

METIS

HIGH QUALITY SCANNERS

2D/3D SCANNERS FOR:

DECOR INDUSTRY

CULTURAL HERITAGE

PRINTING INDUSTRY

CERAMIC INDUSTRY

PRODUCT DESIGNERS

GAME DEVELOPERS

OTHER CREATIVE PEOPLE...

LET'S PLAY WITH LIGHT

METIS TECHNOLOGY

Scan Director

Light Inspector

Color Profiler

UNLIMITED RESULTS FROM JUST ONE FILE

SUPERSCAN MODE

CHANGE THE VISUAL APPEARANCE AFTER SCANNING - NO NEED TO SCAN AGAIN

RESULT OF REAL SCANNED DATA

NATURAL LOOK

NOT ARTIFICIALLY CREATED

FOR MULTI GLOSS EMBOSING

REAL GLOSS

FOR 100% REPRODUCTION

CHANGE THE WORKFLOW INTERNALLY

LIGHT INSPECTOR

BRINGS THE CREATIVE PART BACK TO THE CREATIVES

STABLE IN HARD ENVIRONMENTS

STRONG SYSTEMS

DESIGNED TO LAST OVER TIME

e.g. LASER ENGRAVED EMBOSING ROLLERS

3D DEPTH MAP

GENERATING, CONTROLLING, SLICING

INTERNALLY OR EXTERNALLY AS PART OF AN INDUSTRIAL CHAIN

IMPROVED WORKFLOWS

OPTIMIZED FOR VARIOUS APPLICATIONS LIKE ENGRAVING

EASY TO USE - THE SCANNING SYSTEM IS YOUR EXPERT

COMPLETELY AUTOMATED

CHANGE THE LIGHT WITHOUT THINKING ABOUT EXPOSURE, CONTRAST, GREYBALANCE

USER FRIENDLY INTERFACE

EASY TO LEARN

COMPATIBLE WITH ALL METIS SCANNERS

ALWAYS THE BEST COLOR ACCURACY

FULL ICC

INPUT / OUTPUT / CUSTOM COLORS / DISPLAY

THOUSANDS OF VISUAL APPEARANCES

REALTIME EDIT

SELECTION OF DIFFERENT LIGHT COMBINATIONS

SEE ALWAYS YOUR CHANGES AND SWITCH BETWEEN PRESETS

REALTIME 2D/3D PREVIEW

ALSO IMPORT A RETOUCHEDE DEPTH MAP FILE e.g. FROM PHOTOSHOP

UNIQUE FEATURES



1975 - Start operating in the digital imaging domain for remote "sensing" applications from Landsat satellites (NASA/Telespazio)

ABOUT METIS

At METIS we continue a family tradition of industrial designers that started almost one century ago. This translates into high engineered and innovative products with unique characteristics and performances always at the top respect to most advanced technology.

All of our scanners, our software and every accessory are designed entirely in-house, utilizing the latest technologies and most exacting standards to meet not only current but any future needs the market might demand.

METIS is the leader in the Industrial and Cultural Heritage markets and in the last years, thanks to the great success of our patents and the extraordinary "METIS Photometric Stereo 3D" application in the surface scanning, became the undisputed point of reference for a sight into the future of digitization.

The passion for and dedication to what we do is the road-map that guides every step of our experienced team.

METIS has operations internationally, with customers ranging from the most important decor industries to designers and other creative people.

METIS Headquarters are in Rome, Italy. Our main manufacturing center is located in Tuscany.



SynchroLight on a DRS 2000

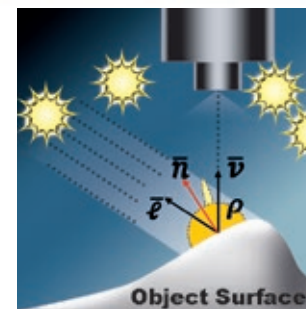
METIS Synchronolight evolution

The history of "Synchronolight" begins in 1998. METIS was the first to apply synchronized light-blades on large scanners. This method was already used in photocopiers (e.g. Xerox) but never applied to large reproduction systems. In the same year METIS registered the domain name "synchronolight.com".

Thanks to the experience gained, in 2009 we designed an innovative lighting system called "DC Synchronolight" and filed a related patent on January 2010. This solution paved the way to calculate the height of the materials reliefs to be reproduced using the "Photometric Stereo" method.

In 2014, the new method "METIS Photometric Stereo 3D" was a concrete and efficient reality and, to use all its potential, we further developed the lighting system and filed a second patent in the same year. This evolution represents the unsurpassed state of the art of lighting devices for scanners based on linear sensors.

In 2017, to allow the creation of compact scanners based on matrix sensors, we created a lighting system based on illuminators with dynamic cycles of light modulation. We also filed a patent for this important innovation.



METIS 3D Calculation

METIS Photometric Stereo 3D

In 2009, we developed an evolution of the lighting system of our scanners in order to improve the quality of the images and the emphasis of 3D appearance. On January 2010, the related patent has been filed.

Subsequently, this new system combined with a specific software would have allowed to record the height of the reliefs of the surfaces as an alternative

to laser or confocal systems. To this end, we discarded the "Stereoscopic" method due to its evident insufficiency and decided to develop the "Photometric Stereo" method.

This method, known since 1980s, has never been applied to a scanner due to its complexity. Starting from its basic principles, between 2010 and 2014 we developed **new and exclusive mathematical algorithms**. Thus the "METIS Photometric Stereo 3D" was born.

Since 2014, METIS scanners quickly provide all the infinite combinations of light, 3D data, gloss, etc., in a completely automated way and without the need for an expert user. Moreover, Color and 3D information are available almost at the same time and match at pixel level.

METIS scanners are the most advanced choice for decor industries and creatives.



Part of the user interface

METIS SuperScan Mode

The SuperScan is a sophisticated but completely automated acquisition mode, uniquely available in METIS scanners which consist in scanning the original several times (from 2 to 6 passes are required depending on the original type and application). During the SuperScan passes, light direction and intensity is finely modulated and all possible light schematics are saved into a single proprietary file with extension .MDC.

The additional information provided in the MDC file allow:

reprocessing the light schematic at any moment with our Light Inspector Software; calculation of a reflectivity map - obtained from scans with different lighting - which allows dealing with reflections and shadows in the images; Use of this purely photographically obtained "Highlights & Shadows" information for combining them with the color information, to achieve absolutely natural and even more three-dimensional look; extrapolating 3D surface information for generating a Depth and a Glossy Map that can be used for 3D printing/engraving/visualization.

Optional, the Light Inspector Software is also available as standalone version. This brings the creative part back to the creatives and can optimize your workflow.



Scan Director INPUT



SCAN with 16 Bit per channel

- Compatible with all METIS scanners
- Completely automated exposure, contrast, greybalance
- Completely customizable
- Smart Batch Scanning
- Acquisition modes: PreScan, Scan, SuperScan and Direct SuperScan
- Advanced ICC Profile Integration

Set-File

- Presets for Output
- Used also for "Direct SuperScan" mode

Scan Director OUTPUT

MDC-File

- 16 Bit per channel
- up to 48 GB
- from "SuperScan" mode
- Incl. "Highlights & Shadows"

Greyscale/RGB Tiff

- 8 / 16 Bit or 24 / 48 Bit
- from "Scan" mode
- from "Direct SuperScan" mode

Light Inspector INPUT

MDC-File

- 16 Bit per channel
- up to 48 GB
- from "SuperScan" mode
- Incl. "Highlights & Shadows"
- Change the light at any time

Set-File

- Presets for Output
- Used also for "Direct SuperScan" mode

Light Inspector OUTPUT

Relief

- 8 / 16 Bit Greyscale
- Incl. "Highlights & Shadows"
- Natural Appearance
- Play with the light for different visual Appearances

3D Depth

- 8 / 16 Bit Greyscale
- for Engraving, 3D-Printing, Visualization

Set-File

- Presets for Output
- Used also for "Direct SuperScan" mode

Glossy

- 8 / 16 Bit Greyscale
- for Engraving, 3D-Printing, Visualization

Greyscale/RGB Tiff

- 8 / 16 Bit or 24 / 48 Bit
- from 1 SuperScan unlimited visual appearances possible
- change the light after scanning

PBR Maps

- 8 / 16 Bit Greyscale
- 24 Bit RGB
- Diffuse Color Map
- Specularity Map
- Bump / Displacement / Normal Map

METIS Scan Director Software

Specifications:

- Full 64 Bit architecture (OS Windows 10 Prof. 64 Bit)
- Workstation based on CPU Intel i7, SSD unit, RAM 32GB
- Compatible with all METIS DRS-DCS and METIS PM3D scanners
- Image processing is always 16 Bit per channel; can scan very large files (up to 48 GB in METIS MDC SuperScan format)
- Acquisitions modes: PreScan, Scan, SuperScan, Direct SuperScan
- New "high dynamic" and "low noise" modes
- Bidirectional scanning and customizable prescan limits
- OverSampling scanning option
- Completely automated exposure, contrast, greybalance handling
- Advanced ICC profile integration (full ICC support); METIS Color Profiler software is also available as standalone version
- Includes specific tools aimed to set METIS scanners according to FADGI and METAMORFOZE guidelines

Features:

- Can output color (24/48 Bit) or greyscale (8/16 Bit)
- Powerful automatic or custom greybalance
- New autoexposure / autolevel tool with customizable black/white point target values

METIS Light Inspector Software

(Software integrated but also available as standalone version)

General Features:

- All information related to a specific scanned original are contained into a unique file (the MDC file), avoiding the risk related to having a spread set of data
- Can run as a standalone. Optional additional licenses of the Light Inspector software allow processing MDC files on a different workstation (e.g. in the Design Department) leaving the scanner always free to acquire new originals
- Can preview, edit and optimize very large MDC files (even >20GB) in almost real time
- Can process even the largest MDC files in a matter of a few minutes
- Full ICC profile support for accurate color management (preserve correctness of scanned data and visualization over a calibrated display)
- Workflow optimized for various applications: Traditional Engraving (milling, etching, laser) // Ceramic // Flooring // Wallpaper // Textile // Fine Art Reproduction // PBR Physically Based Rendering

Specific Features:

- Can provide thousands of different Visual Appearances through the selection of different light combinations. Providing always natural

appearance as the different lights are the result of real scanned data and not artificially created. Some examples are:

- Flat appearances (with low or high reflections)
- 3D appearances from various directions and with customizable intensity
- Can minimize or maximize reflections
- Can extrapolate a glossiness map for various uses:
 - Used as a spot channel in printing applications (for adding special inks or finishing varnishes)
 - Used as a gloss layer for top laser engraving applications
 - Used as a Specular Map in PBR applications (Physically Based Rendering)
- Can Extrapolate a Normal Map for PBR applications (Physically Based Rendering)
- Can Extrapolate a 3D Depth Map for various uses:
 - Traditional Engraving / Etching (Milling, chemical, laser)
 - Digital Embossing (Multi-Pass and Single-Pass)
 - Used as a Bump Map or displacement map in PBR applications (Physically Based Rendering)
- Can optimize 3D Depth Map for the different uses with many different options:
 - Very powerful flattening filter for optimizing and minimizing the embossing thickness for specific requirements
 - Manual and automatic optimization of 3D limits
 - Roughness control
 - Various output selectable: 16/8/1bit including slices
- Real Time 3D Preview of 3D settings for visual evaluation including glossiness simulation
- Can save all settings and preferences into a reusable profile that can be applied to different MDC files

Additional Features:

- Batch processing of different MDC files using a custom created profile
- Very powerful Stitching tool allows to scan a large/long original (exceeding the scanner size) in multiple parts and automatically stitching all color/glossiness/3D information at once and maintaining perfect register between the different layers
- Possibility to reimport a Depth Map file (TIFF file) for further evaluation and optimization. This is useful when Depth Map need first to be retouched in third parties software
- Optimized output for post-processing in specialized software (e.g. AVA AVACADCAM)

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