



**Advancing  
Identification  
Matters.**

## **AIM-D - Symbology Specification – Data Matrix Rectangular Extension (DMRE)**

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## Foreword

AIM-D is a German registered association (e.V.) and an affiliate to AIM Global. AIM-D is an industry association focusing on automatic identification with barcode and RFID technologies and automatic data capture.

The technical working group for Optical Readable Media (ORM) has worked in close co-operation with Eurodata Council to write this specification. Special thank is given to Dr. Harald Oehlmann as principal drafter.

## Introduction

The Data Matrix ECC 200 code is widely used in various applications. Automotive industry is an early adopter, but also many other branches have identified Data Matrix as the best barcode symbology to encode an increasing amount of data in a very small size.

The significantly increased use of Data Matrix codes has brought up products of small sizes and different shapes which need to carry a code. On the other hand the amount of data to be encoded grew enormously and required standardized data formats to be inter-operable in a wide supply chain. Furthermore, requirements for counterfeiting especially in the pharmaceutical industry came up and caused another add-on of data.

Finally the serialization of products pushed the use of inline printing systems such as inkjet or Laser inscribing, which offer only limited print height and resolution.

All this leads to a need for additional rectangular code formats. Small carton boxes or round containers provide sufficient space only in one dimension. In addition with the increased amount of data it became clear that the existing rectangular data formats as described in the ISO/IEC standard 16022 would not fulfil these needs.

With this specification 12 additional rectangular Data Matrix code symbols are defined. They are added to the six existing rectangular formats and follow the same encoding rules. Up-dates of existing software to print or decode these new formats simply require the extension of existing tables according to the rules outlined in this specification plus one additional line of code in the symbol placement algorithm.

## Document History

Version	Date	Person	Changes
1.0	2014-09-22	Harald Oehlmann	First version
1.01	2015-04-23	Harald Oehlmann	Corrected for Matrix Size 24x64: Total Error Codewords from 56 to 46 (Table 1). Added description of symbol character placement algorithm extension in section <b>Fehler! Verweisquelle konnte nicht gefunden werden.</b> and appendix A. Removed Size 12x48 as it would need additional changes to the symbol character placement algorithm.