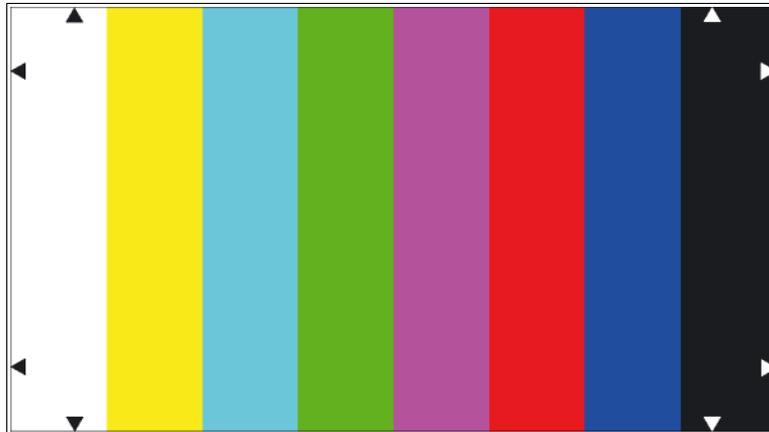




## COLOR BAR TEST CHART 16:9

### TRANSPARENCY



The test chart TE106 is designed for checking the color rendition of TV cameras.

The picture area is divided into 6 color bars showing the three primary colors red, green and blue and the secondary colors cyan, yellow and purple; in addition there is one bar of white and black. The succession from left to right - white, yellow cyan, green, purple, red and blue - corresponds to that of an electronically generated color bar.

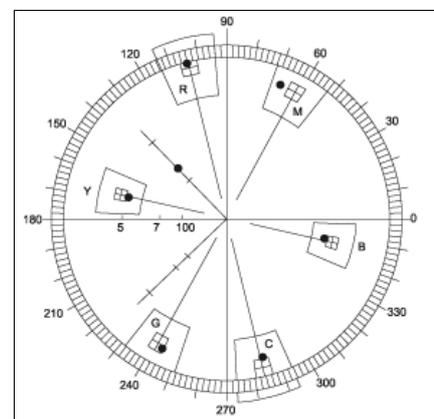
The test chart is adjusted to standard light D65. It can be used in an illuminator with fluorescent tubes as the LG2. No matter which kind of light you are using, the camera has to be white balanced to the white bar of the transparency first.

The colors of the transparency are close to the SMPTE standard colors of the electronic color bar as far as chroma, saturation and luminance are concerned. Slight deviations from the standard values can, however, not be avoided due to the color pigments of the filters available.

The spectral transmission values of the colors were measured by a spectrometer under standard conditions. Then the CIE-XYZ values were calculated for standard illumination D65. The resulting XYZ-values were mathematically transformed by the SMPTE-matrix and give the results shown in the figure and the table on the following page.

Deviations of the test transparency color coordinates from the standard values are usually under 5%. The largest deviations are with blue, which has a too small color saturation. It has to be noted that different measuring devices and methods may lead to significant deviations, i.e. measuring errors of 5% are considered acceptable.

The figure on the right shows the calculated values of the colors as they should appear on a vectorscope.





**Color Bar Test Chart – Colorimetric results  
compared with the SMPTE 100 / 7.5 / 75 / 7.5 Color Bar**

Color	RGB values						Luminance (IRE)		Croma level (IRE)		Min. chroma Excursion (IRE)		Max. chroma Excursion (IRE)		Phase (degrees)	
	R%		G%		B%											
	SMPT	106	SMPT	106	SMPT	106	SMPT	106	SMPT	106	SMPT	106	SMPT	106	SMPT	106
White	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Yellow	75	72	75	73	0	0	69	66,7	62,1	61,9	37,9	37	100	96,4	167,1	168,8
Cyan	0	0	75	76	75	81	56,1	57,1	87,7	91,3	12,3	11,5	100	102,7	283,5	284,6
Green	0	0	75	79	0	0	48,2	50,2	81,9	85,9	7,3	7,2	89,2	93,1	240,7	243,2
Purple	75	74	0	0	75	64	36,2	34,6	81,9	78,6	-4,8	-4,7	77,1	73,9	60,7	66,4
Red	75	77	0	0	0	0	28,2	30,1	87,7	87,6	-15,6	-13,8	72,1	73,8	103,5	103,5
Blue	0	0	0	0	75	59	15,4	13,6	62,1	48,2	-15,6	-10,5	46	37,8	347,1	347,1