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Pulsed Discharge Lamp Projection grows in popularity throughout the world!

Economy, ease of operation and flicker-free projection have made the Philips SPP 800 Pulsed Discharge Lamp prove its worth to exhibitors during the last few years.

Application of this lamp has been limited only by the luminous flux obtained. For a Philips FP 20 S Projector with the SPP 800 pulsed discharge lamp, a luminous flux of 5000 lumen is achieved, limiting its application to small and medium cinemas. An increase in luminous flux as well as a simplification of the power supply and an improvement in colour reproduction remained to be achieved, before new and larger fields of application could be opened up.

NEW ADVANCES
IN
CINEMA PROJECTION

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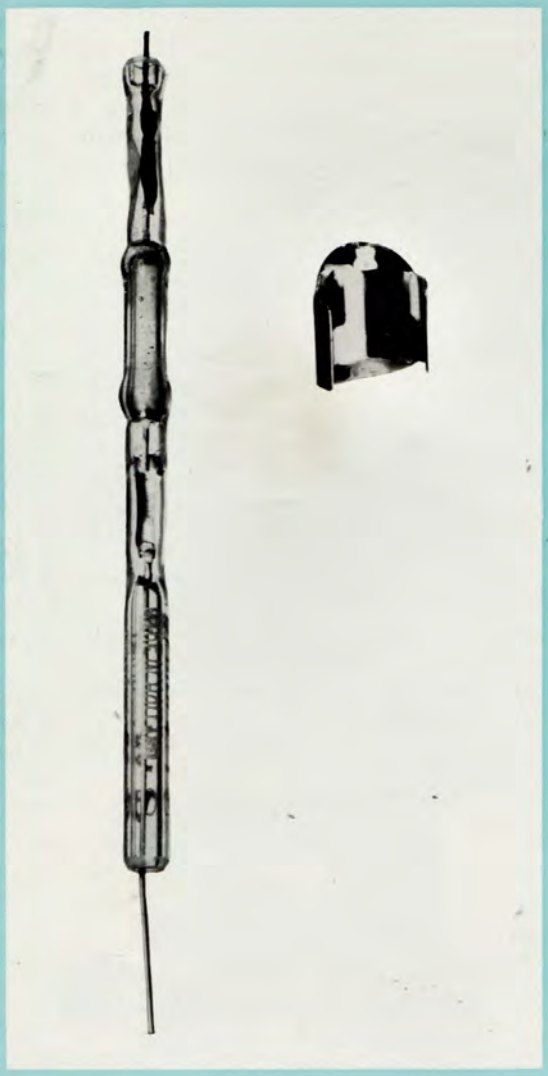

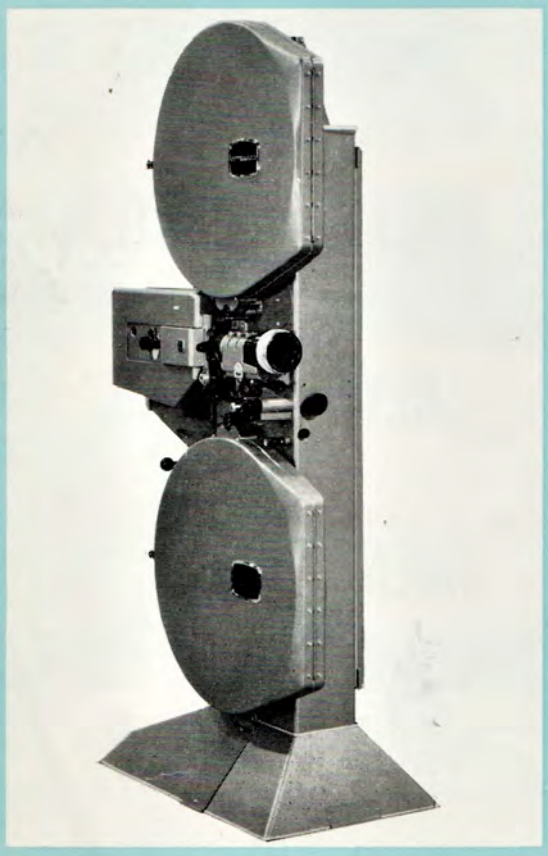

The SPP 1000 Pulsed Discharge Lamp: a remarkable improvement

Further development and improvements in manufacturing methods have resulted in a new pulsed discharge lamp producing a considerably higher luminous flux: the SPP 1000. Screen brightness now shows an increase of 50 % at a maximum load of 1000 watts.
The SPP 1000 Pulsed Discharge Lamp has the same dimensions as the SPP 800 lamp and it can therefore replace the SPP 800 lamp in present installations. The pulsator then limits the maximum load to 800 watts. However, even in this case a 20 % increase in luminous flux is obtained.

Another plus: A New Mirror

This is not all: a new mirror has been designed, which improves performance by another 20 %.

Philips FP 20 S Projector
SPP 1000 Pulsed Discharge Lamp
New Mirror
1000 watt Pulsator

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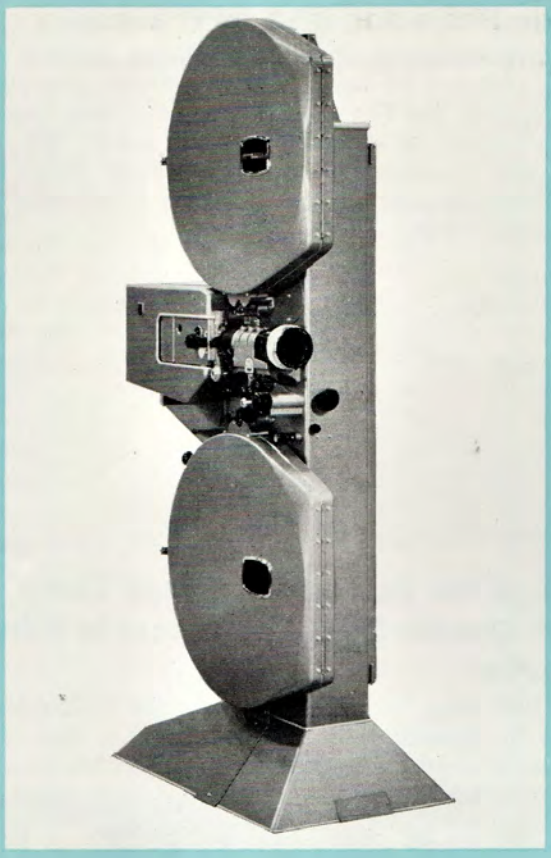
luminous flux of 9000 lumen, compared with 5000 lumen up to now obtained with SPP 800 lamps.

This 80 % increase implies that the luminous flux of the SPP 1000 lamp is now equal to that of an 80 ampere arc lamp: the requirement of a 13 ft/lambert screen brightness for Cinemascope can now be obtained for a screen size of up to 47 x 20 ft (14 x 6 m²).
This means in practice that either larger pictures can be projected, or colour rendition can be improved upon. For the latter purpose a Hicor Filter can be supplied and colour reproduction is now equal to that of a high intensity arc lamp, as required for e.g. the checking of films in studio laboratories.
As for the SPP 800 lamp, an average life of 33 hours is guaranteed for the new SPP 1000 Pulsed Discharge Lamp. As users of the SPP 800 lamp know, the life is usually considerably longer in actual practice.

Another new projector: the Philips FP 22 S Projector

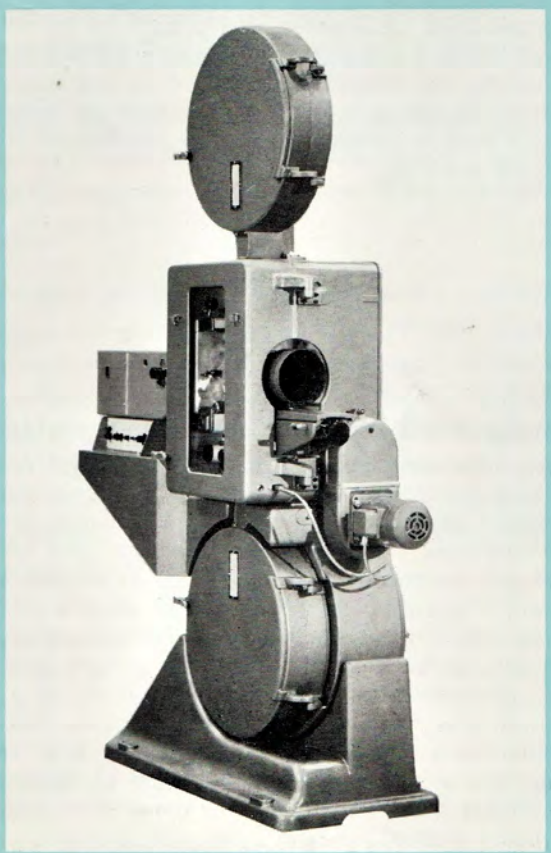
Large cinemas and drive-ins require a luminous flux of 10.000 to 20.000 lumen, up to now only obtainable by means of powerful arc lamps operating at 130 amps or more.
The new Philips FP 22 S projector, however, permits the use of pulsed discharge lamps to obtain the same screen brightness. Developed from the well-known FP 20 S projector, the FP 22 S projector achieves this by means of using two SPP lamps, the second one passing its light into the main beam from aside. The two lamps flashing immediately after each other every single frame is illuminated by three groups of **two** flashes. When the second lamp flashes, a rotating mirror lies in the light path of the primary



lamp and reflects the light of the second lamp onto the film aperture. A luminous flux of 15.000 lumen is thus obtained. This is sufficient for the largest cinemas and medium drive-in theatres. When the primary SPP lamp fails, automatic change-over to a stand-by lamp is effected, as is being done in the existing FP 20 S projector.

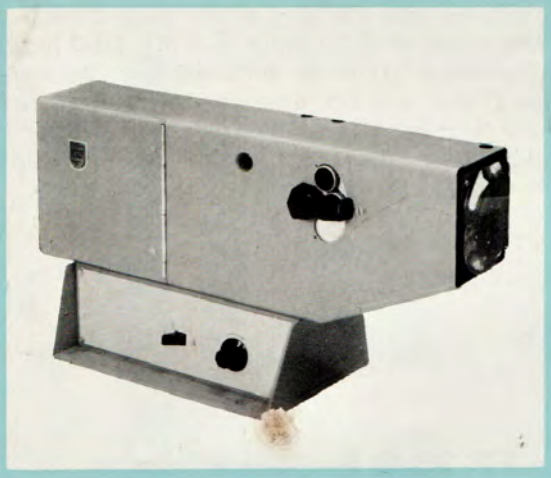
The FP 25 S Projector brings simplified SPP Lamp operation

The power supply for pulsed discharge lamps being relatively expensive because of its technical complexity, an effort has been made to simplify the pulsator by means of synchronisation with the electrical mains. This implies an increase in film speed from 24 to 25 frames per second. Working to 50 c/s mains, 100 flashes per second or 4 flashes per frame are obtained, compared with 3 flashes per frame in the conventional FP 20 S projector. The pulsator is now only half as large, even though a power of 1000 watts can be supplied.



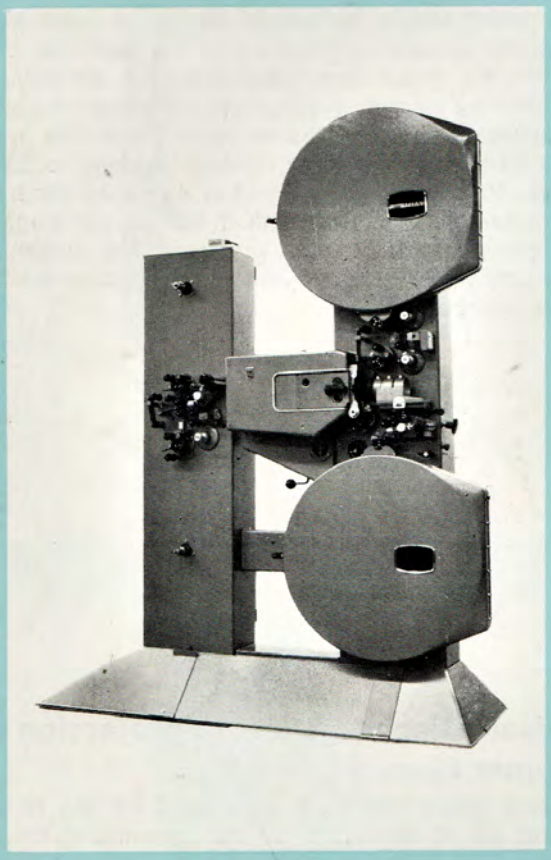
Pulsed Discharge Lamp projection of 70-mm films

A lamp house has been developed for the famous Philips DP 70 35/70-mm projector, permitting the use of the SPP 1000 lamp for projection of pictures up to 40 ft (12 m) wide. Remote control and programme automation are now feasible and all advantages of SPP lamp projection such as economical operation, flicker-free projection and uniform screen brightness are retained. Again, automatic change-over to the stand-by lamp is provided for.



Slide Projector with SPP Lamp

Another application of pulsed discharge lamps is in a slide projector for rear projection of backgrounds in TV studios. The Philips DSK optical system permits the projection of slides of 3 1/3 x 4 inches (8.5 x 10 cm) and, if required, somewhat larger slides. An SPP 1000 lamp at full load provides a luminous flux of 10.000 lumen.



Use of the Pulsed Discharge Lamp with Double-Band Projectors in Film Studios

The SPP lamp, in conjunction with the Philips Hicor Filter for equalizing the colour scheme to that of an arc lamp, is eminently suitable for use in film studios. It guarantees constant brightness of the picture, absence of flicker, permanently equal spectral colour distribution of the light, uniform illumination of the screen, and little heating of the film because of the "cold light" of the pulsed discharge lamp. For checking films these properties are particularly important.

The requirements the various studios make on the projection equipment vary considerably. The construction of the Philips FP 20 and FP 20 S projectors with their large mounting plane makes it possible to satisfy these different demands in an elegant way.

In double-band installations use is made of an almost normal FP 20 S projector and a similar steel housing for running the second film, either a normal film or a magnetic 35-mm perfotape. The synchronism between the two films is achieved either by mechanical or by electrical coupling.

Accelerated Intermittent Mechanism

Philips have designed for their FP 56 and FP 7 projectors a new intermittent mechanism with accelerated movement of the driving pin of the Maltese cross. With this new mechanism the film is moved within 1/144 sec instead of — as is usual — in 1/96 sec. Consequently, the total dark period caused by the two sectors of the shutter is only 1/72 sec instead of 1/48 sec, which theoretically gives a light gain of 33 %, the movement taking place within 60° of a full rotation. Measurements of the luminous flux in practice have shown that the light gain is at least 36 % since a small part of the period of movement can always be used for lighting the picture without this being noticed.

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