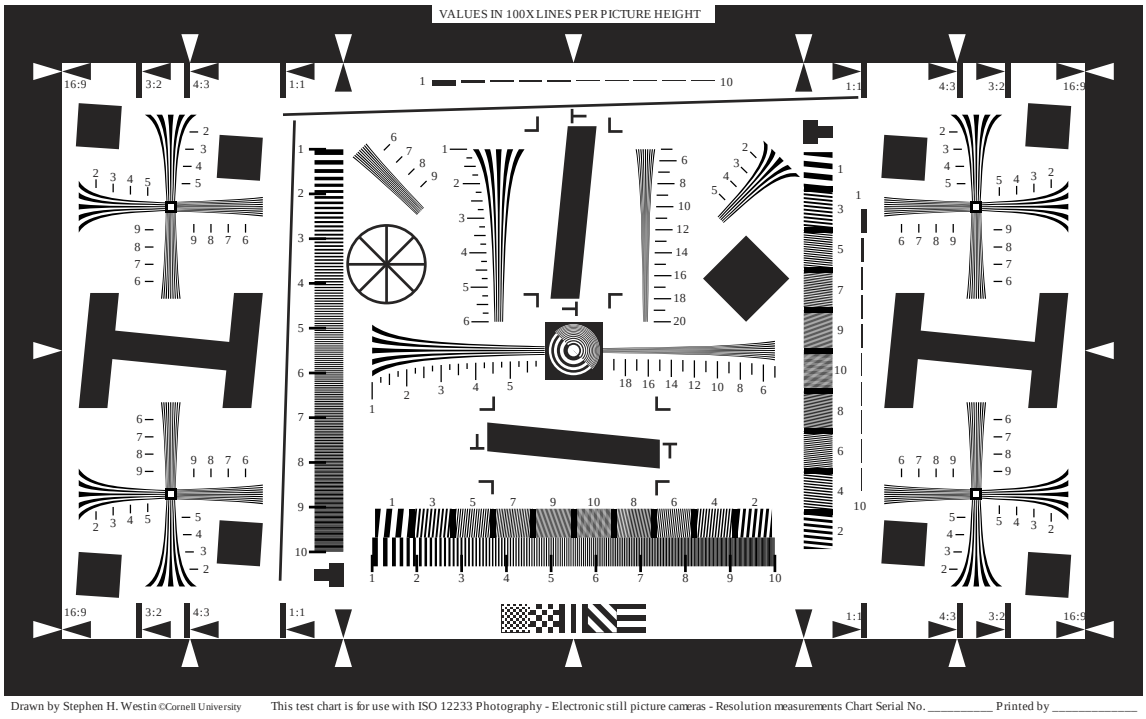
ISO 12233 Test Chart

The ISO standard for measuring resolution of “electronic still imaging”" cameras is 12233, available only from the International Standards Organization for only 116 Swiss Francs (about $US93 as of this writing) and under copyright protection. But the design of the test chart seems not to be protected; its description has been available on the Web in an Excel spreadsheet. I have semi-manually converted this to an Adobe Illustrator file which is displayed here.



Download Adobe SVG Viewer

The display to the left is an SVG document. If you see text instead of the chart, you probably are using Internet Explorer or an outdated version of another browser. Either update or wait for Internet Explorer 9, which is expected to support SVG. If something shows up, but seems to be missing something, it's possible your browser has bugs in rendering SVG.

Click here for a printable PDF version. The size is 15.75×8.45 inches (400×240mm); you will probably have to resize to fit your printer.

In principle, you should be able to print this chart and perform resolution tests on your camera. The reality isn't that simple; there are lots of subtleties having to do with focus distance, quality and contrast of your printer, evenness of illumination, surface reflections, etc.

Advanced resolution tests

It seems that most folks, for example Imaging Resource, use this chart for visual assessment of resolution, but it's designed to do more. See those funny crooked “H”" shapes and squares? These provide data for computational analysis of resolution; tools are available at this site to perform this analysis; for more information, see this page. There is at least one company selling a low-cost (<$US100) kit for measuring resolution by means of this slanted-edge technique. For more info, I suggest a Google search or the Wikipedia article on optical resolution.

Buying a real ISO 12233 chart

The proper way to perform these tests is to order both the ISO standard and a properly-made test chart. The

latter are available, for example, from Precision Optical Imaging in Rochester, New York. See the I3A site for worldwide sources. Expect to pay more than $US100 for such a chart. The alternative is to do it on the cheap: take the PDF file, print it in an appropriate size, download the code, and start testing. I think some people have posted raster images (e.g. JPEG files) of the chart on the Web; the outline description here should produce a better test chart, as it isn't limited to pixel-level resolution.

DISCLAIMER

I have tried to reproduce the ISO standard test chart using the official ISO data, but neither I nor Cornell University guarantees compliance with ISO 12233 or any other standard, nor do we take any responsibility for the quality of results based on this chart.

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