

Information technology — Automatic identification and data capture techniques — Effects of gloss and low substrate opacity on reading of bar coding symbols

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National foreword

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Summary of pages

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symbols**

*Technologies de l'information — Techniques d'identification
automatique et de capture des données — Effets de la brillance et de la
faible opacité du substrat sur la lecture des symboles de code à barres*



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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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ISO/IEC TR 19782, which is a Technical Report of type 3, was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

Introduction

Users of bar code systems have experienced problems with poor read rates. These read rate problems can sometimes be attributed to spectral gloss from either the substrate or the image or both.

In many bar code applications, the position and orientation of the scanner relative to the bar code symbol can be directly controlled by the operator. In these applications, the presentation of the bar code symbol to the reader will usually be manipulated by the operator to achieve optimal performance. However, in bar code applications using fixed position automated reading systems, the ability to control bar code symbol presentation to the reader and achieve optimised performance is diminished.

Due to the very high volume of bar code marked items in today's supply chain, even a small reduction in read rate can represent significant logistics problems.

Traditional gloss measurements are made at the angle that maximises specular reflection and do not provide results that can be used to predict performance at other angles. Moreover, many laser scanners use a retro-collective optical system that would correspond to a gloss meter using a zero degree angle of incidence, which is not commonly available.

Present international bar code quality standards, such as ISO/IEC 15416, do not factor the impact of gloss from either the bar code image or substrate into quality grade ratings. Thus a Grade "4" label may be high gloss or low gloss. Low gloss labels and images tend to work well in all scanning systems, while high gloss labels and images may not. In the absence of industry specifications, users have no convenient reference to use when requesting suppliers to provide labels that will work well in their systems. This Technical Report provides a method for the measurement of gloss that will permit users to judge if the bar code symbol and substrate are suitably matched for the reading system used in their application.

Low opacity of the substrate can degrade system performance because it may reduce the apparent contrast of the bar code symbol. This Technical Report therefore provides means for measuring the substrate opacity.

The test method described in this Technical Report provides a means for the production of reproducible measurements. In specific applications, it may be necessary to correlate these measurements to practical performance. For example, a substrate backed by dark liquid may exhibit lower opacity than when measured dry.

