Color Temperature Data for Kino Flo® True Match® Lamps

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Unfortunately the color meters available to cinematographers are far from being scientifically accurate. They act as a great comparative tool to determine differences between two given light sources but are inadequate in providing definitive data. You will rarely find two color meters, even if they are the same models, which provide equal data. Results between meters may be similar but not identical.

The following Color Temperature data are meant as a general guide for reading Kino Flo lamps on three of the most common photo industry color meters; the Minolta Color Meter II, Minolta Color Meter IIIF, and the Gossen Colormaster 3F.

Note: Minolta disclaims its meters' Color Compensating (CC) data when reading fluorescent lamps and recommends film tests to determine correct filtration.

Color Meter Readings					
	Select	**Operating**			
Lamp Type	**setting**	**temperature**	**Minolta II**	**Minolta IIIF**	**Gossen**
8ft Kino KF55	HO	38C	5050 -1cc	5640 2M	5550 0cc
6ft Kino KF55	HO	42C	5050 -0cc	5600 4M	5580 0cc
4ft Kino KF55	4ft	42C	4900 +0cc	5530 5M	5250 5M
3ft Kino KF55	4ft	43C	5200 -0cc	5800 2M	5680 0cc
3ft Kino KF55	2ft	37C	5050 -3cc	5560 0cc	5580 0cc
2ft Kino KF55	2ft	38C	4900 -1cc	5440 0cc	5260 0cc
15" Kino KF55	2ft	36C	4900 -1cc	5470 2M	5340 0cc
8ft Kino KF32	HO	41C	3090 -1cc	3420 1G	3190 0cc
6ft Kino KF32	HO	44C	3090 -1cc	3420 2G	3190 0cc
4ft Kino KF32	4ft	44C	3180 +1cc	3540 0cc	3240 0cc
3ft Kino KF32	4ft	44C	3320 +1cc	3730 4M	3490 5M
3ft Kino KF32	2ft	37C	3060 -0cc	3360 1M	3190 0cc
2ft Kino KF32	2ft	39C	3020 +0cc	3310 1G	3110 0cc
15" Kino KF32	2ft	41C	3050 0cc	3380 2G	3170 0cc
8ft Kino KF29	HO	50C	2830 -1cc	3160 1G	2980 0cc
6ft Kino KF29	HO	41C	2960 +0cc	3340 0cc	3070 0cc
4ft Kino KF29	4ft	44C	2920 +1cc	3260 1M	2970 0cc
3ft Kino KF29	4ft	44C	2870 +1cc	3200 2M	2950 5M
3ft Kino KF29	2ft	36C	2700 -0cc	2990 1G	2780 0cc
2ft Kino KF29	2ft	37C	2860 -0cc	3200 3G	2970 0cc
15" Kino KF29	2ft	40C	2870 +0cc	3190 0cc	2950 0cc

Color Reading Procedure

The safety-coated lamps were read in a single fixture, lying face up on a bench. The lamps were burned for 20 minutes in an ambient temperature of 76F (24C). Operating lamp temperature was measured with a surface probe at the middle of the lamp. The color meter was held about 12 inches (30cm) above the middle of the lamp. No other light source was on in the room.

Tips For Reading Color Temperature

Make sure no other light source is on or is able to reach the meter.

Hold meter about 12 inches (30cm) from the center of the light source. Do not hold the meter directly against a lamp, as the reading will be inaccurate.

Do not hold the meter up against the louver. The louver shadows a portion of the meter's diffusion disc resulting in inaccurate data.

Don't confuse LB filter data with CC data. LB filters are Light Balancing Filters that appear orange or blue. CC filters are Color Compensating Filters which appear magenta and green.

Color Meter Variables

The filtering data provided by the various meters differs in resolution and value assignment.

Minolta II

The older Minolta II shows Color Compensating Filter (CC) data as a range of ± values in single digit increments. These values translate to Kodak Wratten filters. A conversion chart is provided on the back of the meter. A plus value indicates the spectrum has additional green, a minus value indicates additional magenta. Magenta filters reduce the green content, green filters reduce the magenta content.

Minolta II cc+ Magenta conversion chart	
+2	5M
+4	10M
+8	20M
+13	30M
+18	40M

Minolta II cc- Green conversion chart	
-2	5G
-4	10G
-7	20G
-10	30G
-13	40G

Minolta III F2 and Gossen Colormaster 3F

The Minolta III F2 and the Gossen Colormaster 3F provide direct Kodak Wratten filter values. The resolution of the Minolta is in single digit increments. The Gossen is lower in resolution and provides data increments in filter values of 5. In other words, where the Minolta might render a filter value of 3M the Gossen will render a 5M value.

Color Compensation Filters

As a general guide, here are the cinema gels as they correspond to the CC meter readings to correct the light to a zero CC value.

Magenta Color Compensation

Filter Description	Minolta II	Minolta IIIF	Gossen
1/8 Minus Green (Magenta)	+2cc	4M	N/A
1/4 Minus green (Magenta)	+3cc	8M	5M
1/2 Minus Green (Magenta)	+7cc	19M	10M
Full Minus Green (Magenta)	+12cc	31M	15M

Green Color Compensation

Filter Description	Minolta II	Minolta IIIF	Gossen
1/8 Plus Green (Green)	-2cc	6G	N/A
1/4 Plus Green (Green)	-3cc	9G	5G
1/2 Plus Green (Green)	-7cc	17G	10G
Full Plus Green (Green)	-12cc	29G	15G

For an example of how Kodak Wratten Filters relate to Color Compensation gels, ROSCO has published a chart comparing their Cinegel series with Wrattens:

ROSCO Cinegel Green Color Compensating	Kodak Wratten
#3304 Plusgreen	Wratten CC-30G
#3315 _ Plusgreen	Wratten CC-15G
#3316 _ Plusgreen	Wratten CC-075G
#3318 1/8 Plusgreen	Wratten CC-035G

ROSCO Cinegel Magenta Color Compensating	Kodak Wratten
#3308 Minusgreen	Wratten CC-30M
#3313 _ Minusgreen	Wratten CC-15M
#3314 _ Minusgreen	Wratten CC-075M
#3317 1/8 Minusgreen	Wratten CC-035M