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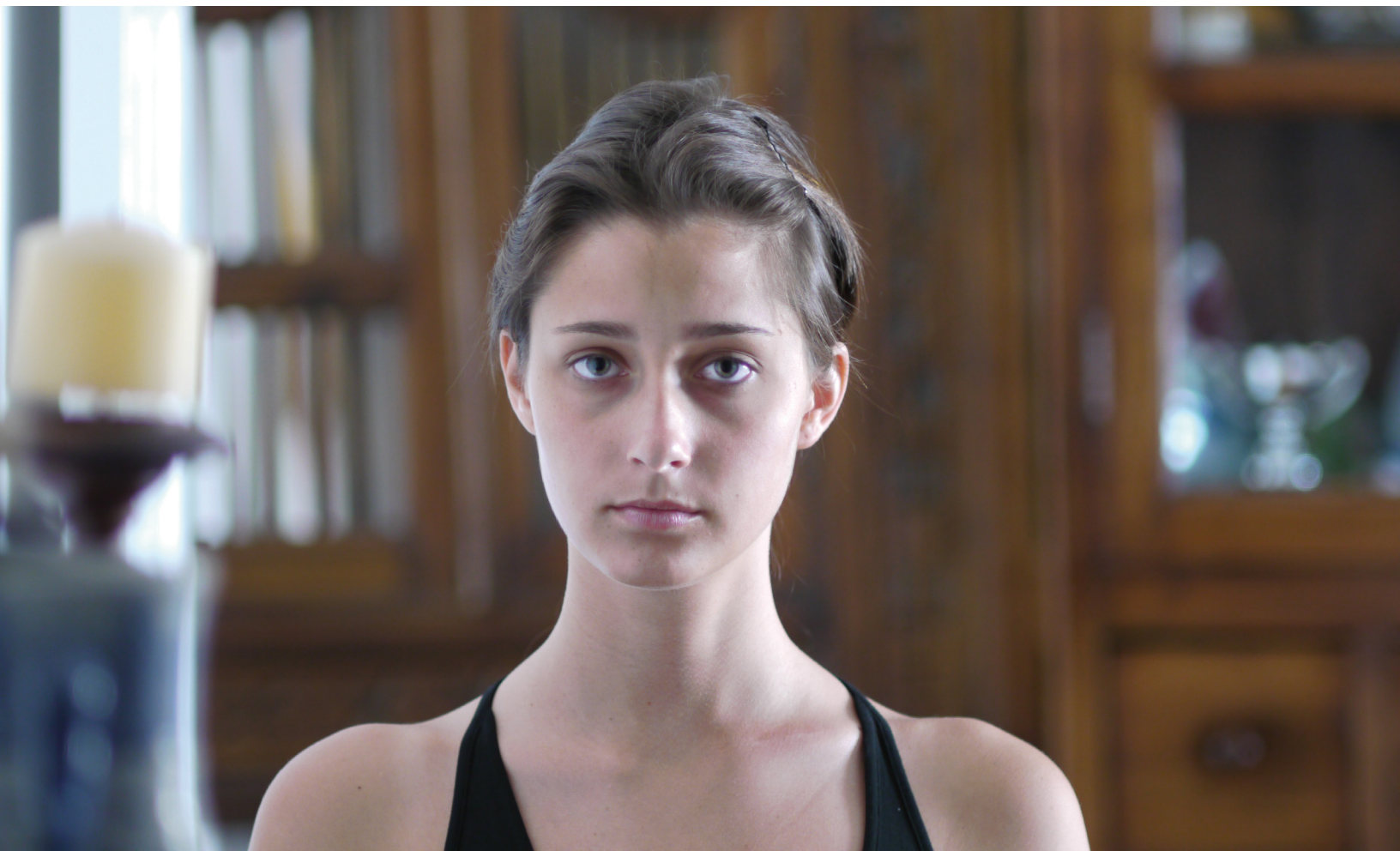
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# FILM AND DIGITAL TIMES





# First Look Cooke 5/i



*left to right: Cooke 5/i 100mm T1.4,  
Cooke S4/i 100mm T2.0,  
Cooke Panchro/i 100mm T2.8*

# The Cooke Look

The lensmakers in Leicester must have been working overtime. Just when we thought the big lens story was the reintroduction of the legendary Panchro series, Cooke surprised us with yet another new series: The Cooke 5/i. There will initially be 9 lenses in the Cooke 5/i series: 18, 25, 32, 40, 50, 65, 75, 100 and 135mm, all T1.4-T2.2. They all cover Super 35mm format (30mm diameter) and have a front diameter of 110mm.

A few days before going to press, we tested 100mm pre-production samples of the new 5/i and Panchro/i lenses, along with a Cooke S4/i 100mm. The Cooke Look isn't imaginary—it's really visible. The frame-grab (above) was shot "wide open with a wrench" on the Cooke 5/i 100mm at T1.4.

Notice how the focus "rolls" off instead of "falls" off. You know the location was dark by looking at the model's pupils. Cooke lenses look the way they feel: the silky lustrous look mirrors the smooth feel of the focus ring. Our tests showed that on all three lenses, faces are consistently cosmetically silky smooth, romantic, definitely not "soft," but rather pleasantly blended. Describing the Cooke Look requires the vocabulary of wine tasting, with words like full, round, and luminous.

We compared line pairs and MTF until our eyes glazed over, and, of course, the 5/i was sharper, richer, and performed a little better than the S4/i and Panchro/i at all apertures. But what we really want to know is, "what do these lenses really look like?"

The new 5/i, S4/i, and Panchro/i intercut well: color and contrast is consistent. It seems to be mainly a difference of speed versus cost: the faster the aperture, the more Euros it will cost you. This isn't as hard-hearted as it sounds, because the higher rental rate of a T1.4 5/i may be offset by a savings in lighting rental, or being able to do see into the shadows of a night exterior that might otherwise be murky black.

The first question you might ask is, "when do I use the 5/i and when do I use the S4/i?"

I think there are two important differences. The 5/i lenses are slightly sharper and more contrasty, making them important for effects work and big budget sweeping vistas. They are heavier, so Steadicam operators may still prefer Series 4 or Panchro. But the big deal will be using the 5/i series for Night Exteriors.

Since the 5/i lenses will surely be on location at night, in dark places or dimly lit sets, they have an industry-first built-in, dimmable light to illuminate the focus scale. Although this feature might impact heavily on sales of cigar-like Maglites, there are obvious advantages to avoiding accidental illumination of the actors in front of you as you turn from scene to lens and back again, not to mention the aluminum aftertaste.





Cooke 5/i<sup>®</sup>

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100 mm















Framegrab with 5/i 100mm T1.4





Illuminated, dimmable focus scale of the Cooke 5/i.



How do you dim the 5/i focus scale?

In addition to a control on the lens itself, new software for Preston's FI+Z Hand Unit 3 and MDR2 support both the display of Cooke /i information and also enables wireless dimming control of the 5/i focus scale light.

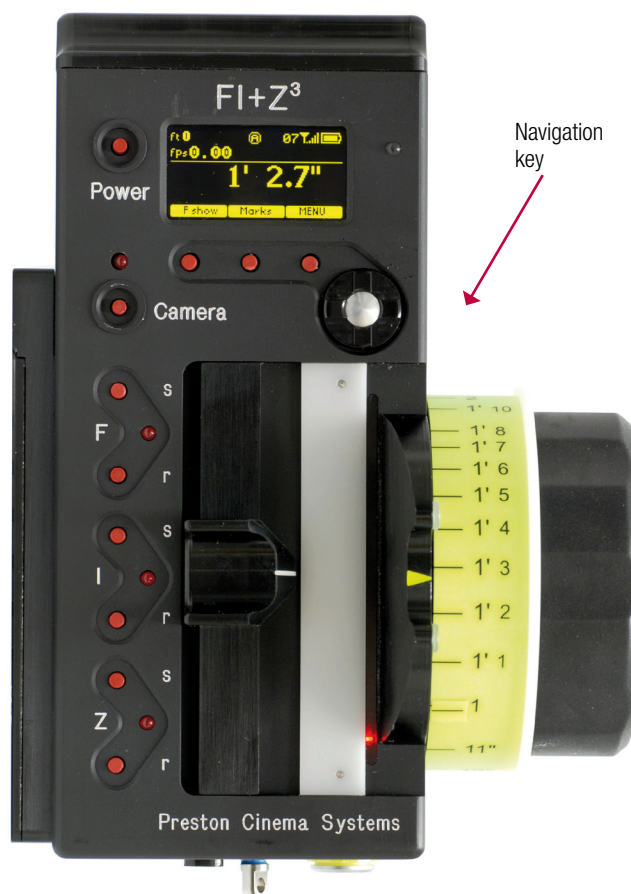
The 5/i focus scale is adjusted by pressing the Navigation key's right or left side. (The top and bottom of the Navigation key are used to brighten and dim the LED's of the Preston FI+Z.)

Preston cable #4544 connects Cooke /i lenses to the serial receptacle of the MDR2 receiver. Once the MDR2 establishes communication, the HU3 display is automatically updated with the Cooke lens data.

Transvideo's new CineMonitorHD/i supports Cooke's /i lens data system with remote control and lens information on screen.

SONY F35, RED, Pixel Farm, cmotion, and other companies are using Cooke /i data in productive ways.

Meanwhile, camera crews worldwide will be clamoring for Cooke's bright idea for wirelessly dimming lens focus scales in the dark.





Helpful notation of Entrance Pupil (E.P.) position in mm and inches from the lens mount flange.

This is the optical “pivot point” to be centered on nodal heads to eliminate image shift when panning.









# New Cooke 5/i Lens Set

	Units	18mm	25mm	32mm	40mm	50mm	65mm	75mm	100mm	135mm
T Stop Range		T1.4 - T22	T1.4 - T22	T1.4 - T22	T1.4 - T22	T1.4 - T22	T1.4 - T22	T1.4 - T22	T1.4 - T22	T1.4 - T22
Angular Rotation of Iris Scale	Degrees	90	90	90	90	90	90	90	90	90
Minimum Marked Object Distance	mm	250	350	350	450	500	600	650	750	TBD
	Inches	14"	14"	14"	16"	20"	24"	27"	30"	TBD
Close Focus from Lens Front	mm	20	120	120	220	270	370	420	520	TBD
	Inches	1"	5"	5"	9"	11"	15"	17"	20"	TBD
Angular Rotation to MOD Endstop	Degrees	270	270	270	270	270	270	270	270	270
Maximum Diagonal Angle of View for Super 35 Format	Degrees	79.61	61.93	50.23	41.11	33.4	25.99	22.62	17.06	12.68
Length from Front of Lens to Lens Mount	mm	174	117	117	117	117	117	117	183	TBD
	Inches	6.85"	4.61"	4.61"	4.61"	4.61"	4.61"	4.61"	7.20"	TBD
Maximum Front Diameter	mm	110	110	110	110	110	110	110	110	TBD
	Inches	4.33"	4.33"	4.33"	4.33"	4.33"	4.33"	4.33"	4.33"	TBD

- Maximum Format Coverage 30mm Diameter (Super 35mm Format)
- Focus Scales Two opposing focus scales - metric & footage. Scales marked from infinity to MOD.
- Focus Drive Gear 140 teeth 0.8 metric module x 5.0 wide 102.5 from the image plane.
- Iris Scales Two opposing linear T scales - whole and third stops marked.
- Iris Drive Gear 134 teeth 0.8 metric module x 2.5 wide x 82 from image plane.







# Cooke 5/i and...Cooke Panchro/i



# First Look: Cooke Panchros



Like the Phoenix rising in Harry Potter, the venerable Cooke Panchro name is being revived, or should we say, reinvented. Film and Digital Times has learned that Cooke is working on a new set of PL mounted lenses for 35mm motion picture film and digital production. The six new Cooke Panchro/i series—18, 25, 32, 50, 75, 100 mm, all T2.8—should be ready by the end of the year, available individually or as a set. Panchros are designed, manufactured and assembled in Leicester, England by the same team that created the S4 lenses, at an affordable price. They are clearly aimed at the large and vibrant community of up and coming cinematographers.

But these are not training wheels for your top of the line Cookes. When you get your ASC or BSC award, you are not obliged to trade these Panchros in for S4 lenses, much as Cooke owner Les Zellan would be delighted you do. The Panchros sacrifice nothing except a stop of light (T2.8 on Panchros vs T2.0 for Cooke S4). The resolution is expected to be as good as an S4 at T2.8. They are about 20% lighter and smaller. The new Panchro line is being designed with 4K (and beyond) digital and film production in mind. The aperture is linear. Focus mechanisms are still cams. Focus scales are generous. And Cooke /i Technology is included.

Preliminary technical specs are printed on the next page. The Panchros are still a work in progress, so details, specs, shapes and other things may change. One thing is not going to change: the inexorable demand for more PL mounted lenses to put on all the new film and digital cameras, including the Sony F35, ARRI D21, RED, Aaton Penelope and the hundred-thousand existing PL mount cameras. Panchros have a prestigious provenance. The majority of feature films made in Hollywood during the first half of the 20th century were shot using Cooke lenses, and many of these were Panchros. In 1921, Horace W. Lee designed the Cooke Speed Panchro, a prime lens with a wide aperture for filming in low light.

In September 9, 1926, Kinematograph Weekly reported: “Over a hundred Taylor-Hobson Cooke lenses of various focal lengths are used by the photographic department of the Famous Players-Lasky studios. This interesting information is contained in a letter from Frank E. Carbutt, Famous’ Director of Photography. Mr. Carbutt adds that these lenses have, without, exception, given perfect satisfaction and that they have yet to find a poor Cooke lens.”

July 1930, from an article in The British Journal of Photography: “It deserves to be better realized in the photographic world to what extent Taylor-Hobson lenses have come into favour in the sound-film and silent-film studios in England and in Hollywood. The Cooke lenses of very large aperture have been establishing themselves increasingly in film production for several years past, and are now in use to an extent which is very gratifying to those knowing the merits of British products. In the same way Taylor-Hobson projection lenses have secured something like a monopoly among the ‘super cinemas’ in this country for projecting these same films. Frequenters of the movies may reckon therefore that most of the pictures which they see are both produced and projected by means of lenses made in the Leicester factories.”

By 1935, Cooke Speed Panchros for cinematography were supplied in 8 focal lengths: 24, 28, 32, 35, 40, 50, 75 and 108 mm. They all covered the standard or “normal” 35mm 1.33:1 format of 0.631 x 0.868 inch.

“Those who fail to learn the lessons of history are forced to see it repeated,” said a famous statesman. It seems that Cooke has not failed in their history lessons and are repeating the success of one of the most popular lens sets of all time.



# Cooke at NAB 2009



NAB 2009. Les Zellan, chairman of Cooke Optics (above, at NAB Press Conference), announced the rebirth of an iconic lens, the Cooke Panchro lens. The PL mounted lens for 35mm film and digital production is a modern redesign of the original Cooke Panchro lenses that were widely used in Hollywood. The legendary lens is expected to be available at the end of 2009.

The Panchro by Cooke lens is designed by the same team that produces the Cooke S4/i lens; it is calibrated and color-matched to existing Cooke lenses and incorporates Cooke's /i technology, so it is interchangeable with the Cooke range.

The new Panchro sacrifices one stop of light (T2.8 compared with T2.0 for Cooke S4), thereby offering a smaller, lightweight and affordable choice when a faster lens is not crucial or when shooting in difficult situations such as crash scenes or VFX shots. The price point also brings the benefits of Cooke lenses to independent filmmakers, film students and documentary makers, while the reduced size, weight and true focal length markings make Panchros ideal for 3D stereoscopic productions.

Les Zellan, chairman of Cooke Optics, said, "We are so excited to bring Panchro By Cooke back to the film industry. With the credibility of film history and over 100 years of development behind it, the Panchro by Cooke lens is a serious yet affordable piece of equipment for professional film makers."

The Panchro lens has played a major role in the history of Hollywood. Horace W. Lee designed the original Cooke Speed

Panchro in 1921; it was a cine prime lens that chromatically enhanced an image when filming under low light. The advent of sound films created a great demand for faster lenses since arc lamps were difficult to use because of the noise they made, making most existing lenses obsolete. The Speed Panchros were born out of the industry's need for faster lenses to cope with lower light levels brought about by the new sound requirements on the set. Cooke Speed Panchros combined a relative aperture of f/2 with an angular field of view and definition previously impossible with much smaller apertures. The Cooke Panchro was also instrumental in the introduction and success of Technicolor in the 1930s because the Panchro's unusually high correction for chromatic aberrations made it suitable for color photography.

The six Panchro By Cooke prime lenses - 18, 25, 32, 50, 72 and 100mm - will be available to purchase individually or as a set. The lenses are expected to be available at the end of 2009.

Cooke also announced that the popular Sony F35 CineAlta camera will incorporate support for Cooke's /i Technology. The /i Technology protocol enables the recording of extremely accurate, frame-by-frame lens and camera data seamlessly on the set. This can save visual effects artists hours of time in post-production by eliminating the need to guess lens parameters and camera information. This information enables artists to produce more realistic-looking effects, more quickly. In August, Geoff Boyle (below) conducted a London /i test near the London Eye for Cooke and Pixel Farm on an /i equipped Sony F35. Details of the compositing test will follow.

Cooke's /i Technology is supported by many leading camera and content creation companies including RED, Aaton, ARRI, Avid and Pixel Farm.

Cooke S4/i lenses were recently used on award-winning films and television shows including *Milk*, *Frost/Nixon*, *30 Rock* and on cameras throughout the NAB show. As well as demonstrations at the P+S Technik booth, the S4/i lenses were also in the Canon, JVC, Sony and Band Pro booths.



# Cooke Panchro/i to be shown at IBC 2009





# Cooke Panchro/i



Stop the presses. Cut cameras.

Although there were CAD drawings of the Cooke Panchros at NAB, we weren't really sure what to expect. Today, August 24th, we are not only staring at a real production model of the Panchro /i 100 mm T2.8 , but also are about to shoot a test with it.

Several things come as surprises: all good. This looks, feels and acts like the Cooke S4 series: the same silky, floating feeling as you pull focus...no binding or resistance...effortless focus riding on its cams.

AT NAB, there was chatter and twitter that this would be a Cooke Lite, less filling and maybe less impressive. Not so. If anything, it fills a void hitherto unaddressed. As Geoff Boyle so eloquently put it on the phone yesterday, the fact that the Panchros are color matched and perform like their brethren means you can confidently order them by the dozens and dozens for your multi-camera shoots.

For example, a normal camera and lens package for the bulk of your single-camera show might include a couple of zooms and a set of S4/i lenses. But, now it's time for the big stunt end scene, you know, where they jump off the largest cliff the world has ever seen, or something equally impressive and equally demanding of at least ten cameras running concurrently.

Now, you know the producers is going to pull out the Pepcid pills for acid indigestion if you suggest renting ten complete sets of S4 primes for every crash camera covering the shot. And you're certainly not going to volunteer your own personal set. The answer is a plethora of Panchros, lighter, smaller, less expensive than the S4 set, one stop slower, and very impressive. The rest of the set is coming soon.



# Cooke Panchro/i



While testing the Panchro/i 100 mm T2.8 (at T2.8, above), there were several surprises, all good. It looks, feels, and acts like the Cooke S4/i and 5/i series lenses: the same silky, floating feeling as you pull focus...no binding or resistance...and the smooth cosmetic Cooke Look.

This is by no means a Cooke Lite, less filling and wimpy. Not so. Panchros fill a void hitherto unaddressed. Because the Panchros are color matched and perform like their siblings, you can confidently order them by the dozen for your multi-camera shoots, to supplement your S4/i and 5/i “A” camera lenses.

Surely you know the producer is going to froth at the mouth if you suggest renting ten complete sets of S4/i or 5/i primes for

every multiple camera and crash housing covering the shot. The answer is a plethora of Panchros: lighter, smaller, less expensive than the S4/i or 5/i, slightly slower, and still very impressive.

There are 6 lenses in the Panchro/i set: 18, 25, 32, 50, 75, 100mm, all T2.8-T22. The front diameter is 87mm for all lenses. Angular rotation from infinity to minimum object distance (MOD) is 300° and the 100mm is 137mm/5.39" long. Focus and iris gears on each of the S4/i, 5/i and Panchro/i series have the same pitch and are consistently located in the same position relative to the lens mount.

For specs and more information about the Panchro/i and 5/i lenses, go to: [www.fdtimes](http://www.fdtimes) or [www.cookeoptics.com](http://www.cookeoptics.com).







## New Cooke PANCHRO/i Lens Set

	Units	18mm	25mm	32mm	50mm	75mm	100mm
T Stop Range		T2.8 - T22	T2.8 - T22	T2.8 - T22	T2.8 - T22	T2.8 - T22	T2.8 - T22
Angular Rotation of Iris Scale	Degrees	75	75	75	75	75	75
Minimum Marked Object Distance	mm	250	250	350	550	800	900
	Inches	9"	9"	12"	20"	30"	36"
Close Focus from Lens Front	mm	79	100	160	360	610	710
	Inches	3"	4"	6"	13"	23"	29"
Angular Rotation to MOD Endstop	Degrees	300	300	300	300	300	300
Maximum Diagonal Angle of View for Super 35 Format	Degrees	80	62	50	34	22	17
Length from Front of Lens to Lens Mount	mm	120	106	137	137	137	137
	Inches	4.70"	4.17"	5.39"	5.39"	5.39"	5.39"
Maximum Front Diameter	mm	87	87	87	87	87	87
	Inches	3.43"	3.43"	3.43"	3.43"	3.43"	3.43"
Total Weight	kg	2.10	1.90	1.70	1.50	1.60	1.60
	lbs	4.62	4.18	3.74	3.30	3.52	3.52

- Maximum Format Coverage: 30mm Diameter (Super 35mm Format)
- Focus Scales: Two opposing focus scales - metric or footage. Scales marked from infinity to MOD.
- Focus Drive Gear: 121 teeth 0.8 metric module x 5.0 wide x 104 from the image plane.
- Iris Scales: Two opposing linear T scales - whole stops marked.
- Iris Drive Gear: 119 teeth 0.8 metric module x 2.5 wide x 84 from image plane.



Framegrab with Panchro/i 100mm T2.8





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