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Press Release

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Kinoton Studio Projectors Offer Colour Grading with Constant Colour Temperature

Kinoton provided a high-quality projection system for quality control at the Technicolor S.p.A., Thomson Group film laboratory, in Rome. The two FP 30 E-Q studio projectors were perfectly harmonised to enable reliable colour grading.

“We want to have the best colour grading room in Europe,” Sandro Chiocchi of Technicolor Rome demanded during his visit to Kinoton’s offices. What he needed to reach this goal were two projection systems with virtually identical projection characteristics to compare his company’s film copies with the original copy provided by the film studio. In change-over operation, undesirable colour aberrations can be detected so the copying process must be adjusted accordingly. Of course other quality criterions can be evaluated as well, e.g. whether the frames are positioned accurately on the film material.

The problem is that in contrast to digital systems, the projection characteristics of film projectors are very hard to bring in line. Many components on the optical path from the xenon lamp to the screen affect the projected image. Kinoton had to gauge many carefully selected high grade components in order to figure out the optimum combination.

Two FP 30 E-Q studio projectors, specially designed for quality inspection applications in postproduction, were the basis for extensive tuning efforts. Their direct electronic sprocket drive offers unsurpassed picture steadiness and infinitely variable projection speeds from zero to a sensational 48 fps forward and reverse. The fast slew operation up to 100 fps and zero localisation facilitate the repetitive examination of a scene. The slow motion and still frame projection modes provide exact single frame evaluation. Another advantage is the

electronic reel shaft drive, guaranteeing extremely gentle and smooth film handling – after all, the projection of precious original copies demands optimum film protection.

Anyone familiar with film projection can imagine how demanding the requirements of colour grading really are. Technicolor asked for a colour temperature of $5,400\text{ K} \pm 200\text{ K}$, with only 200 K difference in temperature between any combination of lenses. And of course they needed a high resolution of up to 80 lp/mm across the whole image, not to mention an optimum light distribution with a minimum diminution of marginal illumination of only 12.5%.

Experienced Kinoton technicians set out to exactly match the two studio projectors in Kinoton's facility. After arranging the FP 30 E-Q projectors exactly the way they would be placed at the Technicolor grading room, elaborate test series were started to find out the optical characteristics of different xenon lamps, mirrors, heat filters, lenses and projection room windows. These test results were the basis for the accurate selection and combination of all components to meet the specified values.

After the selection of components – over thirty mirrors and heat filters were thoroughly tested – the other parameters had to be aligned. Here it came very handy that with FP 30 E-Q projectors can automatically control the rectifier power setting to maintain the same brightness level no matter what screen ratio is selected. What's more, the operator can easily compensate for a decrease of light intensity due to xenon lamp aging by the push of a button.

The Schneider Kreuznach Cinelux Première lens series provided optimum image definition and illumination uniformity. In this case, both were virtually ideal. The requested image resolution of more than 80 lp/mm was achieved easily, as Kinoton studio projectors offer picture steadiness values well exceeding the SMPTE standards (jump $< 0.05\%$ and weave $< 0.15\%$ instead of SMPTE's jump < 0.12 and weave $< 0.20\%$).

It really was a lot of work for Kinoton, but it proved worthwhile. Kinoton proudly announced all the required values were achieved, or even exceeded.

About Kinoton

Kinoton, headquartered close to Munich, Germany, has become well known as one of the world's leading manufacturers of equipment and systems for post production and film presentation. The well established system provider with a staff of 160 employees keeps impressing professional circles with new technical developments. Kinoton offers complete system solutions for cinema and studio applications and for large format and special venue projection. The large product range also includes digital systems for administration, distribution and presentation of digital content as well as innovative display systems.

More information is on the Internet at www.kinoton.com.

Photo:

technicolor_FP30E-Q.jpg (Kinoton's FP 30 E-Q studio projector dream team for colour grading)