPOTS

The fresnel spot, although a focusing source, produces a beam with a soft edge. Whether by accident or design, this feature is essential to good overall lighting, allowing one source to merge with another, without apparent changes. There is also a requirement for luminaires with a hard edged beam for effects purposes.

In the studio, there are occasions when certain effects have to be simulated e.g., sunlit window pattern projected on a wall; either a full sized window is used with a fresnel spot, or the profile spot can be employed. The profile spot can be likened to the normal photographic projector with a similar optical system for the projected hard edged images. In the case of the window quoted in the example, a simple cut out shape of the window is made, usually from metal foil, placed in the gate (which is too hot for plastic materials) and projected by the correct angle optics to the surface where the effect is required. Thus a very good effect can be obtained without the need to occupy valuable studio space. One point to be borne in mind is that the projector has to have good wide angle optics at close range rather than narrow angle optics at a longer distance. If not, any movement however slight, will be magnified. This highlights one of the drawbacks of profile spots. They must be stationary to be effective – it is most disturbing to see projected patterns wandering.

The window cutout mentioned is a dramatic use of the profile spot. It should, however be obvious to the reader, that any shape can be used and projected to give visual interest to the television picture. Although focused shapes have been discussed, very good effects can be achieved by partial defocusing of the image.

The follow spot can be regarded as the 'elder brother' of the profile spot, but in this case a pattern is not projected. The follow spot has very narrow angle optics which allow it to be used over long distances as the following key light on the main artist.

Both the profile and follow spots are usually supplied with integral framing shutters to give straight edges to the beam and an iris to vary the circular size of the beam. They will also accept colour frames on the front of the optics to allow the use of colouring material or in some cases colour correction filters.



2kW Profile Spot



1kW CSI/ICD Followspot