



**Chatsworth Data Corporation**  
www.chatsworthdata.com

# ACP-2200

## Dual Sided Optical Mark Reader



- **Keyless Data Entry**
- **Reads Up To 1,500 Forms Per Hour**
- **Graded Index Fiber Read Heads**
- **Portable, Light Weight Design**
- **Accessible Card Path**

*Chatsworth Data Corporation has been developing and manufacturing optical mark readers since 1971.*

*The company currently supplies markets as diverse as education, industry, government, medical, beverage, lottery, survey, vote tabulation, securities trading, dating services, and many more.*

*The ACP-2200 was specifically developed to support unique data requirements of vote tabulation, ballot processing, health risk appraisal, medical history, and patient procedure billing applications.*

*The small footprint, lightweight, and portability of this OMR lends itself well for use in polling centers, voting booths, medical clinics, nurses stations, doctor's offices, kiosks, and is ideal for use in remote locations when coupled with a laptop computer.*

*The available Serial or USB protocol provides a reliable and easy-to-use interface to P.C. or MAC computers.*

*A software development kit is available for application developers. The kit includes a MS/Visual Basic source code project containing OMR configuration commands, communication interface, mark translation module, and data file output.*

The Model ACP-2200 Optical Mark Reader is the latest design developed by Chatsworth Data Corporation for applications that require processing of data from both sides of a form in a single pass. The ACP (Accessible Card Path) design was specifically developed for use in commercial, ballot processing, and medical applications incorporating a unique feature which allows easy access to the card path and optic lens for clearing obstructions and performing preventative maintenance on the unit.

Significantly faster than keyboard entry, the ACP-2200 reads both sides of an input form automatically and without error as it scans and transports data. Once the form has been scanned, the resulting data string is terminated by a carriage return (CR) and is automatically transported to the communication port of the attached computer.

RS-232C Serial communications is standard on the APC-2200. USB (Universal Serial Bus) is an available option.

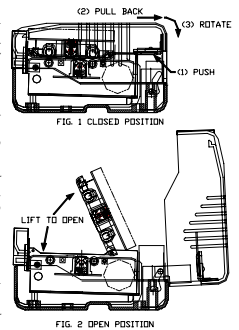
The operator and the speed of the computer control the processing speed of the forms. However, most 11-inch forms can be scanned at a rate of 1,500 to 1,800 forms per hour.

The ACP-2200 utilizes "Visible Red" illumination reads black or blue marks made with a ballpoint pen or felt-tip pen as well as pencil, punched and pre-printed marks. Background printing must be in the visible red range. "Infra Red" illumination is available as an option for pencil only marking with colored background printing.

A number of downloadable commands are available to modify the default configuration of the ACP-2200 to support a wide variety of form designs and application requirements.

The Model ACP-2200 is supplied complete with an external Universal Power Supply (100-240V / 47-63Hz), Serial or USB Cable (Macintosh or PC), Operator Guide, Test Cards, and a Utility Software Disk.

The durable design, simplicity of use, and versatility of the ACP-2200 makes it an ideal device for a wide variety of data gathering applications.



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### Specifications

**Paper Path:**

The ACP-2200 Reader has a paper path that is easily accessible for clearing jams and cleaning the optic head. A simple hinged connection allows the upper assembly to open for complete access to the paper path

**Scan Area:**

Reads up to 12 rows at .25-inch centers with 80 mark positions per side.

**Interface/Baud Rate:**

RS-232C asynchronous (PC Serial) from 300-38400 Baud  
USB (available as an option)

**Data Output:**

Binary ASCII Values

**Form Size:**

3-1/4 inches x 5 inches to 3-1/4 inches x 12 inches (8.2 cm x 12.7 cm to 8.2 cm x 30.5 cm)

**Form Marking (Visible Red):**

#2 Pencil  
Blue or black ballpoint pen  
Blue or black felt-tip pen

**Scanning Speed:**

20 inches (38.18 cm) per second  
Approx. 25-30 cards per minute

**Read Technique:**

Graded index fiber, double sided, manual feed

**Feed Method:**

Manual insertion with powered transport  
Feed through  
Approx. 25-35 cards per minute

**Paper Weight:**

18 to 100 lb. bond, ledger, index or OCR from .004 inch to .010 inch thick

**Microprocessor:**

Motorola 68HC12

**Timing Track Alignment**

In-Line (data mark area between leading and trailing edge of timing mark).

**Timing Track Selection:**

Select Top (right) / Bottom (left) for the location of the timing track

**Dimensions:**

6.75 inches wide x 4.18 inches high x 7.18 inches long  
(171.45 mm wide x 106.17 mm high x 182.37 mm long)

**Power:**

Universal power adapter  
100 - 240 VAC  
47 - 63 Hz

**Operating Conditions:**

41-113 degrees Fahrenheit  
(5-45 degrees Centigrade)  
30% to 80% humidity, non-condensing

**Weight:**

4 lbs (1.8kg) - Shipping Weight 6 lbs (2.7kg) with universal power adapter.

**Infrared (Optional):**

#2 Pencil only  
Key punched slots  
Pre-printed marks

## OMR-Forms

Form design and printing are integral parts of developing and implementing a successful application. The Chatsworth Data ACP-2200 allows flexibility in form design and construction. Our design department is available to assist in developing custom forms or they can recommend printers to assist you in design and production.

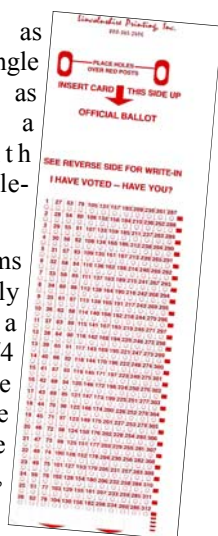
If you prefer to produce your own forms, a manual providing specifications for design and production is available.

Design can be as simple as a single cut card or as complex as a booklet with multiple double-sided forms.

Full-page forms are used by simply placing a microperf 3-1/4 inches from the right edge of the form leaving the left side of the form available for questions, instructions, etc.



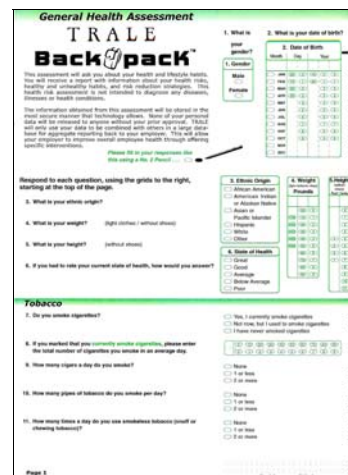
Front side Back side



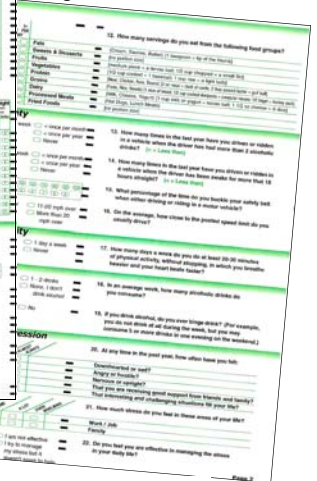
Another common design places two perforations on a full sheet leaving a 2-inch tab on the left for logo, marking instructions, etc., resulting in two double-sided cards per form increasing the amount of scannable data area.

When the form has been completed, the scannable portion of the form is separated at the perforation and inserted into the OMR.

If your application requires extensive text and responses, an 8 1/2 x 11-inch multiple page form, or booklet, can be used to administer the more complex surveys or questionnaires.



Front side



Back side