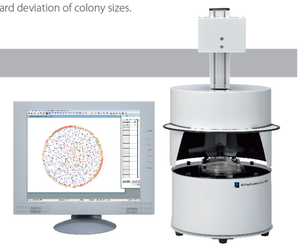
规 格 Specifications

型 号 Model number	PSF-3000	PSF-2000	PSF-1000
主机尺寸 Dimension of main unit	约 W280×D320×H620 Approx. W280×D320×H620		约 W300×D350×H620 Approx. W300×D350×H620
重 量 Weight	主体 : 约 17Kg Main unit: Approx. 17 kg		主体 : 约 15Kg Main unit: Approx. 15 kg
电源 AC100V Power source: AC 100V	50 ／ 60H z		
系统配置 System configuration	菌落计数器主机、数据处理电脑 (选配)、17 寸显示器 (选配) Main unit, Desktop PC for data processing, 17-inch monitor		
工作环境 Operation environment	温度 10℃～ 35℃、湿度 20%～ 80% 10-35℃, 20-80% humidity		
相机分辨率 Resolution performance of a camera	150 万像素 CCD 相机 1.5 million-pixel CCD		130 万像素 CMOS 相机 1.3 million-pixel CMOS
相机规格 Specifications of camera	彩色 Color camera		
计测对象 Measurement object	培养皿菌落 Viable bacteria colonies on a petri dish		
培养皿尺寸 Size of a petri dish	90mmφ以下 90 mm diameter or less		
计测尺寸 Measurement size	0.1mm ／ 90mm 视野 0.1mm per 90 mm-viewing field		
计测时间 Measurement time	约 1 ～ 3 秒 / 培养皿 Approx. 1 to 3 seconds per petri dish		
最大计数数量 Maximum number of counts	细菌菌落:约8000 个 Approx. 8000 viable bacteria colonies		
照明方法 Lighting method	暗视野、明视野、圆顶侧光照明、顶测光照明 Dark field, bright field, dome side light, top side light		暗视野、明视野、圆顶侧光照明 Dark field, bright field, dome side light
计测分析软件 Measurement & analysis software	菌落仪计数软件和通用画像处理软件※1 Colony counter software and general-purpose image processing software	菌落计数软件 Colony counter software	
	计测结果表示 Measurement result indicator	菌落数量:个数 Number of viable bacterial colonies	计测区域:区域直径 Diameter of measurement area
	2值化手法 Selection of binarization methods	手动2值化、自动判别分析2值化、色调提取2值化(4色) Manual binarization Binarization for discriminant analysis Binarization by color extraction (4 colors)	
	2值化前处理 Preprocessing for binarization	亮斑修正(培养基有亮斑时选择) Correction of unequal brightness (To be selected in the case of unequal thickness of culture medium)	
	按大小甄别计数(选择) Selection by size (Options available)	按菌落直径大小选定计数范围 Determines the range of target viable bacteria colonies for measurement according to the colony size.	
	按圆形度甄别计数(选择) Selection by the degree of circularity (Options available)	排除线状的异物、痕迹等,确定计数范围 Determines the area to exclude from the measurement of linear kint, scar, etc.	
	重叠分离处理(选择) Separation of overlapping colonies (Options available)	对重叠粘连的菌落进行自动分离,并选择是否计数 Determines whether or not to automatically separate and measure overlapping colonies.	
	计数参数的保存 Save procedure	对各种菌落的计数参数进行保存,方便日后一键作用 Saves the procedure set for each colony specimen type.	
	手动计数补正 Auxiliary measurement capability	自动计数后,对计数结果进行手动补正 Counting error of automatic measurement of colonies can be manually added or subtracted.	
	计数标记显示 Indication of count mark	菌落图像上的计数标记可作显示或不显示的选择 Checks the existence of small colonies by switching the display / non-display of a counting mark on the colony image.	
	图像保存 Image saving	原图像、带计数标记的图像 Original image, Image with a measurement mark	
	螺旋平板计数 Spiral count	按螺旋平板法作成的菌落进行计数 Counts the number of colonies by the spiral method.	
	数据输出、保存 Data output / saving	可保存至Excel、txt文档 Output to a spreadsheet / Save in a text format	
	再计算 Recalculation	可调出已保存图像进行再计算 Recalculate by retrieving saved images	
选配 Option	软件:抑菌圈计测软件、Ames试验用软件(仅限PSF2000)、特别订制软件、PSF-3000用顶侧光照明。 Software: Inhibition zone measurement software, Ames testing software (PSF-2000 only), Custom-made software, Top side light for PSF-3000		

※1使用通用画像处理软件,可以计算菌落的面积,菌落的平均大小等其他目的的检测。如果您需要了解更多,请来电询问。

Note 1) By using general-purpose image processing software, a wide variety of measurement patterns are available such as average or standard deviation of colony sizes. Please contact us for details.

产品整容 Product lineup



自动菌落计数仪

Automatic Colony Counter

PSF-1000

PSF-1000 型是把菌落计数仪必要的功能精练集合在一起的一款机型，是一款性价比很高的型号。

PSF-1000 is a low-cost colony counter with minimum necessary functions for measuring colonies.

安全注意事项 Safety precaution

□请在仔细阅读产品使用说明书之后,使用本产品。
□规格以及外观的改良有可能不做事先通知。
□本产品目录和实际产品的颜色因印刷关系,可能会有异同。

□Make sure to read the instruction manual carefully before use.
□Specifications and appearance of the product may change due to further improvement without prior notification.
□The actual color of the product may be slightly different from the printed picture in this catalogue.

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爱史科电子贸易 (上海) 有限公司
SK-Electronics Shanghai Co.,LTD.
200336 上海长宁区古北路 666 号嘉麒大厦 1503B
TEL.86(21)6125-0108 FAX.86(21)6125-0109
【生产商】
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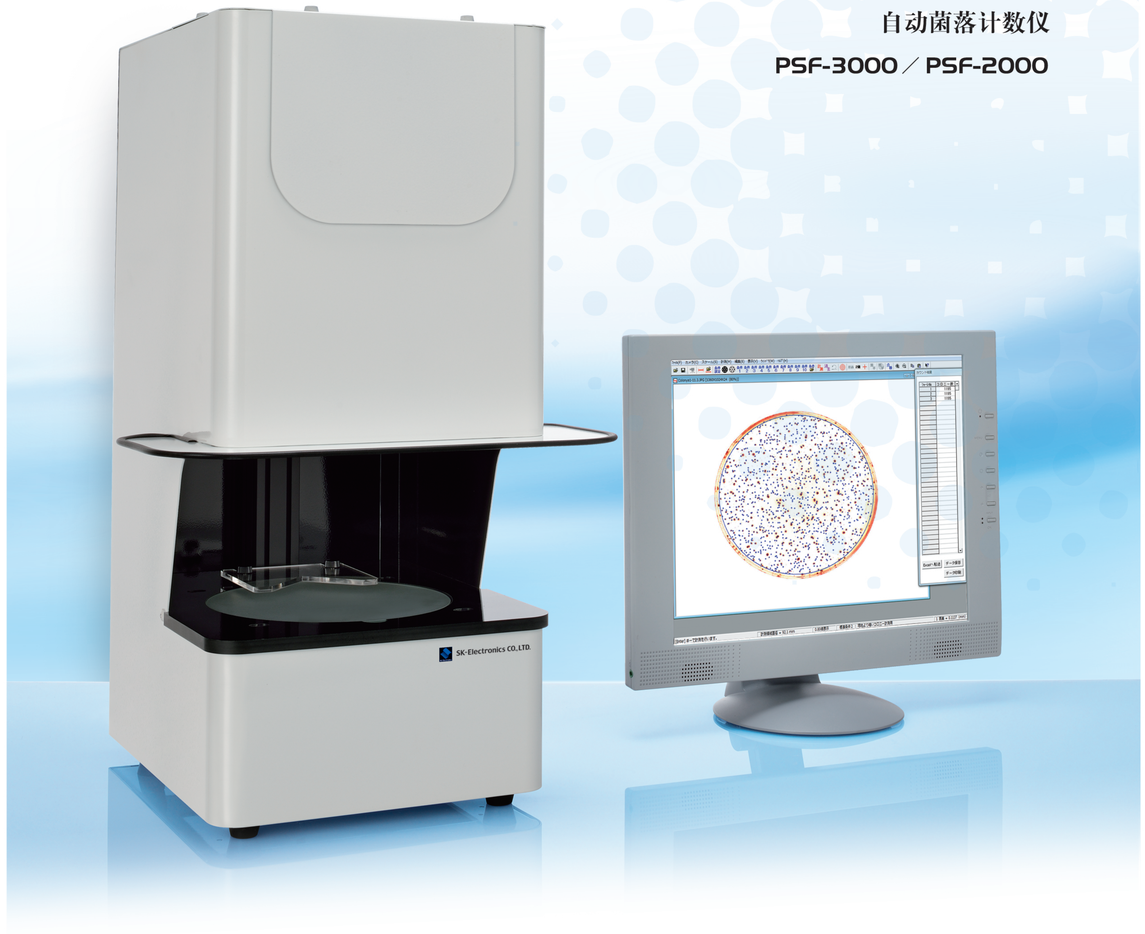
Creation&Harmony

SK-Electronics CO.,LTD.

Automatic Colony Counter

自动菌落计数仪

PSF-3000 ／ PSF-2000



瞬时、高精度、简单地实现菌落检出和计数,避免繁琐的人工操作。

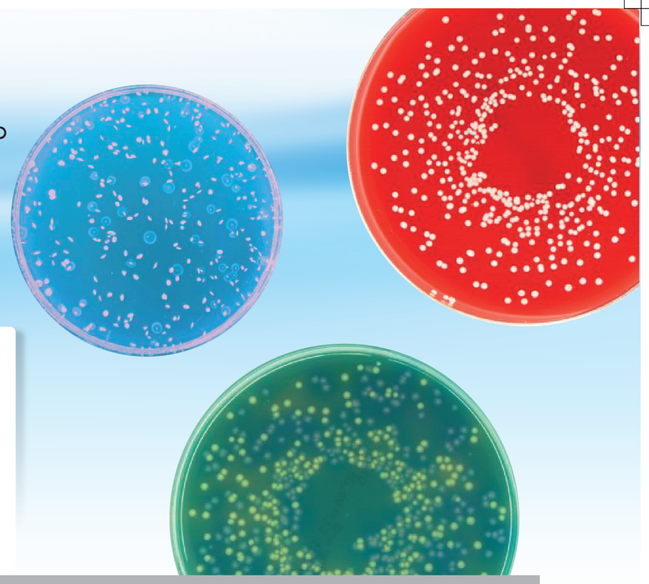
Instantly measures the number of colonies in a sample with a high degree of accuracy.

对应中国语・日语・英语
For Chinese,Japanese and English

即便是不鲜明的菌落，即使培养基厚薄不均、亮斑差异，也能高精度的计测菌落数。

对应涂布(Spread)平板、倾注平板、螺旋平板、Ames测试、抑菌圈平板等各种计测。

It enables highly accurate measurement even in the case of an unclear colony image the or a culture medium of unequal thickness.
This versatile counter is applicable for spread culture media, pour culture media, spiral culture media, as well as plaque and inhibition zones (optional).

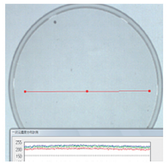


特 点 Features

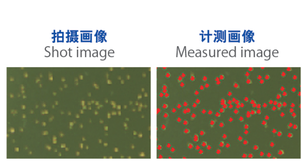
- 独有的照明手法，实现高精度计测。
  Our unique lighting technique enables measurement with a high degree of accuracy.
- 可对重叠的菌落进行分离计测。
  Overlapping colonies can be measured separately.
- 可同时识别、计测四种不同颜色的菌落。
  Up to four types of colonies can be measured separately using different colors.
- 配备简单计测与标准计测两种计测模式。
  Equipped with 2 measurement modes : simple and standard.
- 可自由设定计测菌落的大小和范围。
  The measurement target range with regard to colony size can be set freely.
- 对已保存的菌落图像可以进行再计测。
  Saved images can be re-measured any time.
- 可根据菌落的种类进行4种黑白化处理。
  Depending on the type of a colony, the optimal method of monochrome conversion can be selected from four different options.
- 对系统统计结果可进行人工添加、删除的补正。
  Counting can be manually adjusted to either plus or minus.
- 可将计测结果以Excel文档形式导出，并管理保存。
  Data can be transferred to a spreadsheet.

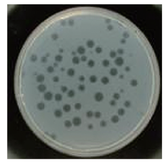
POINT 1 照明亮度均匀 Uniform lighting

运用独有的照明手法，实现明、暗视野两种照明以及拥有均匀度的背景。
被测区域里，即使培养基与菌落的差异微小，也能正确地识别菌落并进行计数。
Our original lighting technique provides a uniform background within the measurement area for both bright and dark fields.
It selectively counts individual colonies even while taking into account subtle differences within the culture medium.



照明亮度分布测试
测定培养皿内亮度分布均匀。
Brightness distribution measurement test
There is no unequal brightness in the measurement area.



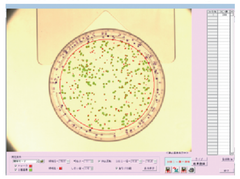


即使霉变、晕圈也能高精度计测。
Plaques can be counted accurately as well.

POINT 2 二种计测手法 Two measurement modes

针对研究需求，备有每次对不同种类的菌落进行计测的模式;针对品质管理需求，备有对同种菌落大量计测的模式。为同时对应这两种模式的需求，实现了在同一软件上切换使用。
The software contains two measurement modes; one is to measure different types of colonies for research purposes and the other is to measure a large amount of same-type colonies for quality control.

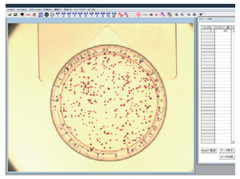
简单模式画面 Simple mode image



从实时图像中只抽取菌落和画像辉度的数据，并进行优化调整，即可简单、准确、适宜的进行计测。
这种模式适用于每次检测不同种类的菌落。
设定过的计测参数保存后可调出再用于计测。

While displaying a live image, the brightness of the image and the threshold value for extraction of a colony can be easily adjusted to set up the optimal measurement condition. It is suitable for counting different types of colonies in every measurement. It is easy and intuitive to operate, and respective measurement conditions can be saved and retrieved at any time.

标准模式画面 Standard mode image

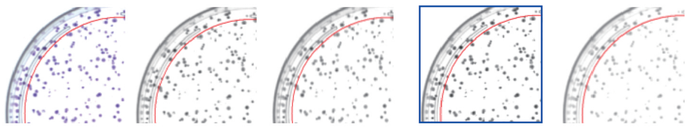


可根据不同菌落种类进行计测参数的事先设定。
适合用于对大量同种类菌落的计测。
比较简单模式,可对以下计测条件进行详细设定:
- 4种黑白化处理方法的选择
- 培养基亮斑的平坦化处理
- 对非圆形的异物等作去除处理
- 最大进行4色分离计测等

The optimal measurement condition for each colony type can be set in advance. This mode is suitable for measuring a large amount of same-type colonies. As can be seen below, more detailed settings for measurement conditions are available than in simple mode,
- four types of monochrome conversion
- flattening of culture media with unequal brightness
- excluding non-circular foreign particles
- separate measurements of different types of colonies by using up to four colors.

POINT 3 四种黑白化处理方法 Four types of monochrome conversion

与分离菌落与培养基，调节对比度可以获得良好的黑白化处理效果(限于标准模式时的使用)。
To separate a colony from culture medium, the monochrome conversion method with the optimal contrast can be selected. (Standard mode only)



拍摄影像
Shot image

单纯黑白化
Simple monochrome conversion

R色调黑白化
Monochrome conversion with R-component extraction

G色调黑白化
Monochrome conversion with G-component extraction

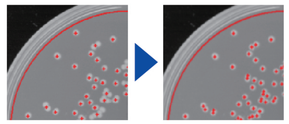
B色调黑白化
Monochrome conversion with B-component extraction

培养基和菌落的对比度越强，得到的计测精度越高。
如左图所标，G色调黑白化处理比单纯黑白化处理的计测精度更高。

The higher the contrast between the culture medium and a colony is, the higher the degree of accuracy that will be available for measurement. In the case of the left image, monochrome conversion with G-component extraction provides higher degree of measurement than simple monochrome conversion.

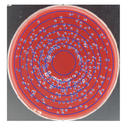
主要性能 Major Function

重叠分离处理 Overlap differentiation function



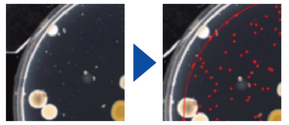
对重叠粘连的菌落进行自动分离并计测。
Overlapping colonies can be automatically separated for individual measurement.

螺旋平板计测 Spiral measurement function



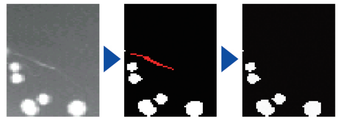
标准配备螺旋平板计测软件
Spiral colony measurement software is included as standard.

尺寸选取
Selective counting function by size



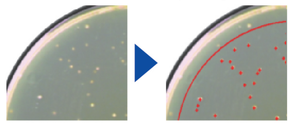
设置被测菌落的大小，排除扩散菌落的计测。
Selectively counts colonies by size while excluding scattered colonies.

圆形度设定计测(限于标准计测模式时的使用)
Selection capability based on the degree of circularity (Standard mode only)



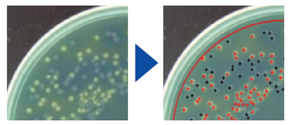
根据圆形度的设定，去除线形异物、痕迹。
自动选择并计测近似圆形状的菌落。
Excludes linear lint or scar and selects only circular colonies.

亮斑修正(限于标准模式时的使用)
Corrective function for unequal brightness (Standard mode only)



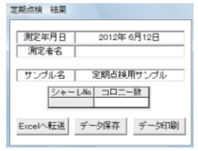
即使培养基厚度不均，也可补正亮度、亮斑，进行高精度计测。
Unequal brightness caused by unequal thickness of culture medium can be corrected to enable measurement with high degree of accuracy.

四色抽取分离计测(限于标准计测模式时的使用)
Separate measurement by four-color extraction (Standard mode only)



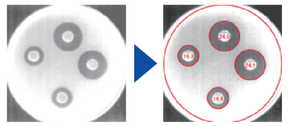
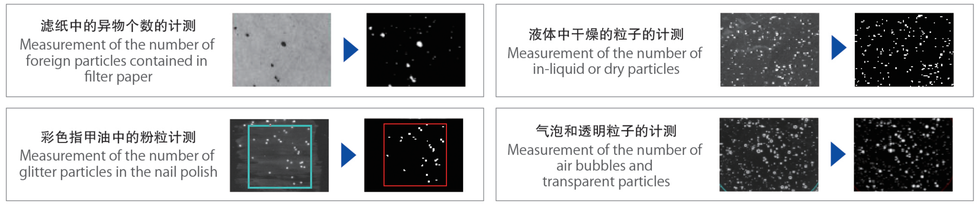
根据菌落的不同颜色，最多可以对4种颜色进行分离计测。
Up to four types of colonies can be measured separately in different colors.

定期点检功能 Regular inspection function



作为点检功能，采用对计测结果不能进行手动补正的计测方法。
For validation of the equipment, manual correction is not allowed in the measurement.

抑菌圈计测(选配软件)
Inhibition zone measurement (Optional software)



其他计测案例 Various cases of measurement