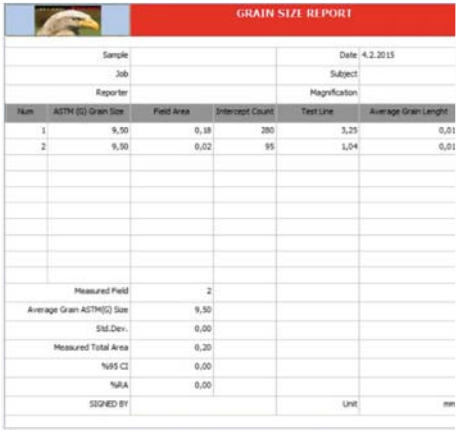
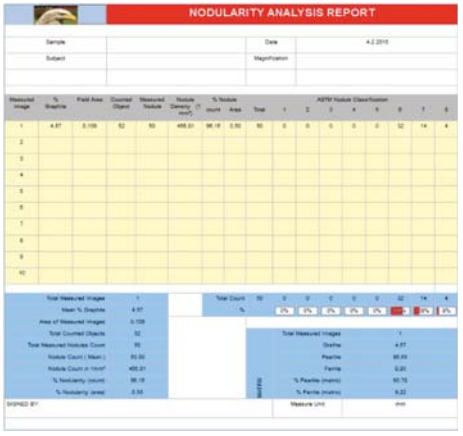
Kameram CMOS
Kameram CCD

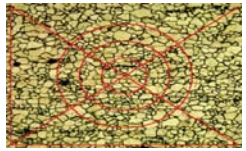
	Kameram 1080 PW	Kameram 5	Kameram 21	Kameram 2C/M	Kameram 12
Maximum Resolution*	2 megapixel 1920X1080	5 megapixel 2592X1944	21 megapixel 5140X4126	2 megapixel 1632X1228	12 megapixel 4140X3105
Sensor Type	cmos	cmos	cmos	ccd	ccd
Sensor Size	1/2,5 inch	1/2 inch	1/2.3 inch	2/3 inch	1/1.8 inch
Pixel Size	2,2μ X 2,2μ	3,2μ X 3,2μ	1,4μ X 1,4μ	6,45μ X 6,45μ	2,77μ X 2,77h
Efective Pixel	1920X1080	2048X1536	4096X3288	1360X1024	2592X1944
ROI Capture	√	√	√	√	√
ROI White Balance	√	√	√	√	√
ROI Exposure	√	√	√	√	√
Frame Rate	25 fps 1920X1080	8 fps 2048X1536 22 fps 1024X768 43 fps 680X510	1.8 fps 4096X3288 10 fps 2048X1644 27 fps 1024X822	15 fps 1360X1024	4 fps 2592X1944 35 fps 300X200
Microscope Interface	c-mount	c-mount	c-mount	c-mount	c-mount
Bit Depth (RGB each color)	12 bit	10 bit	12 bit	12 bit	12 bit
ARGA Image Process	√	√	√	√	√
Video Capture	√	√	√	√	√
Other Standart Specs.	Time Lapse Imaging / Live Image Measurement-Draw Line-Arow-Focusmeter Automatic Calibration / Multi Language Options / Live Support				
Optional Modules	Comet Assay / Halo Assay Measurements Module Karyotyping Analysis Systems				
PC Connection	USB 2.0 WIFI	USB 2.0	USB 2.0	USB 2.0	USB 2.0
Systems Requirements	CPU: Min 4 core Intel i7 4GB RAM Storage: Min 250GB HDD Monitor: Min 1280 x 1024 resolution Min 2x USB 2.0 Operating System: XP PRO, WIN7, WIN8 HOME/PRO				

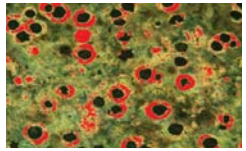
*interpole mode

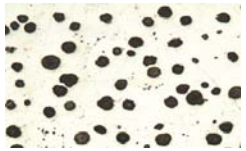
KAMERAM CUSTOM DESIGN SAMPLE REPORT PAGES











Kameram

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Kameram

INDUSTRIAL MICROSCOPY SOLUTIONS

Kameram TM 500

Kameram TM 1000

Kameram UM 1000

Kameram SMD 50 LED

Kameram SM 45 LED

Specification

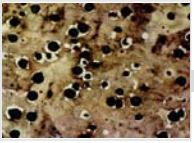
KAMERAM TM500 Inverted Metallurgical Microscope		
Head	Siedentopf Trinocular viewing head, 30° Inclinded, Adjustable Interpupillary Diopter Adjustable	
Eyepiece	Extra wide field Eyepiece WF10x/18	
Objective	Plan Achromatic (No cover glass)	5X/0,12 WD 10X/0,25 WD 20X/0,40 WD 50X/0,65 WD
Nosepiece	Quadruple (Ball bearing inner locating)	
Stage	Double Layer Mechanical (Size 180mmx150mm moving range 15mmx15mm	
Focusing	Coaxial Coarse and Fine Focus System, with tensional adjustable and up stop, minimum division of fine focusing: 2µm	
Filter	Blue Filter, Dia.32mm Yellow Filter,Dia.32mm	
Polarizing	Polarizer AnalyZer,360° Rotatable	
Illumination	6V/20W Halogen lamp, brightness control	

KAMERAM TM 1000 Inverted Metallurgical Microscope		
Compensation Free Trinocular Head, 45° Inclinded, 360° Rotatable, Interpupillary Distance 54~75mm, Diopter Adjustable, Light Split: binocular:trinocular=80%:20%		
High Eyepoint Plan PL10x/22mm,		
Long Working Distance Infinity Plan Metallurgical Achromatic	LMPL5X/0.15 WD10.8MM LMPL10X/0.3 WD10MM LMPL20X/0.45 WD4MM	
Long Working Distance Infinity Plan Metallurgical Achromatic, Semi-APO	LMPL50X/0.55 WD7.9MM LMPL100X/0.8 WD2.1MM	
Quintuple Nosepiece		
Fixed Working Stage, Size 175*145mm, Retangle Plate with Mechanical Mobile Ruler, Moving Range 120*78mm, with Stage Extention Plate,		
Metal Plate, Center Hole Dia.12mm		
Low Position Coaxial Coarse & Fine Focusing, Coarse Focus Range 38mm, Fine Focusing Precision 0.002mm, with Tension Adjustment		
Blue Filter, Dia.32mm		
Yellow Filter,Dia.32mm		
Polarizer		
Analyzer,360° Rotatable		
Reflect Kohler Illumination, with View Field Diaphragm, with Iris Diaphragm, Center Adjustable, 12V50W Halogen, Brightness Control		

Kameram UM 1000 Upright Metallurgical Microscope		
Siedentopf Trinocular viewing head, 30° Inclinded, Adjustable Interpupillary Distance 48mm -75mm, Diopter Adjustable		
Extra wide field Eyepiece EW10x/22		
Infinite Plan Achromatic (No cover glass)	5X/0,12/∞/(BF)WD15,5mm 10X/0,25/∞/(BF/DF)WD10mm 20X/0,4/∞/(BF/DF)WD4,3mm 50X/0,75/∞/(BF)WD0,32mm 100X/0,8/∞/(BF)WD2mm	
Backward Quintuple Nosepiece		
Double Layer Mechanical Stage, Size 186*138mm/74mmx50mm		
Specimen Preparation Plate/ Slide Glass		
Coaxial Coarse and Fine Adjustment, Fine division 1micron Precision, moving range 30mm		
Blue Filter, Dia.32mm		
Yellow Filter,Dia.32mm		
Polarizer		
Analyzer,360° Rotatable		
Transmitted light 24V/100W Halogen light and aspherical condenser		
Incident light 24V/100W Halogen light, lightness adjustable aspherical condenser Kohler		

Specification

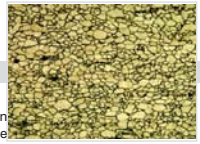
	Kameram SMD50LED Zoom Stereo	Kameram SM45LED Zoom Stereo
Head	Trinocular Viewing Head, Inclined at 45° Interpupillary Distance :55-75mm	Trinocular Viewing Head, Inclined at 45° Interpupillary Distance :55-75mm
Eyepiece	Extra wide field eyepiece EW10x/22	Extra wide field eyepiece EW10x/20
Zoom Objective	0.8x-5x	1x-4,5x
Zoom Ratio	1:6.3	1:4,5
Working Distance	115mm	97mm
Glass Insert	Glass Insert, Diameter 100mm	Glass Insert
Light Track Stand	Incident Illumination 100V-240V/ LED Transmitted Illumination 100V-240V/ LED Travel Lenght:100mm B/W Plate Dia:100mm, Thickness: 2mm Base Dimensions: 285x240x40mm Height: 340mm	Incident Illumination 100V-240V/ LED Transmitted Illumination 100V-240V/ LED Travel Lenght:100mm B/W Plate Dia:100mm, Thickness: 2mm
Stop Click	Stop click for each magnification	



Graphite Nodules or Flakes Module:
Kameram software automatically measure nodular graphite according to ASTM A247. Software also find automatically % graphite, Nodul density in 1mm² and Nodularity (area and count). Nodular graphites classified andcolored by Kameram software 1 to 8 after their sizes and classes measured according ASTM A 247. Software also find automatically the number andratio of nodular graphite of each class of 1 to 8. Offcourse, software can calculate of Ferrite&Perlite Matrix %. All measure ments and datas automatically send a report page. You can collect data of your measurements in a single report page and find total statistic of your measurements in two or more pictures.

ASTM Grain Size Module:
Kameram software automatically finds intercepts of grain borders on your steel sample and measure grain size according to ASTME 112. Grain Size can be automatically calculate as horizontal, vertical, diagonal or circles interception methods. Software automatically count ASTM Grain (G) value. As necessary in ASTM,software also find %95 CI ve %RA value to show reliability of your measurements. All measurements and datas automatically send areport page. You can collect data of your measurements in a single report page and find total statistic of your measurements in two or more pictures.

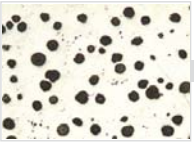
Capture



Analysis

Coating Interface Measurements
Add Text & Marker Arrow and Calibration Scale:
You can easyl put a Calibration Scale on your image. It is also easy to add description text or put marker arrow on your image. It is possible to save your image with test results and F1 icon opens to users manuel to help you in your measurement proccess. Manually measurements alsa include as standart tools for all Kameram products , line, area , angle , radius etc.

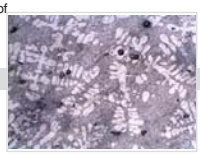
Weld Measurement:
The Weld Measurement is designed to provide quick and easy measurement of weld dimensions usingan interactive filar method. It is easy to measure depth of weld, penetration, thickness and all legs length , the results be printed or saved to a file using standard Excell commands.



Sphericity Module:
Kameram software Calculate the percent of particles which are spheritized (rounded) using shape factor. Kameram software automatically count Sphericity %, Non-Sphere and Sphere of your Nodular Graphite according ASTM A 247. Value of shape factor is 0,6 and it can be set as your request.

Phase Analysis (%) Module :
It is easy to select each phase by threshold bar method then Kameram Software finds and measure automatically % phase of your metallurgical sample like Ferrite,Pearlite and Graphite.

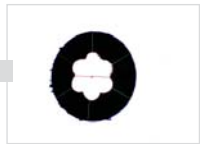
Partical Size & Pore % Module :
Kameram software can automatically find and count micro objects or pores on your sample. Pores or parts can be select by threshold bar and count simply mouse click. Test results can be classify according radius and diameter(max.) and then software create partical distribution table. Each range colored in a different color . It is easy to send measurements to Excell. You can collect data of your measurements in a single table and find total statistic of your measurements in two or more pictures.

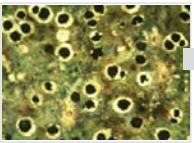


Brinell Hardness Measurement Module:
Brinell hardness for image analysis is based upon the ASTM E10-98 . The program includes controls for measuring brinell indentations and calculating the brinell hardness number. Test results are written to a spreadsheet report as excell file .

Knoop & Vickers Hardness:
Automatically measure and calculate Knoop and Vickers hardness values by ASTM E384 indent diagonal method. Use this tool with any standard microhardness indenter.

KABLOM / Cable Crosssection Measurement Module:
High-resolution cable cross-section inspection and measurement module are designed to carry out automatic high-accuracy measurements of multi-strand cables. Measurements include: Insulator thickness over every outer strand , Minimum insulator thickness ,Cable outer diameter, Inner diameter , DIN 72551 T5 standard ID / OD concentricity, Insulator area and eccentiric difference. All of these results are obtained by one Mouse click, in just a seconds. The system can accommodate cables up to 24 of strands. Kameram software has a very simple and intuitive interface. You can use it to quickly and easily compute statistics, All measurements and datas automatically send a report page which has your company logo .





Report