

# Product Portfolio

R.A.M. GmbH



english



# R.A.M.

R.A.M. Realtime Measurement GmbH was founded in 1988. So we have collected over 25 years of experience in the area of inspection systems.

R.A.M. GmbH will be supported by R.A.M. Kunststofftechnik GmbH, which is a 100% subsidiary and founded in 2001. This company focuses on consulting and sales activities of all R.A.M. products.

More than 350 inspection systems are currently successfully used. These systems save in manufacturing the quality of film, paper, nonwoven, plastic sheets and steel-plates (alloying).

Our software "CAMEN" (Computer Aided Manufacturing Environment) allows custom integration into existing machine structures.

Universal analysis tools enable the online analysis, alerting and analysis of post-production data. Our modular web inspection systems allow for easy expansion for growing requirements.



## Surface/Web Inspection Systems

## Thickness Measurement Systems

## Roll Hardness / Permeability

## Clock Reference Systems

***"Our systems and solutions are optimized in that way, to give you the best possible options.  
For your success!"*** Michael Winter, Sales



# Surface/Web Inspection

Our Surface/Web Inspection system detect, classify, document and record all optical defects in different materials and non-wovens with LED illumination technique.

All inspections system can be used for opaque films in light-field as well as for transparent films in dark-field inspection.

## Laboratory

ITG 500 Bench



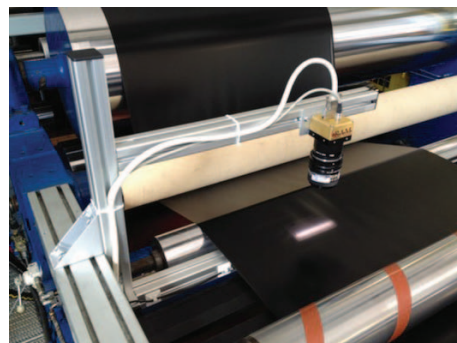
ITG 500



## Opacity / Haze

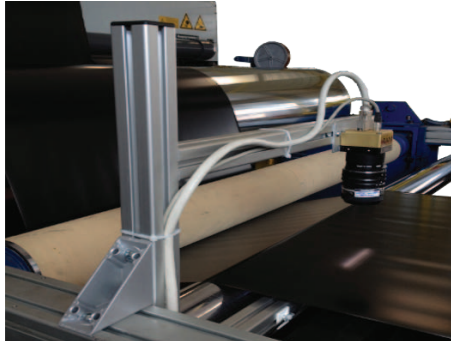
OPS 400 (integrated, e.g. in FIS 1000)

OPS 401 (standalone)



# Production

ITG 600



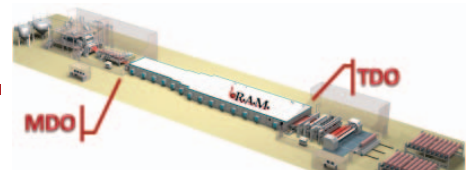
ITG 700



FIS 1000



FIS 1000 biax



For a more detailed description of our surface/web inspection systems please have a look to our separate brochures for each single product.

In case you don't have it available, we will send them to you.  
Just give us a short call:

**+49 (0) 6145 / 93 56 - 0**

or send us an eMail:

**info@ramgmbh.de**

Alternatively it is also possible to download all brochures in PDF format from our Homepage.

Just go to the Download Area (Service => Download) of our Webpage:

**<http://www.ramgmbh.de>**

# Line Cameras

The line camera RAM-CAM series has a variety of high-performance modules with 60 – 820 MHz frequency processing.

The resolution of the RAM-CAM series starts at 2.048 pixels in CD (Cross Direction). Higher resolution row headers are available from 4.096, 8.192 to 16.384 pixels. Thus, at the 4.096 line camera sampling rates from 20.000 to 100.000 lines / sec can be achieved easily. This allows a high resolution in MD (Machine Direction) at high production speeds.

The calibration procedure allows the minimizing of the edge distortion at long lines. In connection with the process control software CAMEN the line camera can generate and process up to 256 thresholds. This allows a manufacturing of web goods with an optimally tuned defect detection.

Only the relevant information and missing parts of the manufacturing process will be recognized, analyzed and displayed. The compact design of the line camera allows an optimal modularity. Camera head and processing unit are cooled passively via the side-mounted heat sink.

This robust line camera in the stainless steel design can be used in normal ambient temperature up to 50°C. In addition it is possible to compensate higher ambient temperatures by air and / or water cooling.

Our Line cameras are available with the following camera heads (extract):

Camera	Pixel	Lines per second	shortest Exposure	Speed
RAM-CAM-2k240 RAM-CAM-2k440	2.048	40.000	25 µs	82 MPixel/s
RAM-CAM-2k4100	2.048	100.000	10 µs	205 MPixel/s
RAM-CAM-4k220 RAM-CAM-4k420	4.096	20.000	50 µs	82 MPixel/s
RAM-CAM-4k4100	4.096	100.000	10 µs	410 MPixel/s
RAM-CAM-8k240 RAM-CAM-8k440	8.192	40.000	25µs	320 MPixel/s
RAM-CAM-8k280 RAM-CAM-8k480	8.192	80.000	13 µs	640 MPixel/s
RAM-CAM-16k240 RAM-CAM-16k440	16.384	40.000	25 µs	640 MPixel/s



**RAM.**



# Software

## l.CAMEN.

Our Software CAMEN is build to integrate our System in customer machines and will be the user interface for our system.

The advanced software allows the operator to analyze the role of quality and print quality and trend logs of roles. On the role protocols are the roles or benefit number, the number of voids / pinholes or per square meter, the error classes sorted by size and location of the defect (in the machine direction and cross machine direction). Furthermore, using a series of benefits to be specified and the system prints out an additional benefit / average quality-related protocol. On a defect wallpaper (MAP), the defects in the role are represented symbolically. It is about the defect true gray-scale images, the position in the running and cross direction and the roll number.



## l.P.A.T. / l.v.STAT

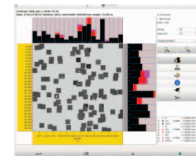
RAM-PAT or the newer version vSTAT is a post process analysis tool is the ideal complement to our web inspection systems for quality film production.

Features:

- Evaluation of product quality in the workplace
- History analysis of production trends or specific production parameters
- Process and manufacturing analysis
- Access to production data via network
- Access to external data

System requirements:

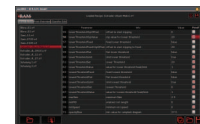
- Windows 7, Mac OS X 10.9, Linux with Desktop (other versions on request)
- screen resolution min. 1024 × 768 (recommended)
- at least 2GB of memory (8GB recommended).



## l.r.a.m.R.E.D.

ramRED is a Recipe Editor. Copy your Recipes easily from system to system and edit it on your office computer.

- Offline Recipe Editor
- Print Recipe Settings
- View actual Settings
- available for Linux, Windows® and Mac



# Industrie 4.0 - plastPMS

A networked world also has an impact on the manufacturing industry:

Without the networking of components and values, it becomes increasingly difficult for the manufacturing industry to produce economically. One way to manage this challenge is for example, to expand the manufacturing line to a smart factory with Industry 4.0, where production is virtually mapped and monitored.

Digitization helps manufacturing companies to manage the challenges of the highly competitive plastics market. This makes it possible for example, to make in its own production facilities maintenance more efficient. Because of **industry 4.0**, **internet of things** (IoT), **data mining** and **big data**, **predictive maintenance** becomes possible:

Machines automatically detect when maintenance is necessary - which significantly reduces support costs.

Furthermore, **predictive production** is also possible:

The prediction how the quality will change in the next few minutes during production and which countermeasures could be taken before failures occur and waste will be produced.

## Next Level Plastic Production



## Thickness Measurement

In cooperation with a strength partner, one of the world's leading providers of technology for thickness measurement in regard to film, metal and Nonwoven products we provide continuous and non-contact measuring systems for quality monitoring and automatic control of most flat material – production processes.

Thickness, grammage, edge reading, web width, surface roughness, fault detection, residual moisture ...

These production-relevant parameters are monitored and controlled safe and highly efficient.



# Roll Hardness

Roll hardness is a key parameter defining a good roll.

Identify problematic rolls easily using the mobile ACA RoQ Roll Hardness Profiler and avoid runnability issues.

Embedded touch screen, Wi-Fi and built-in barcode reader allow instant hardness profile displayed and versatile data handling possibilities as well.

The ACA RoQ analysis is not just a measure of roll quality, but also a great web quality tool.

Caliper variations are far too small to be picked up by online scanners or test labs. Hardness profile is an excellent indicator of paper or film material being level enough to be wound up.

## Technical Data

### ACA RoQ

Display: 4,3" Touch Screen

Connections: WLAN / WiFi  
USB

Battery: Li-Ion 45000 mAh

Charging: per USB Port

Dimension: 180 x 80 x 122 mm

Weight: 1,4 kg

Barcode Reader: Build-in camera

max. Profile resolution: 1 mm





# Permeability

## Online Air Permeability Analyzer

Most on-line instruments measure and control only one film property. In addition to final film porosity, which is an important property for some film grades, ACA Permi is a universal analyzer of film quality for most film grades due to the fact that almost all process parameters have a clear effect on porosity.

On the other hand, porosity correlates with almost all physical film properties. If porosity is constant, film process performs well and film quality is consistent.

With a fast ACA Permi porosity analyzer it is possible to improve the process so that basis weight and moisture controls work better and the fast peak-to-peak variation, which cannot be seen in the scanner measurement, is lower and thus runnability is better.



### Technical Data

## ACA Permi

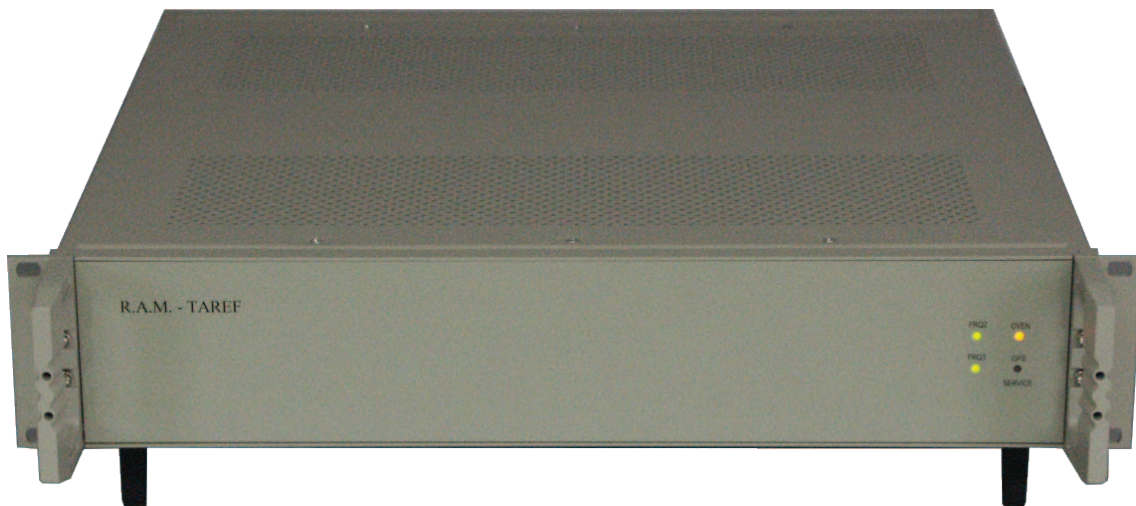
Dimensions (L/W/H):	Measuring unit: 630 x 200 x 200 mm Control unit: 600 x 400 x 200 mm
Measurement type:	continuous measurement 80.000 Measurements - 3200 m
one Measurement:	2ms - 0,04m
Output:	2-wire, 3 outputs, 4-20 mA & Ethernet
Measuring Range:	0,02 - 12.000 l/m <sup>2</sup> /s Bendtsen = 1 - 50.000 ml/min Coresta = 1 - 40.000 Cu Gurley = 0,02 - 6.000 s Others are available on request .
Weight:	Measuring unit: 13 kg Control unit: 20 kg
Power Supply:	100 - 240 VAC, 50/60 Hz / 24 VDC 2A
Air Supply:	6-10 bar, 200 l/min, clean and dry air



# TAREF

The TAREF product family delivers highly accurate frequencies with the long-term stability of cesium standards.

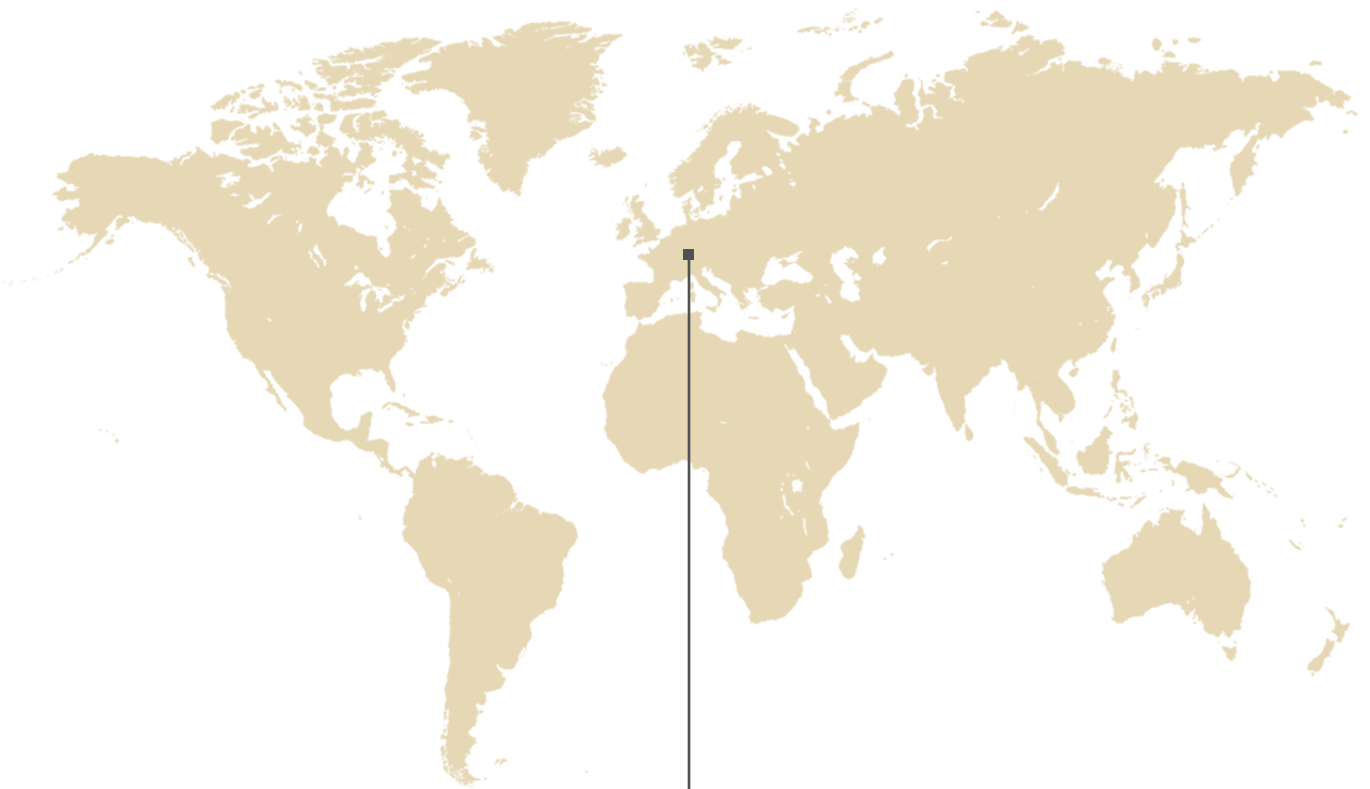
TAREF is an accurate and independent T3 master clock source for multiplexer systems, telecommunications equipment, radio transmission links, PCM use the GSM network, ATM network, E-network or SDH / SONET applications.



***"Our aim is to assist our customers with all of our knowledge and help you to improve your production results. We will not leave you alone!"***

Dipl. Inform. Thorsten Weidenfeller, CTO





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