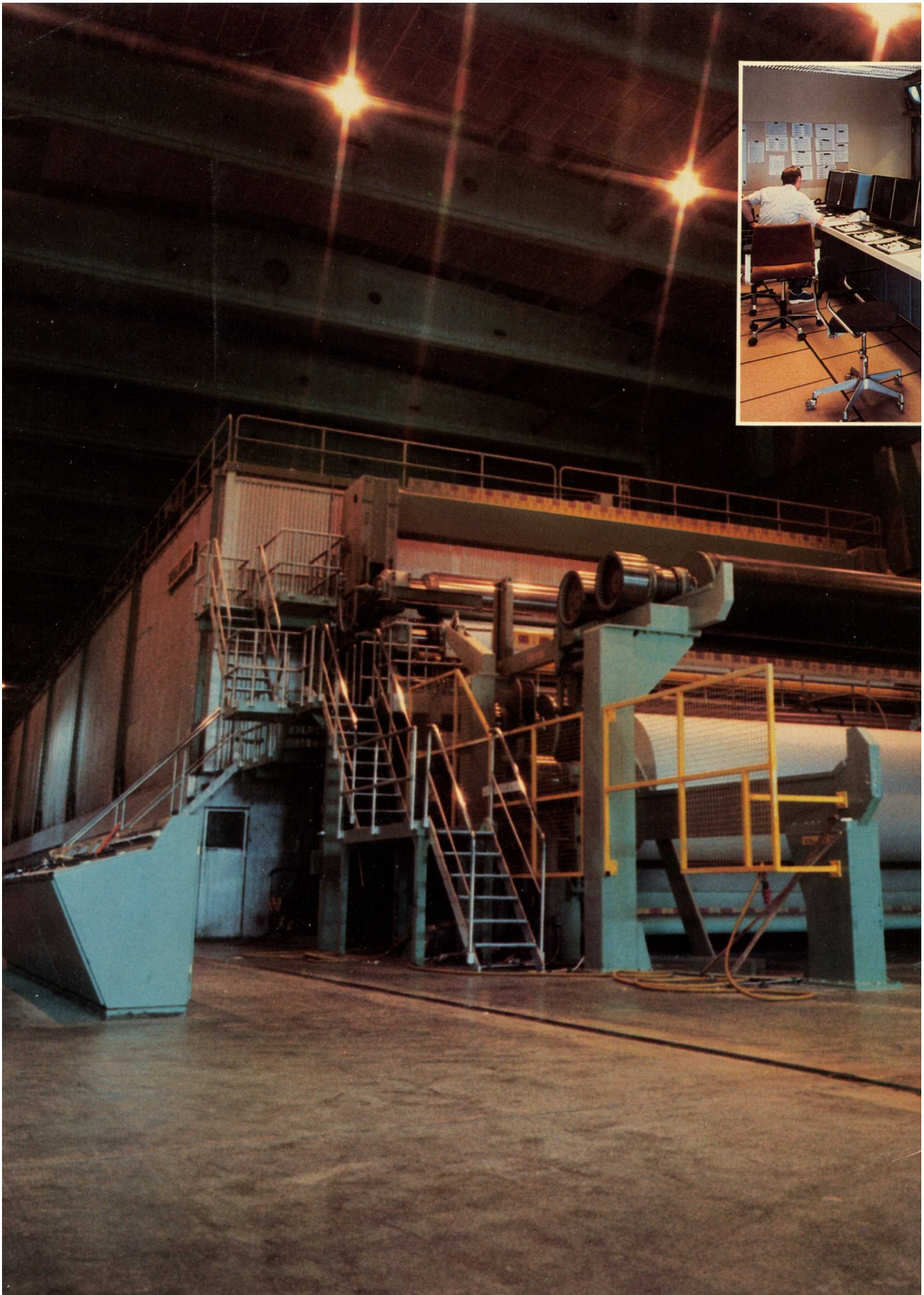


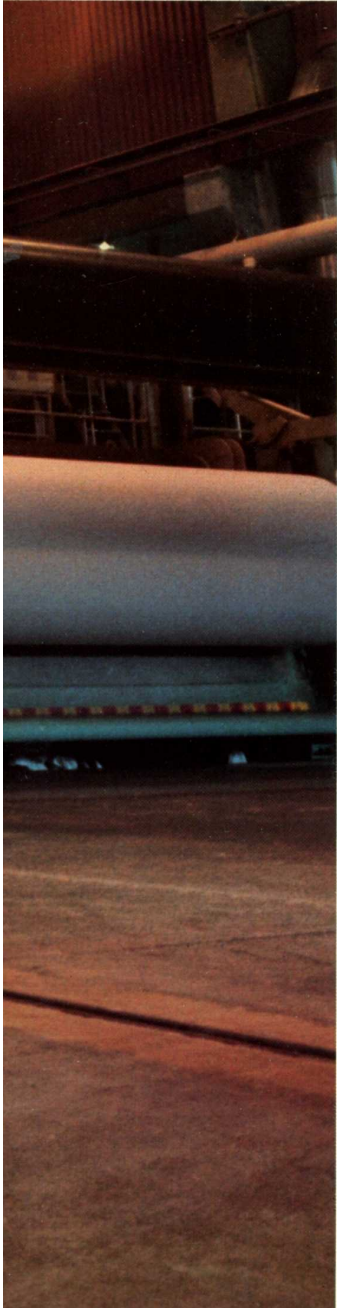
# A Better Way To View Your Changing World











# Your World Is Changing

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## You face more challenges every day:

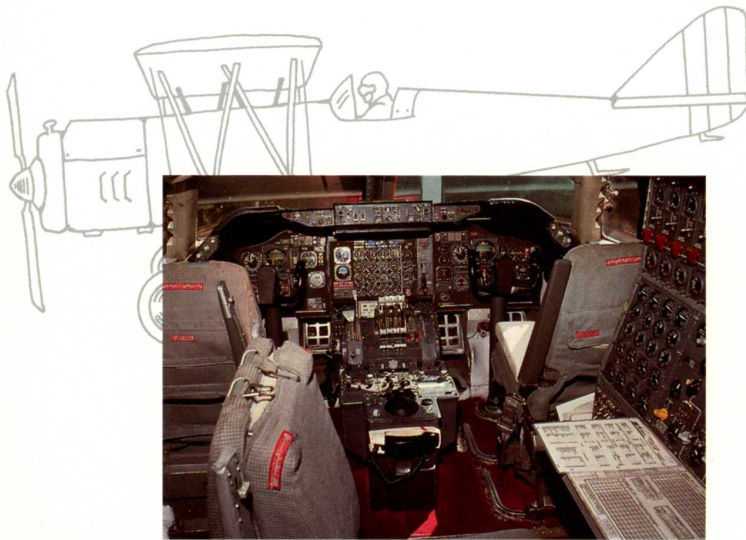
- machines are larger and faster but run by fewer people than ever before.
- new technologies allow higher speeds but with less margin for error.
- machine efficiency and material savings today depend on how well the measurement and control system is utilized.
- sophisticated sensors and actuators measure and control more paper qualities simultaneously than ever before.
- operators and supervisors are spending as much time in control rooms — overseeing the entire process — as they do on the machine floor.
- millwide integration has become an accepted part of paper mill management.

As an operator, supervisor or manager, you need maximum visibility into the papermaking process — no matter where you are in the mill. You must also have a way to access information when you need it...and a way to respond quickly to problems. With these requirements in mind AccuRay set out to design the ultimate interface between you and the proven AccuRay II80 MICRO™ system.

To ensure that the finished product truly met the needs of the user, we commissioned human-engineering consultants who worked with AccuRay for almost two years. Together we examined the needs of modern mills and designed a product to meet those needs.

The result is DeltaComm...a better way to view your changing world.

# The Process Is Changing



One of the more significant trends in papermaking is the changing relationship between operator and machine. Historically an operator has run his machine manually — checking here, adjusting there — until he got it right. Today an operator relies heavily on measurement and control systems — like the AccuRay 1180 MICRO™. And the time he would previously have spent checking and adjusting his machine, he now spends at operator stations throughout the mill. They are his “windows” into the process. And the better the view the better his control. A good analogy is the

change that has occurred in aviation technology. Early pilots flew by actually manipulating controls. Today's jet pilots typically spend their time entering instructions into a computer system that, in turn, flies the plane. Think of DeltaComm as a sophisticated “cockpit” for the 1180 MICRO.

*\* The name DeltaComm is a combination of the Greek letter used in math and science to represent “change,” and an abbreviation of the word communication. DeltaComm — a way to meet the changing requirements of papermaking by improving the communication between operator and machine.*



# Introducing AccuRay DeltaComm<sup>\*</sup>

**We've changed the way we look  
to improve the way you look**

**Convenient** human-engineered design improves efficiency. Easy-to-use industrial joystick provides a way to quickly call up and respond to data.

**Durable** aluminum and structural-polymer cabinet eliminates corrosion problems. Environmentally sealed for long life in harsh mill environments.

**Flexible** broad range of video displays provides a "window" into the process. An interactive graphic-building capability is also available for creating customized displays.

**Compact** low-profile design (60 1/2" — 153 cm — high) lets you see your machine while working at the station. The upper console swivels 270 degrees to give you a clear view of the video while working around the machine.



**Simplified** control panel features industrial joystick control and sealed push-buttons for instant acknowledgment of system commands. Dedicated push-button capability provides fast response for critical system functions.

**Easy to Read** graphics feature 640 x 480 pixel resolution — optimum as determined by human factors studies. Automatic video page cycling continuously displays the most current and important data.

**Fast** video response to commands means no waiting for needed information.

**Versatile** modular design permits convenient location on the machine floor or in quality labs, control rooms, or technical or management offices.

*DeltaComm...From the machine floor to the mill manager's office*





1180 MICRO

3211

## AccuRay DeltaComm™ User Interface (Single Console)

### EXECUTIVE SUMMARY

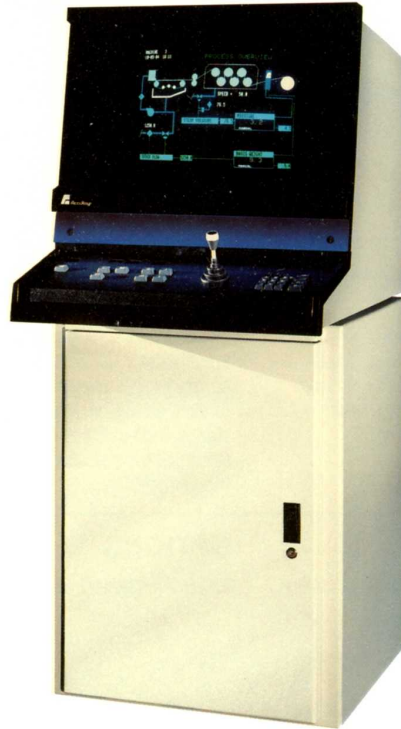
AccuRay DeltaComm is the interface between the user and the AccuRay 1180 MICRO™ system. It allows users to control and better utilize the 1180 MICRO system by providing improved visibility into the paper-making process. It is available in a number of configurations for different parts of the mill and offers users the capability of building customized displays.

### DESCRIPTION

AccuRay DeltaComm is a compact yet powerful addition to the AccuRay 1180 MICRO system. A modular design provides different configurations for convenient location on the machine floor, or in quality labs, control rooms, or technical or management offices. It features a simplified control panel, fast high-resolution graphics, and a human-engineered design. The single console unit is suitable for installation in a harsh paper machine environment.

### FEATURES

- Human-engineered design with industrial joystick for accessing and retrieving data.
- Durable aluminum and structural-polymer cabinet eliminates corrosion problems. Environmentally-sealed for long life in harsh mill environments.
- Broad range of video displays.
- Low profile design (60.5" — 153 cm) lets the operator see the machine while working at the operator station.
- Upper console swivels 270 degrees to let the user see the video while working around the machine.
- Simplified control panel has only eight pushbuttons plus a numeric entry key pad and cursor control device. Pushbuttons and key pads are sealed (NEMA 12) to provide full travel and tactile feedback.
- High-resolution (640 x 480 pixels) video controller provides alpha-numeric and graphic displays on a 19" color monitor.
- Immediate visual feedback acknowledges user requests.
- Industrial joystick (feature 3221) controls cursor positioning on displays designed for interactive use. Lets the user control the cursor without having to look away from the screen.
- Built-in water-cooled air conditioner (feature 3225).
- Automatic video display cycling gives users a continuous update of important information.
- Displays can be retrieved using the menu, dedicated buttons for critical functions, or access numbers.
- EVERGREEN Technology™ design provides for addition to existing 1180 MICRO systems.



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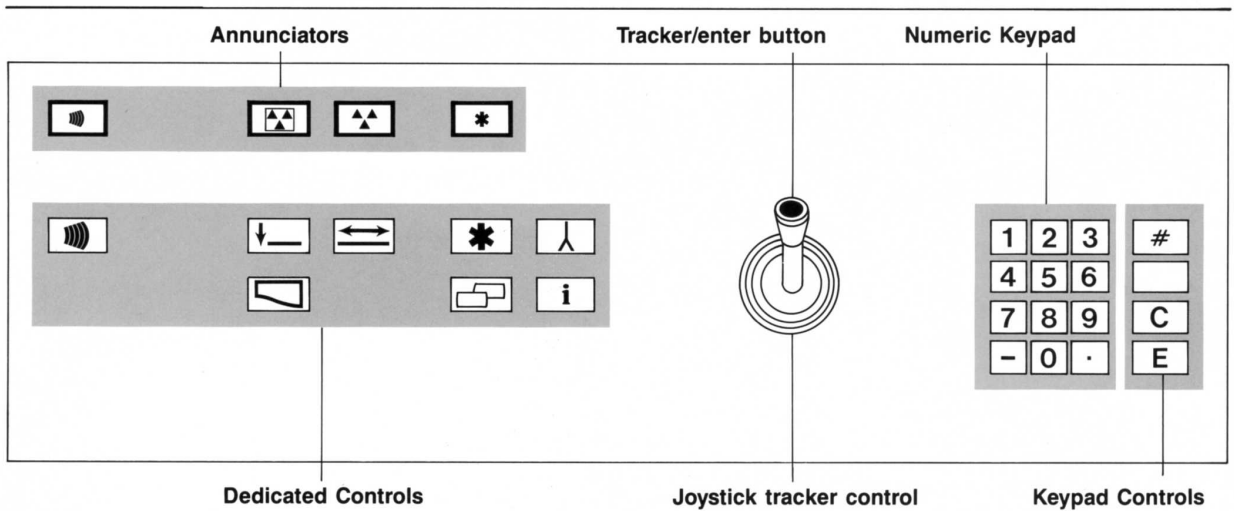
TM AccuRay 1180 MICRO, DeltaComm and EVERGREEN Technology are trademarks of AccuRay Corporation

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Specifications subject to change

Printed in U.S.A.

BS-A-2-084505-001



**Annunciators** indicate status and occurrence of new conditions. They feature symbol-type descriptions and include: shutter open/closed, alarms, and operation status.

**Dedicated Controls** perform specialized functions. They feature symbol-type descriptions and include: On/off sheet, video menu, operation status, control select, report print, information request, and alarm messages.

The **Numeric keypad** and **Keypad Controls** are used to enter data into the system. This data can be in response to a parameter highlighted on the video monitor.

## SPECIFICATIONS

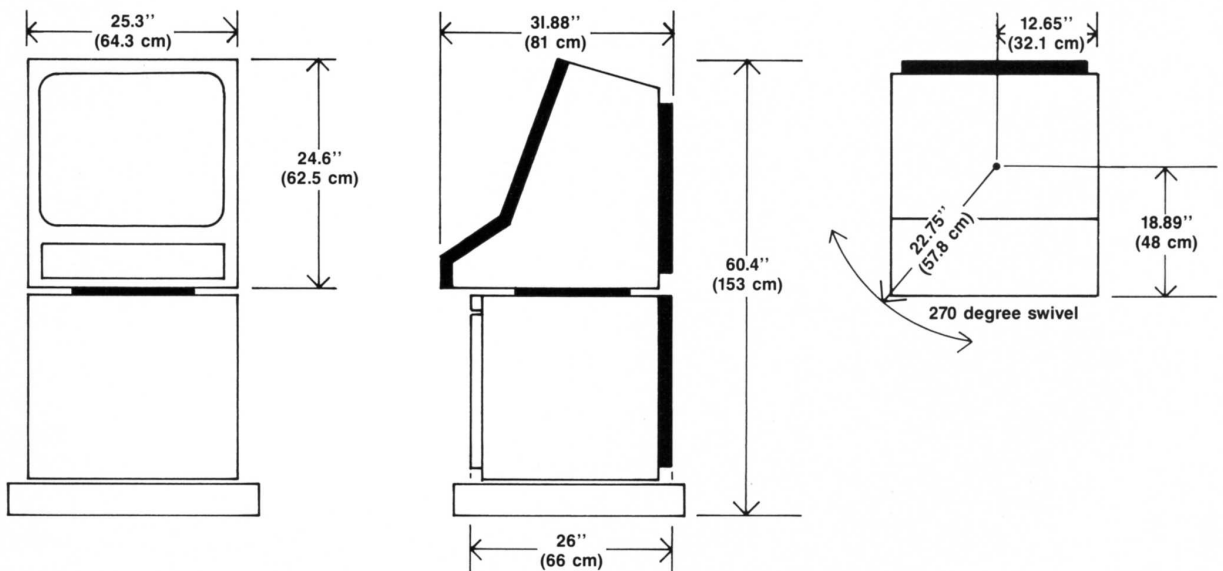
Power: 120 VAC @ 7 Amps and 240 VAC @ 6.5 Amps

Maximum Temperature: 105 degrees F.

(See Support By Customer data sheet.)

## OPTIONS

3226 Air-cooled air conditioner.





# AccuRay DeltaComm™ Designed With You in Mind



## Human-engineered Control Panel

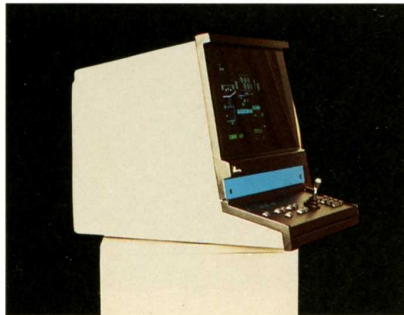
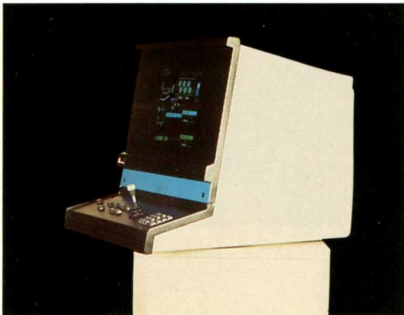
The first thing you'll notice about DeltaComm is that the control panel has been simplified. Even users who don't work with the system every day, can operate it. Twenty-four "real" push-buttons — only a fraction of the number used on other systems — control all functions. Pushbuttons are environmentally-sealed and marked with international symbols.

The joystick lets you move a pointer around the screen to enter and access information (including displays you design yourself)... while never taking your eyes from the display. Other manufacturers make you "touch" the screen to do this. That's fine for a controlled environment, where hands stay clean, but not for a mill floor.



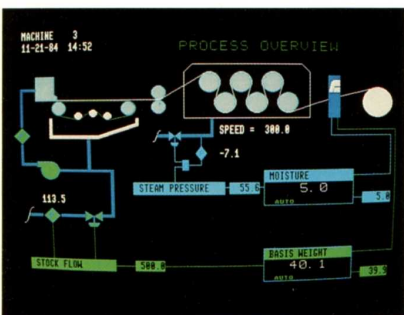
## High Visibility Design

Some operator stations make better doors than windows. When entering or retrieving data, you should be able to see your machine. DeltaComm stands only 60 1/2" (153 cm) high to give you a clear view of the process at all times. You've got better things to do with valuable floor space than fill it with tall cabinets that block the view.



## Convenient Swivel Top

An operator station is your "window" into the process. You should be able to see that "window" no matter where you are around the machine. DeltaComm's upper cabinet swivels 270 degrees, providing you with a clear view of the video screen — from almost anywhere. In addition, video pages cycle automatically to give you a continuous update of needed information, even while you are away from the station.



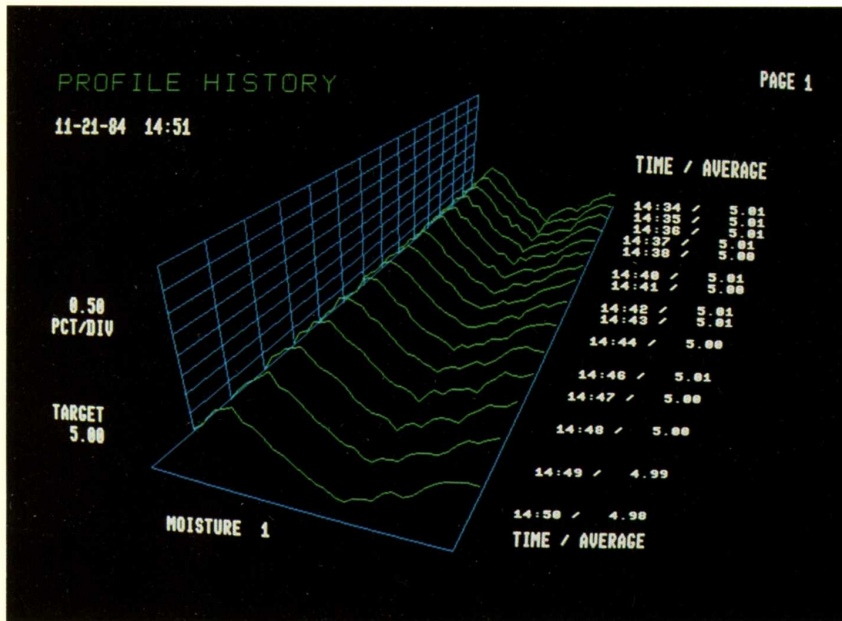
## Fast, High-Resolution Graphics

As you spend much of your time in front of the video screen, you'd better like what you see. DeltaComm displays appear quickly — within 1/2 second of when a button is pushed. And resolution is the best in the industry.

DeltaComm gives you two ways to view your process. First a host of impressive display pages show you — in an easily understandable way — what is happening in your process. Secondly, an interactive graphics-building capability (MICROgraph™) is available to let you design your own displays.



# Video Displays That Connect Your Process Line With Your Bottom Line



DeltaComm improves the effectiveness of the 1180 MICRO system by providing maximum visibility into the process. As you always have immediate access to the latest information in easy-to-understand form, you can make better decisions and better utilization of your system.

DeltaComm offers a broad range of menu-driven reports and graphic displays including cross-machine profiles, trends, menus, production reports, operation status, control select and alarms. Other displays are also available, such as the process schematic or profile history shown above. This is a graphic depiction of cross-machine variations over a period of time.

MASTER MENU PAGE 1

- 1 TREND AVERAGES 1 2 3
- 2 COMPOSITE PROFILES 1 2 3
- 3 PROCESS SUMMARY 1 2 3
- 4 PRODUCTION SUMMARY 1
- 5 ALARM MESSAGES 1
- 7 OPERATION STATUS 1
- 8 CONTROL SELECT 1
- 9 VIDEO MENU 1 2
- 10 PROFILE HISTORY 1
- 11 PROCESS OVERVIEW 1

- ALARM LAMP - Blinking red lamp indicating a new alarm message was generated
- ALARM MESSAGE - Displays video report of excess system conditions
- SOURCE OPEN - All sources are not closed
- SOURCE CLOSED - All sources are closed
- OFF SHEET - Moves sensors off sheet
- SCAN - Causes sensors to scan

MACHINE 1 OPERATION STATUS PAGE 1  
80-21-84 18:57

	REEL BASIS MT AVG OFF SPEC	SIZE PRESS MOIST AVG ON SPEC	BONE DRY MT AVG ON SPEC
ALARM MESSAGE	REEL BASIS MT PROF ON SPEC	SIZE PRESS MOIST PROF ON SPEC	BONE DRY MT PROF ON SPEC

107.40

VIDEO RETURN OFF SHEET SCAN PWR PRINT CHANNEL NUMBER CHANNEL DATA

# DeltaComm™

## Lets You Build It Yourself

When we designed DeltaComm we realized that different users have different needs. And, although DeltaComm comes with a wide range of reports and graphic displays, you may still need to be able to build your own. DeltaComm offers this capability with a feature called MICROgraph™.

MICROgraph is unlike anything else in the industry as it is truly "user friendly."

You select MICROgraph from the master menu. The bottom of the screen displays a series of symbols, patterns, colors, icons and type to choose from. With only a little practice (and built-in prompts from the system), even novice users can build complex graphics to meet special requirements. And it's as easy as 1-2-3.

### Above

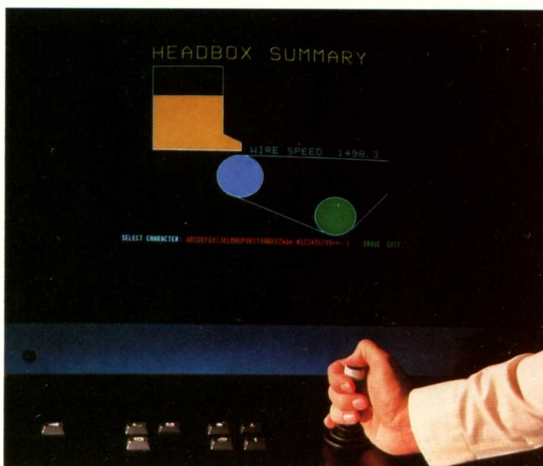
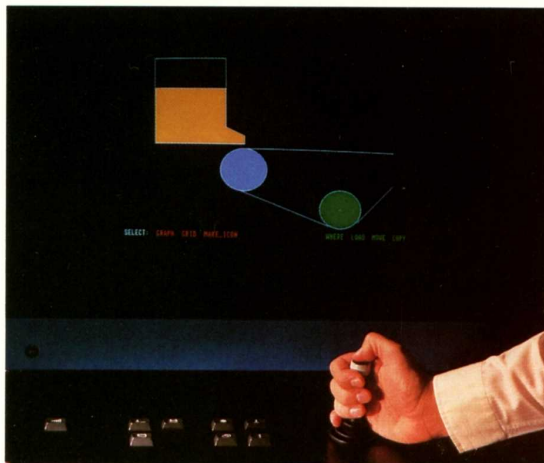
The joystick moves a pointer around the screen. By positioning this pointer over various shapes, colors and patterns, you can quickly create easily-understandable and customized graphic displays. The system gives easy instructions to walk you through the procedure.

### Middle

The button on top of the joystick lets you enter appropriate titles for your illustration. These can be made larger or smaller, or the foreground or background color changed, to suit your tastes.

### Below

Any part of the illustration can be enlarged, reduced, moved or "erased" easily. When you are satisfied with the product, video graphics can be stored on disk and easily retrieved.



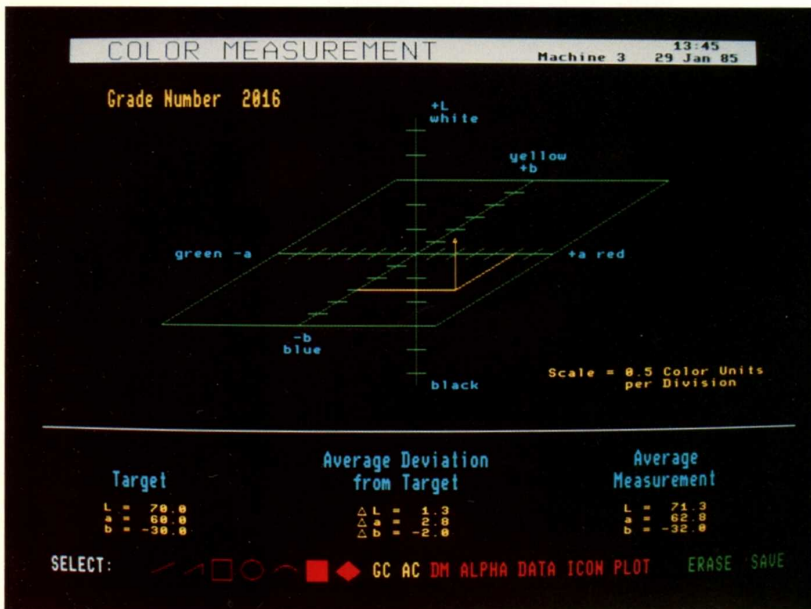


# Displays...Displays...Displays



MICROgraph lets you customize graphics for your specific requirements. Here's just a few examples of what can be done with this powerful tool:

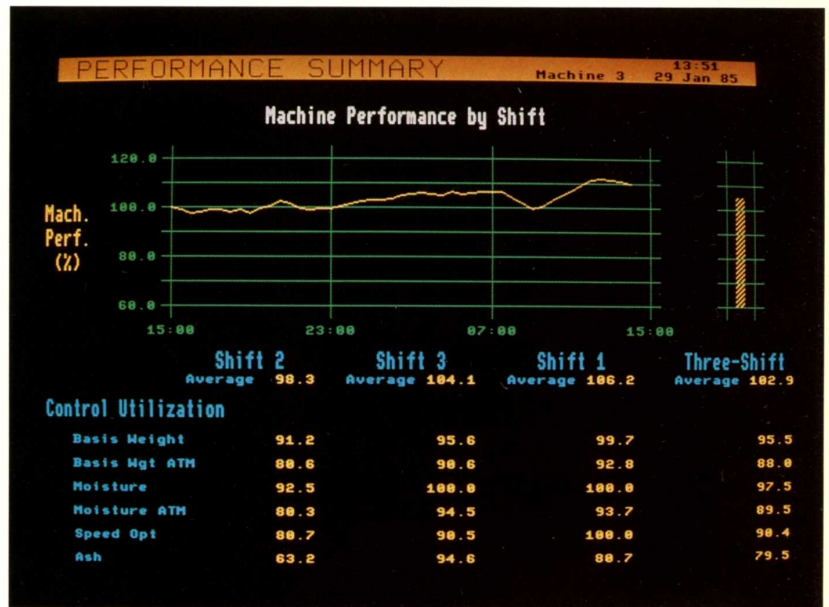
This graphic simulates a display familiar to an operator. It compares targets and actual conditions.



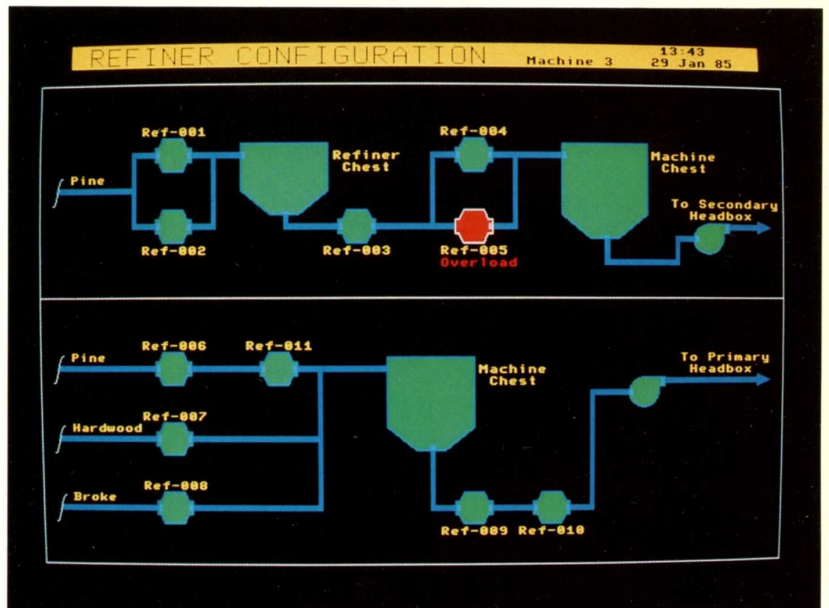
What better way to provide an overview of color measurement and control than by using graphics to display the 3-dimensional relationship of color coordinates? You can quickly see the L,a,b values compared to targets, and know what action to take.

# Displays...Displays...Displays

One valuable graphic display is an on-going measurement of system performance. This gives you a continuous record of how well your system is utilized and lets you see whether you are getting the performance you originally specified.

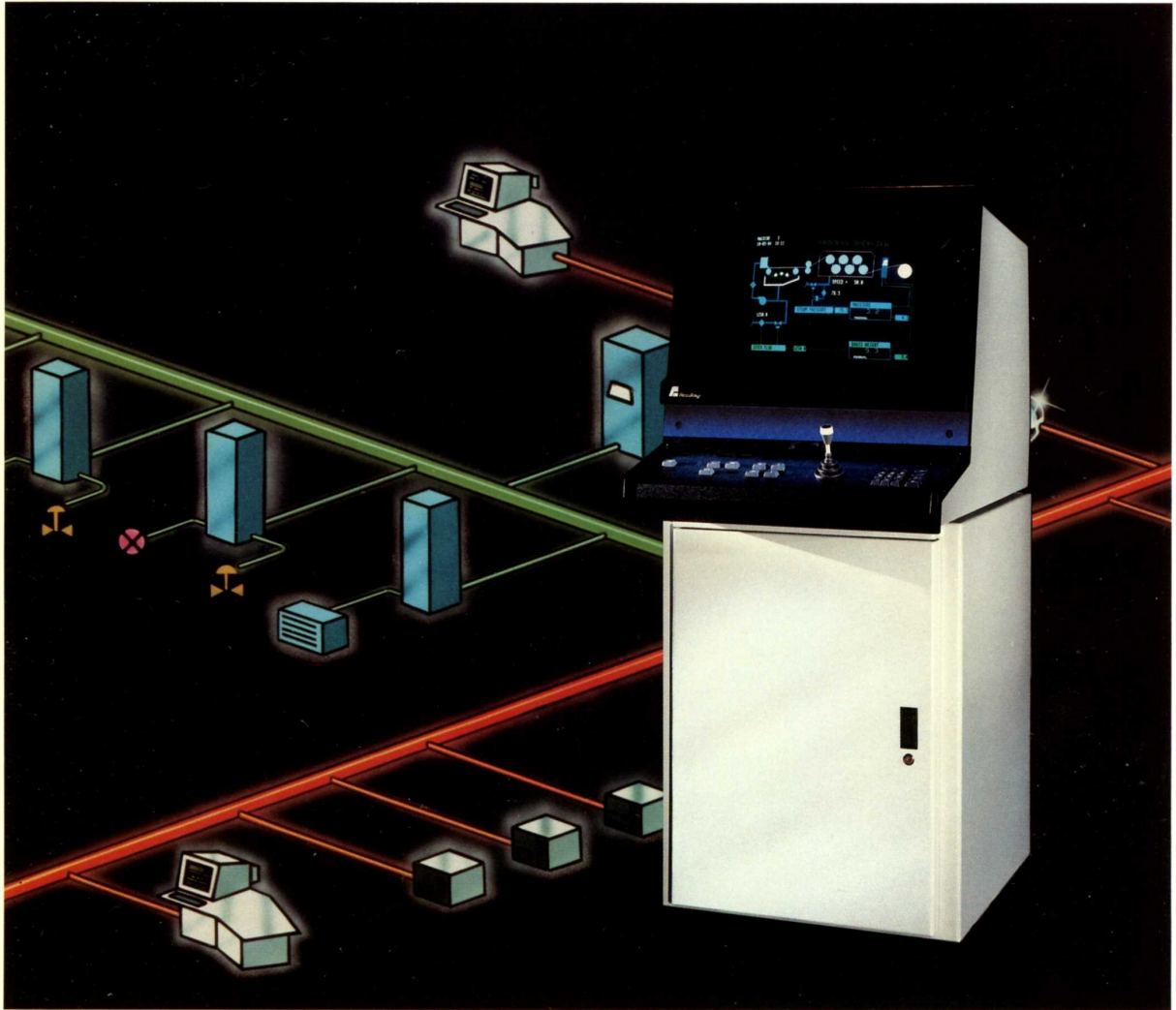


Easy to use graphic symbols let you construct an overview of any process and see problem areas quickly. Detailed displays of each of the areas shown can be depicted in subsequent displays.





# DeltaComm™ Is Compatible



As DeltaComm is your interface with the AccuRay 1180 MICRO system, it is fully compatible with distributed control systems and information networks such as:

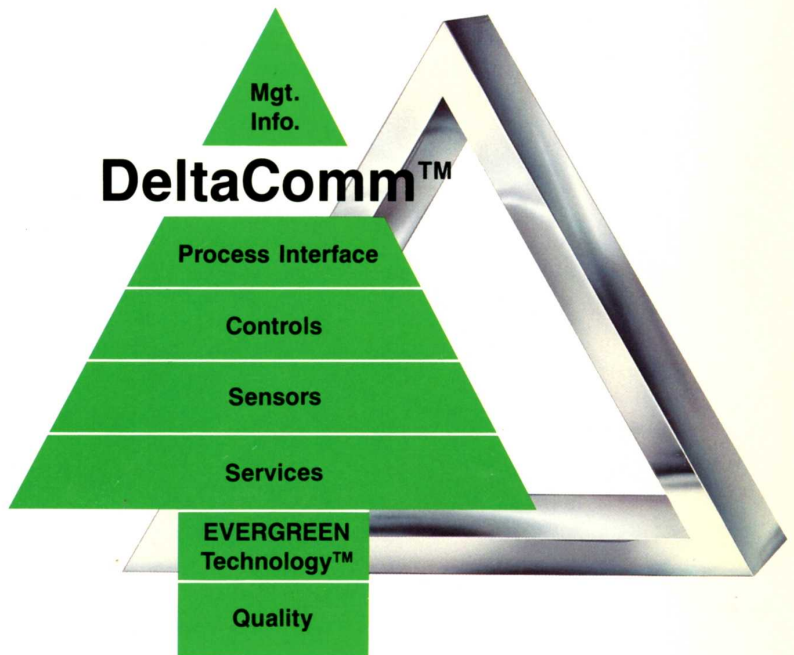
- Honeywell TDC 3000
- Foxboro Spec 200
- Foxboro Interspec
- Fisher Provox
- Taylor Mod 3
- Valmet Damatic
- Bailey Network 90

A special marketing agreement between AccuRay and Honeywell now provides a way to integrate all mill control systems into a total mill management network. This advanced communications ability among all levels of mill management, is one of the most important reasons why AccuRay DeltaComm should be the newest team member of your millwide system structure.

# Newest Enhancement to a Time-proven System

As the user interface is the most visible part of a measurement and control system, some people may think that DeltaComm is a brand new system. However, DeltaComm is simply an improved feature that will be part of every new 1180 MICRO system. In addition it can also be added to any existing 1180 MICRO system.

The 1180 MICRO was developed in 1975, based on a foundation of quality and EVERGREEN Technology™. Since that time we have developed more than 650 features for the system including new sensors, control technology changes and links to higher level management information systems. New trends in paper machine management now call for an improvement in the user interface — DeltaComm.



## The EVERGREEN Guarantee

Eight years ago, AccuRay recognized the problem of system obsolescence and sought a way to protect customers. The answer was the 1180 MICRO system, designed around a modular or EVERGREEN Technology philosophy.

Today, eight years later, AccuRay announces DeltaComm. And as a result of EVERGREEN Technology, this new user interface can be added to any 1180 MICRO system ever sold.

**AccuRay DeltaComm...**  
**a better way to view your changing world.**



650 Ackerman Rd., Columbus, Ohio 43202 U.S.A.

Coronation Rd., High Wycombe, United Kingdom HP123TA

55 Ayer Rajah Crescent #07-17/19, Ayer Rajah Industrial Estate, Singapore 0513





Wisconsin Tissue Mills, Menasha, Wisconsin • George N. Wall, Operations Manager

# Honeywell and AccuRay bring the vision of mill-wide integrated systems to life.

For years, managers have anticipated the lower costs, increased through-put and quality assurance benefits a fully integrated mill would offer. Today, these bottom line benefits are a reality. AccuRay, the leading supplier of application-oriented measurement and control systems for the pulp and paper industry, has joined forces with Honeywell, the world leader in distributed digital information and control systems.

Honeywell's TDC 3000 is designed to provide the platform for mill-wide integration as well as efficient control of power house, chemical recovery and bleach plant areas.

The AccuRay 1180 Micro System, in conjunction with TDC 3000, provides accurate,

on-line paper machine control. Plus, implementing its control software in the TDC 3000 system, AccuRay enables precise control of digester operations. And no other supplier can match AccuRay's control technology experience in the sophisticated area of cross machine control.

Quite simply, Honeywell and AccuRay, with two field proven systems, can deliver today what others only envision: An integrated mill management network.

For the complete story on how Honeywell and AccuRay together can improve your bottom line, call the Honeywell/AccuRay Hotline—1-800-328-5111, ext. 206. (In Minnesota, call 1-612-870-2142, ext. 206.)

**Together, we can find the answers.**

## Honeywell