

# TLC SCANNER

## TLC 扫描仪

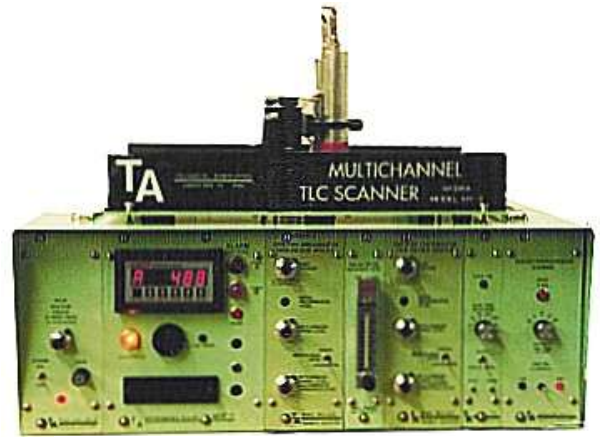
Model ~ HY-3

### FEATURES 特点

#### ACCEPTS PAPER CHROMATOGRAMS, TLC PLATES, & ELECTROPHORESIS

接受纸图谱，薄层层析板和电泳

- ULTRA SENSITIVE  
超灵敏
- SCANS UP TO SIX TRACES SIMULTANEOUSLY  
同时扫描6通道
- THREE DETECTOR TYPES FOR ANY NUCLIDE  
三探头可测量任何核素
- GM OR GAS FLOW OR SCINTILLATION DETECTORS  
GM管、流气式或闪烁探头
- BETAS: H-3, C-14, P-32, etc... GAMMAS: Fe-55, I-125, Tc-99m, etc...  
 $\beta$ : H-3, C-14, P-32,  $\gamma$ : Fe-55, I-125, Tc-99m 等
- HIGH PRECISION AT ALL SPEEDS DUE TO DIGITAL DRIVE  
数字驱动，任何速度精度高
- WILL DETECT LOWER LEVELS THAN ANY PREVIOUS SCANNER  
目前为止测量下限最低
- QUANTITATIVE – EASY INTEGRATION OF AREA UNDER PEAK  
峰面积定量分析
- MAY BE INTERFACED TO COMPUTER OR COMPUTING INTEGRATOR  
可以连接到电脑
- LARGE 10" X 20" TABLE  
大平面10" X 20"



HY-3 ELECTRONICS & TABLE SCANNER

### APPLICATION: 应用

TRACER METHODOLOGY IN PET LABS, BIOCHEMISTRY, BIOMED AND CLINICAL LAB, RADIOPHARMACY & NUCLEAR MEDICINE

PET实验室，生物医学，临床实验室，放射性药物学和核医药方面的示踪。



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Phone) 818-883-6103 (Fax)

[tagold@nwc.net](mailto:tagold@nwc.net)

[WWW.TECH-ASSOCIATES.COM](http://WWW.TECH-ASSOCIATES.COM)

Divisions of  US NUCLEAR CORP

TICKER UCLE

# TLC SCANNER

## TLC 扫描仪

Model ~ HY-3

### DESCRIPTION: 描述

The HY-3 allows samples & standards to be spotted on the same TLC and plotted together on the same strip chart, thus giving exact comparison between peak locations & heights in the samples and standards. It also allows up to six paper strips to be counted simultaneously, thus substantially decreasing the time as compared to serial paper strip counters. Use in electrophorogram scanning grants the same benefits.

HY-3允许在同一台TLC标出样品和标准，在同一张铺板上显示，这样可以对样品和标准中的峰位置和高度进行准确对比。允许6张薄层色柱同时计数，这样与单色柱逐个扫描相比有效地减少时间达到同样效果。

Sensitivity is extremely broad. Travel increment and dwell time of the sample under the detector are controllable over a broad range. This system is useful for any isotope and allows unattended scanning of even very low level chromatograms.

极宽量程灵敏度，探头下样品运送和停留时间可控，系统适用于任何核素并允许自动扫描极低限色谱。

The HY-3 is an automatic scanner for TLC's, gels, paper chromatograms & electrophoreses.

A moving 10" x 20" table carries two 20cm x 20 cm TLC's or other samples in controlled steps under a bridge, examines traces on the sample and transfers information to printer or strip chart recorder. Detectors are interchangeable.

TF-1212 gas flow detectors are standard & sensitive to all Betas except Tritium. Also available are the thin window scintillation detectors which are highly sensitive to low energy Gammas (such as those from I-125, Tc-99m, etc...) and are also very sensitive to Betas above 200KeV.

HY-3 系列仪器为自动扫描器用于 TLC 板，凝胶，纸色谱和电泳。

10" x 20"移动平台以设定的步速运载两块 20cm x 20 cm 的 TLC 板或其它样品在横梁下通过，检验样品迹线并将信息转到打印机或长图记录器上，探头可互换。

提供的 TF-1212 流气式探测器除了氚外，对所有  $\beta$  灵敏，可选购对低能  $\gamma$  高度敏感并且对 200KeV 以上的  $\beta$  敏感的薄窗闪烁探头。

### FEATURES: 功能

ULTRA-SENSITIVE - WILL DETECT LOW LEVELS OF: 极灵敏-测量以下低浓度辐射:

- H-3
- C-14
- P-32
- I-131

SPARTIAL RESOLUTION: 1MM

空间分辨率:

A unique feature is the **digital step control of movement**. The sample (as well as the strip chart) is advanced a preset distance (1, 2, 5, or 10mm), then counted for a time presettable from one second to 3000 seconds (1, 3, 10, 30, 100, 300, 1000, 3000 sec.), allowing variations from a very rapid scan to a slow scan for the greatest accuracy even in extremely low level samples.

**Readout** may be via a **10" wide Chart Recorder** with all parallel samples presented on one chart, or may be as numbers in a **digital printer**, or interfaced with a **data processor** or **computer**.



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Phone) 818-883-6103 (Fax)

Divisions of  US NUCLEAR CORP

[tagold@nwc.net](mailto:tagold@nwc.net)

[WWW.TECH-ASSOCIATES.COM](http://WWW.TECH-ASSOCIATES.COM)

TICKER UCLE

# TLC SCANNER

## TLC 扫描仪

### Model ~ HY-3

数字步进控制是移动扫描仪独特之处，样品（铺板）预设距离(1, 2, 5, 10mm),然后按照预设时间计数，从一秒到3000秒（1, 3, 10, 30, 100, 300, 1000, 3000 秒),允许从快速扫描到慢速扫描，以便在极低值样品情况下取得最大精度。10"宽的图表记录器将并列样品的读数显示在一个图表上，或用数字打印机打印，或输入到数据处理器或计算机上。

Another unique feature is the ability to read out digitally, in addition to, or instead of, chart recorder readout. With low activity samples, the count time may be as long as 3000 seconds per position.

A set of collimators is furnished with each detector giving resolution from 1mm to the full 6mm diameter of the detector. Wider detectors for streak scanning are also available.

The strip chart readout is presented in the form of a histogram allowing rapid quantitation so other type summation is not necessary.

The digital scaler which is an integrating strip chart recorder is available. The digital system utilizes the most frequently used fully computer compatible bus for direct hook-up to micro-processor, computing integrator or computer.

扫描器特点除了图表录入器读出外还有数字显示功能。低活度样品，计数时间每个位置可长达3000秒，每个探头配备一套准直仪，显示分辨率从探头直径1mm到6mm,可供应宽探头用于条柱扫描。条带读出结果以柱状图形式显示以便快速定量，因此没必要用其它形式显示总数。还可选购数字读数器，即一体式条形记录器。数字系统使用最常用的全电脑兼容总线直接连接到微处理器

Each scanner consists of four primary functional sections:

每个扫描器具有四个主要功能部分

1. The **moving table and its control mechanism** (all modular) together with the detector mounting bridge and locating mechanism.  
移动平台和其机械控制（全模块）再加上安装在横梁上的探头和定位
2. The **modular electronics package** consisting of bias supplies for detectors, plus amplifiers, signal conditioners, ratemeters, and counters for detectors.  
模块化电子学封装包括探测器偏压电源，加放大器，信号调节器，读数器和计数器。
3. The **detectors** themselves, which may be sealed thin-end window GM tubes, gas flow counters, or thin window scintillators. The proper choice of detector allows excellent counting efficiency for practically all nuclides.  
探测器本身，可以是密封薄窗 GM 管，流气式计数器，或薄窗闪烁体。选择合适的探测器所有核素都可达到极高的计数效率。
4. The **hard copy** presentation and its interface; consisting of multichannel strip chart recorder or digital printer or output to computer or data processor.  
硬拷贝报告及界面：包括多道长形记录器或数字打印机或输入到计算机或数据处理器。



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Phone) 818-883-6103 (Fax)

[tagold@nwc.net](mailto:tagold@nwc.net)

[WWW.TECH-ASSOCIATES.COM](http://WWW.TECH-ASSOCIATES.COM)

Divisions of  US NUCLEAR CORP

TICKER UCLE

# TLC SCANNER

## TLC 扫描仪

Model ~ HY-3

### SPECIFICATIONS: 配置

#### I. TABLE AND CONTROL MECHANISMS: 台面与机械控制部分

Samples accepted: one to two 20cm plates in series, one to six strips up to 40cm long in parallel, or up to 12 strips up to 20cm long.

接受样品: 1-2个20cm铺板先后顺序排放, 1-6色柱并列则达40cm, 12条色柱则20cm长。

<b>Table Dimensions:</b> 台面尺寸	25.4cm x 50.8cm
<b>Case Dimensions:</b> 外箱尺寸:	53cm x 30cm D x 30cm H
<b>Weight:</b> 重量:	20 kg.
<b>Modules and Components:</b> 模块和组件:	MSP-5 Power Supply. MSP-5电源
<b>Housed in Table Transport</b> 内置式台面移动装置	MCL-5 Motor Drive Control Logic MCL-5马达控制
<b>Table &amp; Cabinet:</b>  桌面&机柜:	MTM-5 Translator-Controller exactly synchronizes motors of table and chart recorder; step lengths 1, 2, 5, 10mm (equivalent table speeds are from 3mm/sec to 1.2mm/hr), or table can be moved manually in a continuous fashion. MTM-5控制器准确操作马达与图形记录器同步, 步进长度1, 2, 5, 10mm, 桌面可手动连续移动。 <ul style="list-style-type: none"><li>• MTR-5 Digital Drive Motor. 数字马达</li><li>• Table and Drive Chain. 桌面和驱动链</li><li>• Detector Mounting Bridge 探头安装横梁</li><li>• Case. 外箱</li><li>•</li></ul>

#### II. MODULAR COUNTING-ELECTRONICS PACKAGE:

模块式计数-电子学组件

<b>Dimensions:</b> 尺寸:	21"W x 16"D x 11"H.
<b>Weight:</b> 重量:	20 lbs
<b>Modules:</b>	All modules are T/A's standard FM-9 modules as follows: MVR-5R High Voltage bias supply continuously variable 0-2000 V exactly resettable, also supplies operating voltages for the various modules 12V, 5V. MPT-5E times. Count times (same as table and recorder dwell times): 1, 3, 10, 30, 100, 300 1K, 3k seconds. Additional optional FM-9 modules may be added:



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Phone) 818-883-6103 (Fax)

Divisions of  US NUCLEAR CORP

[tagold@nwc.net](mailto:tagold@nwc.net)

[WWW.TECH-ASSOCIATES.COM](http://WWW.TECH-ASSOCIATES.COM)

TICKER UCLE

# TLC SCANNER

## TLC 扫描仪

### Model ~ HY-3

模块:	<ul style="list-style-type: none"><li>• MGA-5 single channel analyzer.</li></ul> 全模块T/A公司标准FM-9系列模块: 高压偏置电源MVR-5R 0-2000V范围可变,可设定可为各种模块提供操作电压 12v, 5v. MPT-5E计时, 可添加FM-9模块
<b>Ratemeter Systems:</b>	MAM-5 Ratemeter (one for each detector) ranges: 0-500, 5000, 50000, 500000 cpm full scale. Time Constants: Continuous variable to 20sec.
显示系统:	MAM-5 计数率显示量程: 0-500, 5000, 50000, 500000 cpm, 全量程; 时间常数, 连续可变至20秒
<b>Digital Systems:</b>	MSM-5 Scales (one for each detector) 5 digits plus overflow indicator; counts to 199,999.
数字系统:	MSM-5 计量器, 5位数加过量程指示, 计数到199,999
<b>III. DETECTORS:</b>	<b>探测器:</b>
<b>Three Basic Detector Types:</b>	GM, Gas Flow, Scintillation.
三个基本探头类型:	GM, 流气式, 闪烁体
<b>Mounting:</b>	1 to 6 detectors mount on detector bridge directly above chromatogram.
<b>Distance Above TLC:</b>	Continuously and repeatable adjustability by screwdriver from 2cm down to contact between detector face and chromatogram.
<b>TLC 上面安装距离:</b>	1 到 6 个探测器直接安装在色谱仪上面的探头横梁上。用螺丝刀持续反复调整, 探头表面与色谱仪距离从 2cm 到接触。
<b>Lateral Position:</b>	Continuously and repeatable adjustability along 26cm long linear track, and firmly held in place.
侧面:	持续反复调整26cm长的线性轨道, 牢固地原地固定。
See Detector Chart for complete Specifications. 详见探头表格	

### IV. HARD COPY READOUTS: 硬拷贝输出

#### Strip Chart Recorder - Model RCR-5 条形图记录器-型号RCR-5

8" wide, digital drive, travel distance linear to TLC traverse rate.

8"宽数字驱动, 移距与 TLC 横动率完全一致, 如果多计数头则时间共享

<b>Stepping Speeds:</b>	Same as Sample Table see <b>I. TABLE AND CONTROL MECHANISMS:</b>
步进速度:	和样品台一致。见桌面与控制装置
<b>Dwell Time:</b>	Same as Sample Table. <b>I. TABLE AND CONTROL MECHANISMS:</b>
停留时间:	同上
<b>Outputs:</b>	Can drive additional distant meter or chart recorder. Pulse train information for a counter Transfer pulses. Timing information.
输出:	可控制更远距离显示单元或图谱记录器, 提供计数器脉冲序列信息, 时间信息



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Phone) 818-883-6103 (Fax)

[tagold@nwc.net](mailto:tagold@nwc.net)

[WWW.TECH-ASSOCIATES.COM](http://WWW.TECH-ASSOCIATES.COM)

Divisions of  US NUCLEAR CORP

TICKER UCLE

# TLC SCANNER

## TLC 扫描仪

Model ~ HY-3

### Digital Printer for One or Two Channel System - Model MPM-5

单/双通道系统数字打印机-MPM-5

**Date:** 4 digits plus overflow.  
**日期:** 4位数字  
**Position:** 2 digits reads in mm.  
**位置:** 2位数, 单位毫米  
**Outputs:** Rs-232 serial output.  
Parallel Line BCD.  
Pulse Train.  
Presettable contact closure if peak exceeds a certain value.  
**输出:** RS-232串口, 平行线BCD, 脉冲列, 可预设继电器。

### Digital Printer for Three to Six Channel System - Model MPD-40.

3-6通道系统数字打印机-MPD-40

### Complete Computer Analysis System: 一体计算机分析系统

Separate, independent counters for each detector on Data acquisition module. Complete data acquisition, analysis, display, recording, and printing.

每个探头配备单独计数器, 完整数据获取, 分析, 显示, 录入和打印功能

### OVERALL SYSTEM SPECIFICATIONS: 系统配置:

**Power Requirements:** 50-60 hz 110 VAC (220 VAC optional).  
**电源要求:**



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Phone) 818-883-6103 (Fax)

[tagold@nwc.net](mailto:tagold@nwc.net)

[WWW.TECH-ASSOCIATES.COM](http://WWW.TECH-ASSOCIATES.COM)

Divisions of  US NUCLEAR CORP

TICKER UCLE

# TLC SCANNER

## TLC 扫描仪

Model ~ HY-3

### DETECTOR CHART

MODEL: 型号	T-1212	GF-1212	PGS-7
DETECTOR: 探头	G M	Gas Flow*	Na(Tl) Scintillation
SENSITIVE DIAMETER: 灵敏直径 T-1212 T-1210	6mm 25m m	6mm	6mm
WINDOW THICKNESS: 窗厚度	1.5-2.0mg/cm	windowless	5mil Al; 35mg/cm
SENSITIVE MATERIAL: 灵敏材料	Halogen Quenched Geiger Gas	Any Standard Proportional or Geiger Counting Gas	NaI(Tl): PGS-7, 2mm thick PGS-76, 6mm thick Better for gamma >200KeV
MAX NUMBER DETECTORS MOUNTABLE ON SINGLE BRIDGE: 单梁最多探头数	6	6	4
TYPICAL BACKGROUND COUNT RATE IN .02mR/hr FIELD (very low): 典型本底计数率 T-1212 T-1210	1/2 mm – 1cpm 20cpm	1/2 - 1cpm	PGS-7 140cpm PGS-76 400cpm
RADIATIONS DETECTED & MINIMUM ENERGIES: 辐射探测及最低能量	Alpha, Beta (140KeV), Gamma <1% efficiency	Alpha, Beta (40KeV), Gamma <1% efficiency	Beta (200KeV), Gamma (5KeV)
TYPICAL NUCLIDES DETECTED: 典型可探测核素	C-14 Co-57 P-32 Ca-45	H-3 C-14 and all nuclides shown for T-1212.	Fe-55 I-125 Tc-99m I-131
COLLIMATORS AVAILABLE: 准直仪	1mm dia. 2mm dia. 4mm dia. 1mm slot Other on Request	1mm dia. 2mm dia. 4mm dia. 1mm slot Other on Request	1mm dia. 2mm dia. 4mm dia. 1mm slot Other on Request
SHIELDING: 屏蔽	Available	Available	Available



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Phone) 818-883-6103 (Fax)

Divisions of  US NUCLEAR CORP

[tagold@nwc.net](mailto:tagold@nwc.net)

[WWW.TECH-ASSOCIATES.COM](http://WWW.TECH-ASSOCIATES.COM)

TICKER UCLE



# TLC SCANNER

## TLC 扫描仪

Model ~ HY-3

\*For Geiger or Proportional Use. 用于盖革管或正比计数

Wider detectors with longer slot collimators are available for scanning streaked plates.

Gases available from Technical Associates or any large gas company.

可提供用于扫描色谱柱板带长槽准直仪的宽探头，气体由TA或其它大供气公司提供

### ISOTOPES & SENSITIVITY 核素及灵敏度

ISOTOPE	C-14	P-32	I-131	H-3**	C-14**	I-125	Tc-99m
APPROX. SYSTEM							
SENSITIVITY:	10-20%	38%	32%	1/2-3%	30-40%	15%	PGS-7: 5% PGS-76: 10%
APETURE MINIMUM QUANTITIES DETECTABLE IN picoCi:							
5mm <sup>(3)</sup>	60-120	60	60	700-4200		1,200	1,600
1mm <sup>(3)</sup>	1,200	600	600	7,000-42,000		2,000	2,600
5mm <sup>(4)</sup>	3	1.5	1.5	80		150	100
1mm <sup>(4)</sup>	0.01	0.005	0.005	0.3		0.45	0.3

\*\*Self-absorption in the chromatography medium is the limiting factor in sensitivity for C-14 and Tritium.

层析介质自吸收在测 C-14 和氚的灵敏度方面成为受限制因素

<sup>(3)</sup> Minimum activity which can be **quantitatively measured with good accuracy** in an overnight scan.

经过一夜扫描后可定量精确检出最小活度

<sup>(4)</sup> Minimum activity which can be **detected** with 95% confidence in an overnight scan.

经过一夜扫描后可定量精确检出置信度95%的最小活度

- GM - Betas: All Betas that penetrate the window will count.  
GM-β: 所有穿透薄窗的β会被计数
- Gas Flow - Betas: All Betas that go into the detector will count.  
流气式-β: 所有进入探头的β会被计数



TECHNICAL ASSOCIATES  
OVERHOFF TECHNOLOGY

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Phone) 818-883-6103 (Fax)

[tagold@nwc.net](mailto:tagold@nwc.net)

[WWW.TECH-ASSOCIATES.COM](http://WWW.TECH-ASSOCIATES.COM)

Divisions of  US NUCLEAR CORP

TICKER UCLE