DuraPAC™ is a fully sealed, small and light industrial portable computer designed for use in extremely harsh environments. DuraPAC is designed to survive industries' "lethal zones"—applications where laptops and conventional portables die. This ultra-tough portable was developed to take the every day punishment industrial working tools are exposed to. It was designed to survive situations like remote field service, on-site maintenance, flightline systems analysis, geophysical exploration, shipboard exposure, factory floor environments, deployed military C5I, and more.

Overview
For field ruggedness, DuraPAC's case is formed from corrosion protected aluminum, designed to shield the internal components from up to 50 Gs of shock. For environmental protection, DuraPAC is weatherproof and NEMA/IP rated, secured from the elements by a series of "O" ring seals and custom closures that protect it from the rigors of the outside world.

Serving outdoor applications, all exposed connectors and switches are NEMA/IP66 rated. Further, the enclosure is wrapped in a formed, woven "Flak Jacket". This ultra-tough ExoSkin™ provides additional impact protection and is scratch resistant. The DuraPAC is intended to operate in outdoor environments where rain, blowing dust or snow are common occurrences.

The fold-up keyboard protects the 12.1" hi-bright SVGA TFT display. This 210-nit active matrix screen provides high readability even in bright ambient light conditions. Add-in expansion is via two PCMCIA type II/one type III slots or two PC/104 modules. Worldwide functionality is assured by 110/220 VAC augmented by an external 12 VDC adapter.

- Fully Sealed Case — Dust, Drip & Rain Proof
- Drop Proof — 36" Free Drop (~1 Meter)
- Add-in Expansion — PCMCIA and PC/104
- Hi-Bright TFT Screen — 12.1" SVGA
- Wide Temperature Range — 0° to 50°C

Ultra-Rugged Design
Unlike common laptops, the DuraPAC has an all-metal case surrounded by a shock-absorbent outer skin, a "Flak Jacket", so called for its uncompromising protection from impact, damaging vibration and abrasion. Like a padded waterproof glove, DuraPAC's proprietary engineered ExoSkin conforms snugly to the case contours, soaking-up hazardous impact, shock and vibration.

A three-layer design, the ExoSkin has a force-absorbing component at its center, bonded to a coarse-weave abrasion-resistant outer layer. A resilient inner layer conforms to DuraPAC's metal case. The tough metal enclosure allied with its Flak Jacket forms a combination that allows the DuraPAC to survive a three-foot drop to concrete. DuraPAC's ExoSkin resists scrapes, scratches and dents, and provides water and UV resistance.

Add-In Expansion
The DuraPAC provides two expansion options. First, two type II/one type III PCMCIA slots are provided. These slots are positioned at the rear of the unit and are protected by a sealed door that is easily opened for access. As the two type II slots are co-located in the same opening, one type III card may be installed instead of two type II cards.
Should the user desire PC/104 compatibility, the PCMCIA capability can be deleted and replaced with one or two PC/104 modules. Blank connector openings and uncommitted connectors are provided for I/O. Special mechanical configurations are also available for customer-specific applications.

**Environmental-Proof Keyboard**

DuraPAC's keyboard is a removable, completely sealed, AT compatible keyboard. It features 86 full-size keycaps, 12 function keys, and dedicated cursor keys. It combines a full-size ASCII layout with an integral center-mounted sealed pointing device, ensuring Windows® compatibility. The keyboard is designed for the industrial user needing NEMA 4 protection but wanting the quality touch and feel of an office keyboard. It has a 24-inch coiled cord that plugs-in to the front panel via a waterproof connector assembly. The keyboard rests in a compliant cavity in DuraPAC's ExoSkin. This cavity forms a hinged panel that cradles the keyboard both when open, in operation and when closed. The keyboard can be removed from its cavity for laptop use.

**Universal Power Adaptability**

Usable in any country, DuraPAC accepts power from any 90 to 265 VAC 50-60 Hz source, or from a 12 VDC auto cigarette lighter outlet (using the included adapter). The system draws a minimal 40 watts of power and supports Windows® Power Management.

**Sunlight Readable Displays**

DuraPAC's standard display is a high-brightness 12.1" SVGA 800 x 600 active matrix TFT screen with 210-nit brightness. This display has an ultra-wide viewing angle and is far brighter than common laptop screens, showing greater clarity. Optionally, a super-high-bright sunlight-readable 12.1" screen is available that outputs 800-nits. For reference, standard laptop screens have brightness ratings of about 100 to 150-nits. They are almost unreadable when used outside. Dolch's super high-bright system combines a high-power backlight with continuous dimming control — complete control from bright sun to a dark nighttime environments.
Overview
The FieldPAC™ raises the standard of size-efficiency and ruggedness for expandable computers used in field and portable applications. Encased in a deep-drawn, corrosion-proof aluminum enclosure, FieldPAC withstands the daily rigors of transport, setup and operation in demanding conditions.

FieldPAC incorporates key features derived from Dolch’s decade of experience developing expandable portable industrial computers. Integrated into the ultra-rugged case is an upgradeable Pentium® MMX computer module mated to a huge 14.1” XGA TFT display. This combination provides desktop performance with survivability in field environments.

For add-in application expansion, a user definable full-size ISA or PCI expansion slot is provided, along with two standard PCMCIA/CardBus slots. With substantial compute power, a brilliant display and flexible expansion, the FieldPAC is the platform of choice for network/communications testing, field data acquisition, in-vehicle monitoring and as a technology demonstrator.

Ultra-Rugged Caseworks
FieldPAC’s ultra-thin attache enclosure is formed from two matched case halves, deep-drawn from anti-corrosion-coated 6061 aluminum alloy. The top and bottom halves are aligned by matched, bonded structural extrusions, one with an o-ring seal mated to the other at a compression flange. FieldPAC’s internal elements are completely sealed from external environments with the case closed.

- Rugged All-Metal Attache Enclosure
- Ultra-Thin 3-Inch Thick Form Factor
- Huge 14.1” XGA Active Matrix Display
- Full-Size ISA or PCI Expansion Slot
- Two PCMCIA/CardBus Expansion Slots
- Integral CD-ROM, Sound Chip and Speakers

FieldPAC All-Metal Attache Rugged Portable Computer

The infinitely adjustable upper display-section pivots on two high-strength constant-torque hinges. Positive-action latches are provided to secure the unit in the closed position. This combination creates an extremely stiff and rugged enclosure that blocks the outside environment when latched. An integral carry handle is provided along with shock absorbing feet for protection both when standing or when operating.

Impact-Protected Hard Disk Drive
To further improve survivability in hostile environments, FieldPAC’s HDD is encased in a Sorbothane™ cocoon that absorbs shock and vibration caused by impact, drop and transport. Other key system elements are interlocked together with the internal structure to provide tortional rigidity, strength and impact protection.

Add-In Expansion
FieldPAC offers two types of add-in expansion, ISA/PCI boards and PCMCIA/CardBus PC cards.

FieldPAC's ISA/PCI expansion-bay allows the installation of one full-length, full-height add-in board without disassembling the unit. The expansion bay cover (underneath the detachable keyboard) removes easily for rapid field installation of either an ISA or PCI function board. The add-in board can
be of the maximum size as defined by the AT specification, (4.8" x 13.345" x .8") and can even have a "skirt" along its lower half without causing a fit problem. An integral card retention bracket adjusts in two axes to allow precise positioning for retention of all sizes and shapes of add-in boards.

Complementing FieldPAC's expandability are two type II/one type III PC/CardBus slots. These slots are protected when the cover is closed.

Massive XGA Display Screen
FieldPAC is designed to support extremely large viewing areas for multi-window applications. With a display area as large as a 15" CRT monitor, the 14.1" XGA active matrix TFT screen provides more display area than any other portable computer. This display is driven by a PCI-interfaced Chips and Technologies 65550 flat-panel video controller backed by 2 MB VRAM. Connection to the screen is via a high-bandwidth low-radiation PanelLink™ differential interface.

Globe Hopping Versatility
Usable anywhere in the world, FieldPAC accepts power from any 90 to 265 VAC 50-60 Hz source, or from a 12 VDC cigarette lighter outlet (using the included adapter). The system draws a minimal 40 watts power and supports Windows 95 Power Management.

Full-Size Keyboard and Pointer
FieldPAC's generous full-size 104/105 key keyboard is removable and has a two-foot coiled cord that stows in a dedicated cable well. The keyboard's integrated VersaPad™ pointing device responds to finger or stylus input and can be operated with a gloved hand without performance degradation. US and international keyboards are available.

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
<th>APPROVALS</th>
<th>OPERATING TEMPERATURE</th>
<th>WEIGHT</th>
<th>DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU TYPE: Pentium MMX 166,200 &amp; 233 MHz.</td>
<td>UL, TÜV</td>
<td>0° to 50° C</td>
<td>15 lb.</td>
<td>Height 3.0&quot; 7.62 cm. (Display Closed)</td>
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<tr>
<td>DRAM: 32 MB Std. 64 MB and 128 MB Opt.</td>
<td>Safety Emissions</td>
<td></td>
<td>6.8 kg.</td>
<td>Height 16.0&quot; 40.60 cm. (Display Open)</td>
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<tr>
<td>EXTERNAL L2 CACHE: 512 KB</td>
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<td></td>
<td></td>
<td>Depth 13.0&quot; 33.00 cm.</td>
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<tr>
<td>HARD DISK DRIVE: 2.5&quot; GB Std. – 4 GB Opt.</td>
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<td></td>
<td></td>
<td>Width 18.00&quot; 45.70 cm.</td>
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<tr>
<td>FLOPPY DRIVE: 3.5-inch, 1.44 MB</td>
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<tr>
<td>CD-ROM DRIVE: Multi-Speed (24X Min.) CD-ROM</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>PCMCIA/CardBus SLOTS: Two Type II/One Type III</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISPLAY SYSTEM: 14.1&quot; Active Matrix Color TFT – 1024 x 768</td>
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</tbody>
</table>

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Portable Instrumentation Platform
MegaPAC is the first portable computer platform designed with the utility and the massive expandability needed for demanding test, instrumentation and communications applications. With 10 expansion slots and 350 watts of power, the self-contained MegaPAC offers add-in capability previously found only in bulky rack-mount or transportable systems.

Completely Self-Contained
MegaPAC has been designed from the ground up with the mobile technical professional in mind. It's a complete, self-contained system with a 10.4" color display, fold-down/removable keyboard and a carry handle/tilt stand. Thoughtful attention to detail is shown by MegaPAC's rear floor-standing feet, that also double as a cable wrap to stow the 9' industrial grade power cord.

Massive 10 Slot Add-In Expansion
Up to six ISA, three PCI and one shared full-size ISA/PCI expansion slots are available. MegaPAC's passive backplane can even accept cards with "skirts" – the projections on add-in cards that interfere with conventional mother board components when add-in cards are plugged in.

Thermostatic Positive Pressure Cooling
MegaPAC's cooling system employs a temperature sensing and alarm module that controls the speed of its three high capacity fans to maintain proper internal temperature. Cooling air is drawn through a two stage metal wool filter, directed across the add-in cards, and expelled at the rear of the unit. An auxiliary fan assures proper airflow through the power supply. This system allows MegaPAC to operate at up to 50° C, with an alarm and auto-shutdown should the temperature exceed the limit. In addition, when the temperature is moderate, a "quiet" mode slows the fans, reducing unnecessary sound.

Dolch MegaPAC Rugged Multi-slot Portable PC

Crash-Cart Ruggedness
MegaPAC's design incorporates a unique dual-chassis structure that "floats" the inner case from the external chassis using an eight-point IsoGuard™ shock isolating matrix. This technique allows harmful shock and vibration energy to be absorbed before it can effect the system’s internal components or add-in boards. Overtravel snubbers are mounted between the two chassis in case of transit drops or severe impact.

Add-in boards are restrained by Dolch's patented card retention system. It offers individually positionable hold-downs that retain add-in cards regardless of height or length.

Potent Processing Power and Brilliant Displays
MegaPAC incorporates the latest in Pentium™ processor technology with CPU speeds up to 180 MHz and memory configurations to 128 MB. Hard drives to 9 GB can be specified along with a multi-speed CD-ROM or any other half-height peripheral. Two brilliant 10.4" TFT displays are offered with either VGA or SVGA resolution, and with Dolch's proprietary VIPER flat panel controllers, can display up to 16.7 million colors. Both displays are equipped with black matrix anti-glare technology and deliver 100 to 1 contrast ratios.
## TECHNICAL SPECIFICATIONS

### PROCESSORS & MEMORY
- **CPU**: Pentium, Single Board CPU
- **DRAM**: 8 MB Standard, 16, 32, 64 and 128 MB Optional

### HARD DISK DRIVE
- 3.5" 1.2 GB Standard, 9.0 GB Optional

### FLOPPY DRIVE
- 3.5-inch, 1.44 MB Slimline

### OPTIONAL DRIVES
- Quad Speed CD-ROM/Tape Backup

### PCMCIA SLOTS (Optional)
- Two Type II/One Type III

### DISPLAY SYSTEMS
- **Dimensions**
  - Non-Operating: 10-55 Hz, 0.2 mm
  - Operating: 15,000 Ft, 4615 Meters

### MECHANICAL
- **Dimensions**
  - Height: 7.5" 19.2 cm
  - Depth: 16.5" 42.0 cm
  - Width: 14.4" 36.6 cm
- **Construction**
  - Aluminum Alloy Front/Rear Bezels, Chassis & Covers
- **Weight**
  - Standard System w/o CD-ROM/Tape: 25 Lb 11.4 Kg

### EXPANSION
- **Add-in cards**
  - 10 Full-size ISA/PCI
  - 6 ISA, 3 PCI, 1 ISA/PCI

### ENVIRONMENTAL
- **Enclosure Class**
  - DIN 40050, NEMA Rating: IP52, NEMA 5

### ELECTRICAL
- **System Input**
  - Voltage: 90-138/180-265 VAC
  - Frequency: 47 to 63 Hz
- **Power Consumption**
  - Non-Operating: 200 Watt Supply, 250 Watts Max
  - Operating: 350 Watt Supply, 400 Watts Max

### ELECTRONIC COMPATIBILITY
- **FCC** Part 15, Subpart B, Class B
- **CE Mark**
- **UL**, **CSA**, **TUV**

### SAFETY
- **Approvals**
  - IEC 950 Requirements
- **MTBF**
  - 5,000 Hr Calculated
- **MTTR**
  - 30 Minutes

---

**Front**

**Right Side**

**Standing Operation**
Shock and Vibration Resistant
The NotePAC is an expandable, ultra-rugged, all-metal notebook computer designed for extreme environments.

It combines a sealed high-strength, cast-alloy case with special components and shock mounting to form a portable platform that can withstand a 15 G shock while operating and still survive. Slip out the removable DataPak™ hard drive and it will withstand 40 Gs while operating.

Additional vibration protection from Isoguard™ mounting technology lets the NotePAC operate continuously in 2 G random vibration environments such as found in rotary winged aircraft and off-road vehicles.

Two Types of Expansion
For applications requiring add-in expansion, the standard NotePAC comes with two PCMCIA type II slots, useable as one type III slot. Also available is a GPS receiver that takes the place of the floppy drive.

For greater add-in capability, you can specify an OmniSlice™ module, expanding the NotePAC by either one ISA AT card or two PC104 modules.

TFT and Sunlight Readable Displays
The NotePAC is available with two displays, a huge 12.1" 800 x 600 pixel active matrix SVGA color display, or for outdoor use, a crisp sunlight readable 640 x 480 TSTN VGA monochrome screen. This superior outdoor screen displays 256 grey shades with an outstanding contrast ratio in direct or diffused sunlight.

Internal and External Power
The NotePAC accepts power from AC or DC sources. It accepts 110/220 VAC, 50/60 Hz and from 12 to 16 VDC. An optional converter extends the DC range to 28 VDC.

- Sealed/Rugged - High-Strength Alloy Casing
- Impervious to Shock and Vibration - 40Gs
- Splash and Drip Proof - Runs in the Rain
- Sealed Envelope - Requires No Fans or Filters
- OmniSlice Expansion Modules
- Add an ISA Card and/or CD-ROM
- Internal Battery Power - up to 1.5 Hours
- Sunlight Readable Display for Outdoor Use

A standard internal 2.4 A/H battery is provided that powers the unit and any expansion cards. The standard unit will operate 1.5 to 2 hours on a fully charged pack. With a 10 watt (max) expansion card it will operate for about one hour. The battery can be swapped in the field for a fully charged pack to continue operation beyond normal single battery capacity.

CPUs and Storage
The standard NotePAC configuration includes a powerful Intel® 486 DX4-100 CPU with Pentium® 100 and 133 MHz processor options. Expand memory from the standard 4 MB up to 32 MB. Also, the NotePAC is Windows 95™ ready with a sealed waterproof integral pointing device and a sealed 86-key, waterproof keyboard.

Storage is provided by a standard removable 810 MB hard drive that can be upgraded to 1.2 GB. All drives are small-form-factor, 2.5" ruggedized units mounted in a DataPak™ shielded metal cartridge that slides into the side of the NotePAC. A standard 3.5" floppy drive is accessed from the opposite side.

NotePAC is the most rugged, compact and environmentally protected notebook computer available. It combines MIL-STD inspired packaging with flexible add-in expansion capability, and is designed to stay alive when other computers die.
# Technical Specifications

## Processors & Memory
- **CPU Type**
  - 80486DX4-100 MHz
  - Pentium 100 MHz
  - Pentium 133 MHz
- **DRAM**
  - 4 MB Standard, 8, 16 and 32 MB Optional
- **Hard Disk Drive**
  - 2.5" 810 MB Standard, 1.2 GB Optional
- **Floppy Drive**
  - 3.5-inch, 1.44 MB
- **Optional Drives**
  - Multispeed CD-ROM
- **PCMCIA Slots**
  - Two Type II/One Type III

## Display Systems
- **Display Types**
  - 12.1" Active Matrix Color TFT, SVGA 800 x 600
  - 9.5" Sunlight Readable TSTN, VGA 640 x 480
- **Video Controller**
  - 32-bit Local Bus Video Controller
  - 1 MB Memory
- **External Display Support (with expansion bar)**
  - 640 x 480, 800 x 600, 1024 x 768
  - Simultaneous External Display at 800 x 600

## General
- **Software Compatibility**
  - MS-DOS®, Windows™ (all versions), Windows NT™, OS/2®, and, SCO® UNIX®
- **Serial Interface**
  - Two RS-232 Ports
- **Parallel Ports**
  - Bi-directional, Enhanced Parallel Port
- **Keyboard & Pointing Device**
  - AT Compatible, 86-key
  - Key Switches
  - Industrial Silicon Rubber
  - Pointing Device
  - Sealed Waterproof, MicroModule

## Electrical System
- **Input Voltage**
  - 12 to 16 Volts DC
  - 110/220 VAC, +/-10% 47 to 63 Hz
  - AutoSensing/AutoSwitching
- **Main Battery**
  - Internal Ni-MH - 12V, 2.4 A/H
  - (-100 minute operation w/o OmniSlice)
- **Power Consumption**
  - Standard Unit: 20 W Max
  - Unit with OmniSlice: 30 W Max
  - Power Management
    - Doze, Sleep, Suspend
  - Optional STATPack™ DC Power Pack
    - 15 AH Rechargeable Battery Pack
    - (yields up to 10 hours operation)

## Mechanical
- **Construction**
  - Machined Aluminum Alloy Casting
  - Anti-corrosion Coating
- **Display Panel**
  - 180 tilting panel, anti-blacklash hinges
- **Dimensions (standard unit)**
  - Height: 3.0", 7.5 cm (display closed)
  - Height: 3.1", 7.9 cm (display open)
  - Depth: 10.4", 26.4 cm
  - Width: 13.4", 34.0 cm
- **Dimensions (with OmniSlice installed)**
  - Height: 4.1", 10.5 cm (display closed)
  - Height: 4.5", 11.4 cm (display open)
  - Depth: 10.4", 26.4 cm
  - Width: 13.4", 34.0 cm

## Expansion
- **PCMCIA**
  - 2 Type II/One Type III
- **OmniSlice**
  - Standard Slice: 1/4 Length AT Card
  - Expansion Bar
  - Provides the Following Interface Signals:
    - Com 3 & 4 on Male DB9 Connectors
    - Parallel Port on Female DB25 Connector
    - Keyboard and Mouse on Female PS/2 Connectors
    - External CTR on Male DB15 Connector
    - SCSI on SCSI Female Connector

## Environmental
- **Enclosure Class**
  - IEC 529 NEMA 4
- **Operating Temperature**
  - 0°C to 50°C (32°F to 122°F)
  - Ext. Operating: -20°C to 50°C (-4°F to 122°F)
  - Non-Operating: -40°C to 70°C (-40°F to 158°F)
- **Rain Resistance**
  - MIL-STD-810E Method 506.3, Procedure 7
  - NEMA 4 Method 6.4.1
  - Dust Resistance
    - NEMA 4 Method 6.5.1.1
  - Humidity
    - 5%-95% (non-condensing)
  - Salt Fog
    - 5% Solution, 35°C, 48 Hr

## Electromagnetic Compatibility
- **Radiation**
  - FCC Part 15 Subpart B, Class B
- **Static Discharge**
  - IEC 801-2 Level 4
  - DIN VDE 0843-2
- **Contact Discharge**
  - 8 KV
- **Air Discharge**
  - 15 KV
- **Contact/Air Discharge**
  - 15/20 KV
- **Voltage Tolerances**
  - DIN VDE 0161
- **Pulses**
  - IEC 801-5 Level 4
  - DIN VDE 0843-5
- **Transient Bursts**
  - PS/Data/1-O Lines
    - IEC 801-4 Level 4
    - DIN VDE 0843-4
  - **EM Fields**
    - IEC 801-3 Level 3
    - DIN VDE 0843-3

## Safety/Conformance
- **Approvals**
  - CE Mark, UL, CSA, TÜV
  - IEC 950

## Reliability/Maintainability
- **MTBF**
  - 10,000 Hrs
- **MTTR**
  - 90 Minutes

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Shock and Vibration Resistant
The NotePAC™ is an expandable, ultra-rugged, all-metal notebook computer designed for extreme environments.

It combines a sealed high-strength, cast-alloy case with special components and shock mounting to form a portable platform that can withstand a 15G shock while operating and still survive. Slip out the removable DataPak™ hard drive and it will withstand 40Gs.

Additional vibration protection from Isoguard™ mounting technology lets the NotePAC operate continuously in 2G random vibration environments such as found in rotary winged aircraft and off-road vehicles.

Two Types of Expansion
For applications requiring add-in expansion, the standard NotePAC comes with two PCMCIA type II slots, useable as one type III slot. Also available is an GPS receiver that takes the place of the floppy drive.

For greater add-in capability, you can specify an OmniSlice™ module, expanding the NotePAC by either one ISA AT card or two PC104 modules.

TFT and Sunlight Readable Displays
The NotePAC is available with either a huge 12.1" 800x600 pixel active-matrix SVGA color display or a 10.4" 640x480 pixel active-matrix VGA color display. For outdoor use, specify the NotePAC with a crisp, sunlight readable 640x480 TSTN VGA monochrome screen. This superior outdoor screen displays 256 grey shades with an outstanding contrast ratio in direct or diffused sunlight.

Internal and External Power
The NotePAC accepts power from AC or DC sources. It accepts 110/220 VAC, 50/60 Hz and from 12 to 16 VDC. An optional converter extends the DC range to 28 VDC.

- Sealed/Rugged - High-Strength Alloy Casing
- Impervious to Shock and Vibration - 40Gs
- Splash and Drip Proof - Runs in the Rain
- Sealed Envelope - Requires No Fans or Filters
- OmniSlice Expansion Modules
- Add AT Card or Two PC 104 Modules
- Internal Battery Power - up to 1.5 Hours
- Sunlight Readable Display for Outdoor Use

A standard internal 2.4 A/H battery is provided that powers the unit and any expansion cards. The standard unit will operate 1.5 to 2 hours on a fully charged pack. With a 10 watt (max) expansion card it will operate for about 1 hour. The battery can be swapped in the field for a fully charged pack to continue operation beyond normal single battery capacity.

CPUs and Storage
The standard NotePAC configuration includes a powerful Intel® 486 DX4-100 CPU. Expand memory from the standard 4 MB up to 36 MB. Also, the NotePAC is Windows 95™ ready with a sealed waterproof integral pointing device and a sealed 86-key, waterproof keyboard.

Storage is provided by a standard removable 500 MB hard drive that can be upgraded to 1.2GB. All drives are small-format-factor, 2.5" ruggedized units mounted in a DataPak shielded metal cartridge that slides into the side of the NotePAC. A standard 3.5" floppy drive is accessed from the opposite side.

NotePAC is the most rugged, compact and environmentally protected notebook computer available. It combines MIL-STD inspired packaging with flexible add-in expansion capability, and is designed to stay alive when other computers die.
### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>PROCESSORS &amp; MEMORY</th>
<th></th>
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<tbody>
<tr>
<td>CPU Type</td>
<td>80486DX4-100 MHz</td>
</tr>
<tr>
<td>DRAM</td>
<td>4 MB standard, 8, 16 and 36 MB optional</td>
</tr>
<tr>
<td>HARD DISK DRIVE</td>
<td>2.5&quot; 500 MB standard, 1.2GB optional</td>
</tr>
<tr>
<td>FLOPPY DRIVE</td>
<td>3.5-inch, 1.44 MB</td>
</tr>
<tr>
<td>OPTIONAL DRIVES</td>
<td>Multiprocess CD-ROM</td>
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<tr>
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<tr>
<td>Display Types</td>
<td>12.1&quot; Active Matrix Color TFT, SVGA 800x600</td>
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<tr>
<td></td>
<td>10.4&quot; Active Matrix Color TFT, VGA 840x480</td>
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<tr>
<td></td>
<td>9.5&quot; Sunlight Readable TSN, VGA 640X480</td>
</tr>
<tr>
<td>Video Controller</td>
<td>32 bit local bus video controller</td>
</tr>
<tr>
<td>1 MB Memory</td>
<td></td>
</tr>
<tr>
<td>External Display Support (with expansion bar)</td>
<td></td>
</tr>
<tr>
<td>640x480, 800x600, 1024x768</td>
<td></td>
</tr>
<tr>
<td>Simultaneous External Display at 800x600</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GENERAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Compatibility</td>
<td>MS-DOS, Windows (all versions), Windows NT, OS/2, and, SCO UNIX</td>
</tr>
<tr>
<td>Serial Interface</td>
<td>Two RS-232 Ports</td>
</tr>
<tr>
<td>Parallel Ports</td>
<td>Bi-directional, Enhanced Parallel Port</td>
</tr>
<tr>
<td>Keyboard &amp; Pointing Device</td>
<td>AT Compatible, 86-key</td>
</tr>
<tr>
<td></td>
<td>Key Switches</td>
</tr>
<tr>
<td></td>
<td>Industrial Silicon Rubber</td>
</tr>
<tr>
<td></td>
<td>Pointing Device</td>
</tr>
<tr>
<td></td>
<td>Sealed waterproof, MicroModule</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>ELECTRICAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>System Input</td>
<td></td>
</tr>
<tr>
<td>Input Voltage</td>
<td>12 to 16 Volts DC</td>
</tr>
<tr>
<td></td>
<td>110/220 VAC, +/- 10% 47 to 63 Hz</td>
</tr>
<tr>
<td>AutoSensing/Auto Switching</td>
<td></td>
</tr>
<tr>
<td>Main Battery</td>
<td>Internal Ni-MH - 12V, 2.4 A/H</td>
</tr>
<tr>
<td></td>
<td>(~100 minute operation w/o OmniSlice)</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Standard Unit: 20W Max</td>
</tr>
<tr>
<td></td>
<td>Unit with OmniSlice: 30W Max</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power Management</th>
<th>Doze, sleep, suspend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional STATpack DC Power Pack</td>
<td>15 A/H Rechargeable Battery Pack</td>
</tr>
<tr>
<td>(Gives up to 10 Hours operation)</td>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th>MECHANICAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>Machined Aluminum Casting</td>
</tr>
<tr>
<td></td>
<td>Anti-corrosion coating</td>
</tr>
<tr>
<td>Display Panel</td>
<td>180 (tilting panel, anti-blacklash hinges)</td>
</tr>
<tr>
<td>Dimensions (Standard Unit)</td>
<td>Height 3.0&quot;, 7.5 cm (Display Closed)</td>
</tr>
<tr>
<td></td>
<td>Height 13.1&quot;, 33.3 cm (Display Open)</td>
</tr>
<tr>
<td></td>
<td>Depth 10.4&quot;, 26.4 cm</td>
</tr>
<tr>
<td></td>
<td>Width 13.4&quot;, 34.0 cm</td>
</tr>
<tr>
<td>Dimensions (With OmniSlice Installed)</td>
<td>Height 4.1&quot;, 10.5 cm (Display Closed)</td>
</tr>
<tr>
<td></td>
<td>Height 14.5&quot;, 36.0 cm (Display Open)</td>
</tr>
<tr>
<td></td>
<td>Depth 10.4&quot;, 26.4 cm</td>
</tr>
<tr>
<td></td>
<td>Width 13.4&quot;, 34.0 cm</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Weight</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard System</td>
<td>14.3 Lb 6.5 Kg</td>
</tr>
<tr>
<td>Unit with Slice</td>
<td>16.9 Lb 7.7 Kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXPANSION PCMCIA</th>
<th>2 type II/one type III</th>
</tr>
</thead>
<tbody>
<tr>
<td>OmniSlice Standard Slice</td>
<td>1 3/4 Length AT card</td>
</tr>
<tr>
<td></td>
<td>2 PC 104 Cards</td>
</tr>
<tr>
<td></td>
<td>1 CD, 1 1/2 length AT</td>
</tr>
</tbody>
</table>

| Expansion Bar        | Provides the following interface signals: Comm 3 & 4 on Male DB9 Connectors Parallel Port on Female DB25 Connector KBd/Note on Female PS/2 Connectors External CRT on Male DB15 Connector SCI on SCI Female Connector |

<table>
<thead>
<tr>
<th>ENVIRONMENTAL</th>
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<tbody>
<tr>
<td>Enclosure Class</td>
<td>IEC 529, NEMA</td>
</tr>
<tr>
<td>Operating</td>
<td>IP66, NEMA 4</td>
</tr>
<tr>
<td>Non-Operating</td>
<td>IP66, NEMA 4</td>
</tr>
<tr>
<td>Temperature</td>
<td>0 to 50C 32 to 122F</td>
</tr>
<tr>
<td></td>
<td>-20 to 50C 4 to 122F</td>
</tr>
<tr>
<td></td>
<td>-40 to 70C -4 to 158F</td>
</tr>
<tr>
<td>Rain Resistance</td>
<td>MIL-STD-810E</td>
</tr>
<tr>
<td></td>
<td>Method 506.3</td>
</tr>
<tr>
<td></td>
<td>Procedure III</td>
</tr>
<tr>
<td></td>
<td>NEMA 4 Method 6.4.1</td>
</tr>
<tr>
<td>Dust Resistance</td>
<td>NEMA 4 Method 6.5.1.1</td>
</tr>
<tr>
<td>Humidity</td>
<td>5%-95% (non-condensing)</td>
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<tr>
<td>Salt Fog</td>
<td>5% Solution, 35C, 48Hr</td>
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<thead>
<tr>
<th>ENVIRONMENTAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Shock</td>
<td>IEC 68-2-27</td>
</tr>
<tr>
<td>Operating</td>
<td>15G 11ms 1/2 sine</td>
</tr>
<tr>
<td>Non-Operating</td>
<td>50G 11ms 1/2 sine</td>
</tr>
<tr>
<td>Drop</td>
<td>IEC 68-2-32</td>
</tr>
<tr>
<td>Free Drop</td>
<td>36&quot;, Free height drop to floor</td>
</tr>
<tr>
<td>Transit Drop</td>
<td>48&quot;, 26 Drops in Case per MIL-STD-810E Par. 516.4 Procedure IV</td>
</tr>
<tr>
<td>Bench Handling</td>
<td>4&quot;, 4 Unprotected Drops per MIL-T-28800E Par. 3.7.5.3. and 4.5.5.4.3</td>
</tr>
<tr>
<td>Vibration</td>
<td>IEC 68-2-6</td>
</tr>
<tr>
<td>Operating</td>
<td>10-55 Hz, 0.2mm</td>
</tr>
<tr>
<td>Non-Operating</td>
<td>55-500 Hz, 1.2G</td>
</tr>
<tr>
<td>Altitude</td>
<td>15,000 Ft 4615 Mtr</td>
</tr>
<tr>
<td></td>
<td>(1 Hour)</td>
</tr>
<tr>
<td></td>
<td>15,000 Ft 308 Mtr</td>
</tr>
<tr>
<td></td>
<td>(2 Hours)</td>
</tr>
<tr>
<td></td>
<td>40,000 Ft 12308 Mtr</td>
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<thead>
<tr>
<th>ELECTROMAGNETIC COMPATIBILITY</th>
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<tbody>
<tr>
<td>Radiation</td>
<td>FCC Part 15 Subpart B, Class B</td>
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<tr>
<td>Static Discharge</td>
<td>IEC 801-2, Level 4</td>
</tr>
<tr>
<td>Contact Discharge</td>
<td>DIN VDE 0843-2</td>
</tr>
<tr>
<td>Air Discharge</td>
<td>8KV</td>
</tr>
<tr>
<td>Contact/Air Discharge</td>
<td>15KV</td>
</tr>
<tr>
<td>Voltage Tolerances</td>
<td>DIN VDE 0161</td>
</tr>
<tr>
<td>Pulses</td>
<td>DIN VDE 0843-5</td>
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<tr>
<td>Transient Bursts</td>
<td>DIN VDE 0843-4</td>
</tr>
<tr>
<td>PS/Data/I-O Lines</td>
<td>DIN VDE 0843-5</td>
</tr>
<tr>
<td>EM Fields</td>
<td>IEC 801-3, Level 3</td>
</tr>
<tr>
<td></td>
<td>DIN VDE 0843-3</td>
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</table>

<table>
<thead>
<tr>
<th>SAFETY/CONFORMANCE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Approvals</td>
<td>CF Mark, UL, CSA, TUV</td>
</tr>
<tr>
<td></td>
<td>IEC 950</td>
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</table>

<table>
<thead>
<tr>
<th>RELIABILITY/MAINTAINABILITY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MTBF</td>
<td>10,000 Hrs</td>
</tr>
<tr>
<td>MTTR</td>
<td>90 Minutes</td>
</tr>
</tbody>
</table>

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Shock and Vibration Resistant
The NotePAC is an expandable, ultra-rugged, all-metal notebook computer designed for extreme environments.

It combines a sealed high-strength, cast-alloy case with special components and shock mounting to form a portable platform that can withstand a 20G shock while operating and still survive. Slip out the removable DataPak™ hard drive and it will withstand 40Gs.

Additional vibration protection from Isoguard™ mounting technology lets the NotePAC operate continuously in 2G random vibration environments such as found in rotary winged aircraft and off-road vehicles.

Two Types of Expansion
For applications requiring add-in expansion, the standard NotePAC comes with two PCMCIA type I1 slots, useable as one type I11 slot. Also available is an internal fax/data modem or an internal GPS receiver that takes the place of the floppy drive.

For greater add-in capability, you can specify an OmniSlice™ module, expanding the NotePAC by either one ISA AT card or two PC104 modules.

TFT and Sunlight Readable Displays
The NotePAC is available with a TFT active-matrix or an STN passive-matrix color display. For outdoor use, specify the NotePAC with a crisp, sunlight readable STN monochrome screen. This superior outdoor screen displays 256 grey shades with an outstanding contrast ratio in direct or diffused sunlight. All displays have resolutions of 640 x 480 pixels with an adjustable backlighting system giving good readability in low light conditions.

Internal and External Power
The NotePAC accepts power from AC or DC sources. It accepts 110/220 VAC, 47-60 Hz and from 12 to 16 VDC. An optional converter extends the DC range to 28 VDC.

- Sealed/Rugged - High-Strength Alloy Casing
- Impervious to Shock and Vibration - 40Gs
- Splash and Drip Proof - Runs in the Rain
- Sealed Envelope - Requires No Fans or Filters
- OmniSlice™ Expansion Modules
- Add AT Card or Two PC104 Modules
- Internal Battery Power - up to 1.5 Hours
- Sunlight Readable Display for Outdoor Use

NotePAC is the most rugged, compact and environmentally protected notebook computer available. It combines MIL-Std inspired packaging with flexible add-in expansion capability, and is designed to stay alive when other computers die.

A standard internal 2.4 A/H battery is provided that powers the unit and any expansion cards. The standard unit will operate 1.5 to 2 hours on a fully charged pack. With a 10 watt expansion card (max) it will operate for about 1 hour. The battery can be swapped in the field with another one that is fully charged to continue operation beyond normal single battery life.

CPUs and Storage
Specify processing power with an Intel® 486DX-33, DX2/66 MHz or DX/4-100 CPU. Expand memory from the standard 4 MB up to 36 MB. Also, the NotePAC is Windows 95™ ready with an integral pointing device and an 84-key, drip-proof keyboard.

Storage is provided by a standard removable 250 MB hard drive that can be upgraded to 340 MB, 500 MB or 750 MB. All drives are small-form-factor, 2.5" ruggedized units mounted in a DataPak™ shielded metal cartridge that slides into the side of the NotePAC. A standard 3.5" floppy drive is accessed from the opposite side.

NotePAC is a trademark of Dolch Computer Systems. All other product names are trademarks or registered trademarks of their respective holders.
## TECHNICAL SPECIFICATIONS

### PROCESSORS & MEMORY
- **CPU Types:**
  - 486 DX-33, 486 DX/2-66MHz or
  - 486 DX/4-100
- **DRAM:**
  - 4, 8, 16 or 36 MB

### STANDARD HARD DISK DRIVES
- **Size and Capacity:**
  - Removable 2.5" 260 MB HDD

### OPTIONAL DRIVES
- **Size and Capacity:**
  - Removable 2.5" 340, 500 & 750 MB HDD

### PCMCIA PORTS
- **Size and Capacity:**
  - Two PCMCIA Type II or one Type III

### FLOPPY DISK DRIVE
- **Size and Capacity:**
  - 1.44 MB 3.5" FDD

### DISPLAY SYSTEMS
- **Display Types:**
  - Color Active Matrix TFT
  - Color STN dual scan passive matrix LCD,
    Monochrome STN sunlight readable LCD
  - All screens VGA resolution, 640 x 480 pixels
- **Video Controller:**
  - VGA controller with 512 KByte of video memory
- **External Display Support:**
  - External display supported for resolutions up to 1024 x 768

### GENERAL
- **Software Compatibility:**
  - MS-DOS, Windows/Windows NT, OS/2, Windows '95, SCO UNIX
- **Serial Interfaces:**
  - Two RS-232C Serial Ports
- **Parallel Port:**
  - One bi-directional parallel port
- **Keyboard:**
  - AT compatible, 86 keys, integrated, sealed pointing device

### POWER SUPPLY
- **System Input:**
  - Input Voltage: 110/220 VAC
  - Auto sensing/Auto switching, 47 to 60 Hz
- **Maximum Power Consumption:**
  - 13 Watts
- **Internal Battery:**
  - Ni-MH battery: 12 V, 2.4 ampere/hour
- **DC Input Capability:**
  - Direct: 12-16 VDC
  - With Adapter: 24-28 VDC

### MECHANICAL
- **Dimensions:**
  - Height: 2.75/8 cm
  - Depth: 10.4/27 cm
  - Width: 13.4/34 cm
- **Weight:**
  - Standard unit: 13.6 lbs/6.2 kg
  - Color screen: 14.3 lbs/6.5 kg
  - Unit with expansion slice:
    - Mono screen: 15.2 lbs/6.9 kg
    - Color screen: 16.9 lbs/7.7 kg

### EXPANSION
- **AT Card:**
  - One AT card
- **PC104:**
  - Two expansion modules
- **Expansion Power:**
  - 10 watts, maximum

### ENVIRONMENTAL
- **Temperature (IEC 68-2-1,2,3,14):**
  - Operating: -40° to +50° C std
  - Storage: 20° to +65° C
  - Transport: -30° to +70° C
- **Humidity (IEC 68-2-1,2,3,14) (non-condensing):**
  - Operating: 5% to 95%
  - Storage: 5% to 95%
  - Transport: 5% to 95%
- **Rain Shower Protection:**
  - 2.5 gal/square ft/hr, for 2 hrs
- **Salt Fog:**
  - 5% salt solution @ 85% RH, enclosure, 48 hrs

### RELIABILITY/MAINTAINABILITY
- **MTBF:**
  - 25,000 hr estimated
- **MTTR:**
  - 30 min, any primary sub-assembly

### Corporate Headquarters
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### German Subsidiary
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- Haidgraben 1C
- D-85521 Ottobrunn
- Germany
- TEL: (+49) 89.609.7848

---

**Shock (IEC 68-2-27):**
- Operating:
  - w/HDD: 20G, 11 ms, half sine
  - w/o HDD: 40G, 11 ms, half sine
- Non-Operating:
  - w/HDD: 50G, 11 ms, half sine
  - w/o HDD: 60G, 11 ms, half sine

**Vibration (IEC 68-2-6):**
- Operating:
  - X Axis: 5-500 Hz, 0.20 Gms, sine wave, 1 hour
  - Y Axis: 5-500 Hz, 0.74 Gms, sine wave, 1 hour
  - Z Axis: 5-500 Hz, 1.04 Gms, sine wave, 1 hour

**Altitude Limits:**
- Operating: 15,000 ft, 1 hr
- Non-Operating: 40,000 ft, 2 hr
- Rate of change: 2,000 ft/min

**Radiation:**
- Voltage tolerances: DIN VDE 0161
- Pulses: DIN VDE 0843-5

- **Transient Bursts:**
  - PS/Data/I/O lines: IEC-801-3
  - IEC-801-2

- **Static Discharge:**
  - IEC-801-2
  - IEC-801-3

- **EM Fields:**
  - IEC-801-3

- **EMI:**
  - FCC Part 15, Class A

- **Safety:**
  - IEC 950 requirements
Business Communications

The Dolch PAC is an ideal portable platform for a myriad of new desktop business communication applications. Industry leading performance, and an abundance of open slots and system resources offer an uncompromising environment for portable video teleconferencing, video editing, and multimedia presentations. Graphics intensive applications are well served with a choice of dazzling active matrix TFT displays — VGA, SVGA and XGA.

Active Matrix TFTs

For application specific color performance, Dolch offers 10.4 and 12.1-inch active matrix color panels in resolutions of 640x480, 800x600, and 1024x768. This dazzling lineup provides CRT quality displays of up to 16.7 million simultaneous colors, 100 to 1 contrast ratios, and viewing angles of 90 degrees. Of particular interest to serious communications professionals is Dolch's new VidLink™ flat-panel video interface. For the first time ever, VidLink provides the capability of flat-panel control via standard, off-the-shelf add-in boards — opening up a whole new level of performance for portable computer displays. To support these new video applications, the PACs' performance ratings have been increased by 20 to 40 times over ordinary portables, and applications can now be easily moved from the desktop to a mobile platform without having to deal with changes in driver hardware and software. Even more, the wealth of MPEG and JPEG video compression and playback hardware built up for high-end CRT applications can be easily and quickly integrated for mobile usage.

- Highest Performance Video on a Portable
- Active Matrix TFTs — VGA, SVGA and XGA
- Supports All Industry MPEG and JPEG
- Optional Room Filling Stereo Sound System
- Pentium™ or Dual Pentium to 200 MHz
- 5 Open Slots — ISA, EISA and PCI Local Bus
- Optional PCMCIA Support
- Rugged Industrial Design

Dolch PAC — Desktop Performance in a Rugged Portable

Portable Computing Power

The high-performance of a Dolch PAC only begins with a Pentium processor running at up to 200 MHz. Add-on 64-bit PCI Local Bus, an enhanced parallel port, on-board EIDE drive support and on-board 16550 UARTs for high speed serial communications, and you have the world's most powerful portables — bar none.

Mil Ruggedness

In the PAC, all internal components are mounted in a custom designed monocoque alloy chassis that is, in turn, shock mounted inside an impact-resistant molded outer shell. All shock and vibration impinging on the outer surface is dampened before it ever reaches any of the critical system components. Designed for abusive treatment, Dolch's PAC series has even passed testing to military transportation specifications.

<table>
<thead>
<tr>
<th>Stress</th>
<th>Operational</th>
<th>Non-Operational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal High @ 24.0 h</td>
<td>50° C (122° F)</td>
<td>60° C (140° F)</td>
</tr>
<tr>
<td>Thermal Low @ 24.0 h</td>
<td>5° C (41° F)</td>
<td>0° C (32° F)</td>
</tr>
<tr>
<td>Humidity (non-condensing)</td>
<td>85%</td>
<td>98%</td>
</tr>
<tr>
<td>Shock 1/2 Sine @ 11 ms</td>
<td>10 G</td>
<td>60 G</td>
</tr>
<tr>
<td>Vibration</td>
<td>1.66 Gcpp @ 5 – 300 Hz</td>
<td>2.5 Gcpp @ 5 – 300 Hz</td>
</tr>
<tr>
<td>Low Altitude</td>
<td>-200 m (-650 ft)</td>
<td>-200 m (-650 ft)</td>
</tr>
<tr>
<td>High Altitude</td>
<td>3 km (10000 ft)</td>
<td>12 km (40000 ft)</td>
</tr>
</tbody>
</table>
Audio-PAC™
Presentation professionals require more than a lot of slots and CPU performance. Modern presentations are sure to include an enchanting mix of movement and sound. Audio-PAC with its complete built-in wide-range high-fidelity stereo sound system ensures that professional presenters have easily transportable, room filling sound wherever the presentation may take them.

Massive Expansion
For over nine years, expansion capability has been the hallmark of a Dolch PAC portable. Combining ISA or EISA with PCI Local Bus slots makes the PAC an ideal host for a variety of high-performance desktop add-ins. And, Dolch’s innovative (patent pending) card retention system ensures that all of the plug-in boards stay firmly in place even during rough handling.

PAC and APAC MODELS

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</tr>
</thead>
<tbody>
<tr>
<td>DX/2</td>
<td>66 MHz</td>
<td>8 KB/256 KB</td>
<td>EISA/VL</td>
<td>8 MB</td>
<td>64 MB</td>
<td>1 GB IDE</td>
<td>1 GB SCSI</td>
<td>2.5 MB</td>
<td>5</td>
<td>Yes</td>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>250 W, 90/240 VAC, 50/400 Hz</td>
<td>150 W, 90/240 VAC 50/60 Hz or 10/32 VDC</td>
<td>20 W Internal Stereo Sound System</td>
<td>15.7 x 9.3 x 8.25 in. (39.9 x 23.6 x 20.9 cm)</td>
</tr>
<tr>
<td>DX/4</td>
<td>100 MHz</td>
<td>16 KB/512 KB</td>
<td>ISA/VL</td>
<td>8 MB</td>
<td>64 MB</td>
<td>1 GB IDE</td>
<td>1 GB SCSI</td>
<td>2.5 MB</td>
<td>5</td>
<td>Yes</td>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>250 W, 90/240 VAC, 50/400 Hz</td>
<td>150 W, 90/240 VAC 50/60 Hz or 10/32 VDC</td>
<td>20 W Internal Stereo Sound System</td>
<td>15.7 x 9.3 x 8.25 in. (39.9 x 23.6 x 20.9 cm)</td>
</tr>
<tr>
<td>Pentium</td>
<td>Dual Pentium</td>
<td></td>
<td>EISA/PCI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>250 W, 90/240 VAC, 50/400 Hz</td>
<td>150 W, 90/240 VAC 50/60 Hz or 10/32 VDC</td>
<td>20 W Internal Stereo Sound System</td>
<td>15.7 x 9.3 x 8.25 in. (39.9 x 23.6 x 20.9 cm)</td>
</tr>
</tbody>
</table>

NOTES:

1. The Video Board uses one of the open ISA/EISA or PCI slots.
2. One PCI and one ISA/EISA slot are shared.
3. Consult factory for available slot configurations.
4. 10.4-inch maximum on APAC

Why wait! Call Dolch Computer Systems today.
1-800-538-7506

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Notes: Pentium is a trademark of Intel Corp.

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**Field Portable Power Systems**

Now with the PROwatt™ 250 and the STATpack™ 15, be free from the requirement for an AC outlet. These two new PAC accessories make it possible to run your Dolch PAC system from auto, aircraft, truck or ship’s DC power. You also can operate autonomously, free from conventional AC or DC sources.

**Operation with Local DC Power**

For operation from DC sources such as automobile electrical accessory outlets, aircraft 28 volt busses, truck 24 volt systems and others, choose the PROwatt 250 series. These accessories convert standard 10-30 volt DC power to either 110 VAC or 220 VAC for operation of your PAC systems in any remote situation.

The PROwatt 250 and 250-24 convert either 10-20 or 20-30 VDC power to 110 VAC power for operation of any PAC computer. For international applications choose the 250i and the 250i-24 which generate 220 VAC 50 Hz from the same 10-20 and 20-30 VDC input ranges.

**Portable DC Power**

When DC power is unavailable or unreliable, specify the STATpack 15. This rugged unit supplies 180 watt/hours of power for complete autonomous operation of your computer. Simply plug a 10-30 VDC PROwatt into the STATpack’s output connector and run your PAC system for up to 2 hours without recharging. (See run time chart on specification page for more detail).

Both the PROwatt and the STATpack are extremely rugged and designed to operate in remote areas. The STATpack 15 can be recharged from an AC receptacle, from a vehicle cigarette lighter adapter or from a conventional battery charger. It is sealed and can operate or be transported in any orientation. It is also IATA approved for transport on commercial carriers.

Not only can you power the PAC from the PROwatt and STATpack, but you can use any reserve energy to power additional electrical and electronic devices. If you desire, dedicate a PROwatt or STATpack to other components and supply power to an entire remote test or communications installation.

The combination of the PROwatt and STATpack frees a user from the AC outlet. Now, you can run your applications in the field, autonomous from AC line power. You can also operate other electrical and electronic equipment from the PROwatt series, freeing them from a wall socket as well. For specific high power applications, 800 W, 1500 W and 2500 W PROwatt inverters can be supplied.
STATpack 15 Specifications

**Boost Rate**: 250 AMP

**Internal Battery**
- Sealed Recombination Non Spillable Battery

**Size**: 10.5" L x 3.2" W × 13" H

**Boosting Cables**
- Copper No. 6 Gauge

**Weight**: 17 Lbs

**Cycle Life**: 550 Cycles

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STATpack 15 Application Examples

<table>
<thead>
<tr>
<th>Estimated Consumption</th>
<th>Estimated Working Time</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Watts</td>
<td>13 Hours</td>
<td>Camcorder, VCR, Surveying Equipment</td>
</tr>
<tr>
<td>40 Watts</td>
<td>3.5 Hours</td>
<td>NotePACTM</td>
</tr>
<tr>
<td>60 Watts</td>
<td>1.75 Hours</td>
<td>PAC/L-PAC 486</td>
</tr>
<tr>
<td>100 Watts</td>
<td>1.4 Hours</td>
<td>PAC/L-PAC 586</td>
</tr>
</tbody>
</table>

**Accessories**:
- S15 AC Adapter: Recharge STATpack from 115V AC
- S15 Power Cord: Recharge vehicle battery through lighter socket

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PROwatt 250 Specifications

**Output Power**
- Surge: 500 W
- 5 minute: 350 W
- Continuous: 250 W

**No Load Current Draw**: <.07 A

**Dimensions**: 1.5' x 4.5' x 6'

**Weight**: 20 oz.

**Output Waveform**: Modified Sinewave, Phase Corrected

**Input Voltage**: 10 to 15 VDC or 20 to 30 VDC

**Output**: 115 VAC Rms±: 5% or 220 VAC Rms±: 5%

**Efficiency**: Approx. 90%

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A Complete Business in a Box
Now, for the first time, you can get an entire business telecommunication system in one portable package. Through the pairing of Dolch's MegaPAC rugged portable PC and Novell's® software technology, a completely integrated system is now possible. All you need to start is a phone line.

Available functions include LAN Integrated Telephony Server, IntranetWare Server, IVR Voice Server, FAX Server and Remote Client Server. All capabilities are implemented on commercially available function cards that install in the MegaPAC chassis. All these capabilities run under NetWare 4.1 with NetWare Telephony Services, Telera Voice Services and the NetWare Web Server.

The integrated CTI telephony services can be expanded from a base 6 trunks/18 extensions to 24 trunks/72 extensions and still have all other functions installed and active.

Massive Add-In Expansion
MegaPAC's massive 8 slot expansion makes it possible to support the multiple function cards without breaking a sweat. The unique shock-mounted "chassis within a chassis" mounts an 11 slot passive backplane that houses an integrated Pentium® CPU card and a PCI flat-panel video controller providing eight open user slots.

Add up to eight full-length, full-height ISA cards for your CTI, Voice, FAX and LAN applications. Dolch's patented retention plate captures these cards and assures they will stay put during shipping or transport.

Integrated UPS
To provide power loss protection, MegaPAC is available with an internal UPS that provides five minutes of backup battery power. This special, intelligent power supply also has simultaneous DC input capability that allows a high capacity battery to be used for long term backup.

Input can be 110/220 VAC and/or 10-30 VDC, and both can be connected simultaneously. The power supply determines which to draw power from. First from AC, then from DC and lastly from the UPS, as necessary. It automatically recovers after a power outage and recharges the internal UPS battery.

Application Cookbook
Dolch and Novell have teamed-up to provide a complete applications cookbook that takes you through each step of the integration of a complete system. Card jumpers, interrupts, memory addresses are all described. All software configuration settings and drivers are explained and detailed. You can purchase all available hardware and software on the open market and have a complete customized solution up and running in hours.

Call now for detailed information.
The Dolch MegaPAC — 1.800.538.7506
http://www.dolch.com
Novell's IntranetWare — 1.800.NETWARE
http://novell.com/telephony
PORTABLE TELECOMMUNICATIONS SERVER

Novell.

FAX/MODEM CARD

HUB CARD

VOICE CARD

NIC CARD

LAN/PBX CARD

TECHNICAL SPECIFICATIONS

STANDARD FEATURES
100 MHz Pentium® CPU
32 MB DRAM, 64 MB (optional)
1.44 MB 3.5" Floppy Disk Drive
1.2 GB Hard Drive
4X Slimmeline CD-ROM
10.4" VGA TFT Display

EXPANSION
Add-in cards
Up to 10 Full-size ISA/PCI:
6 ISA, 3 PCI, 1 ISA/PCI or
9 ISA, 1 ISA/PCI

ELECTRICAL
AC Power Supplies
Standard Supply
90-265 VAC, 200 W Peak
47 to 440 Hz
Optional Supply
90-138, 180-265 VAC, 350 W Peak
47 to 440 Hz
Optional Universal Power Supply
90-265 VAC, 47-63 Hz, 10-32 VDC
Plus Internal UPS Capability

MECHANICAL
Dimensions
Height 7.5" 19.2 cm
Depth w/o Feet 17.5" 44.5 cm
Width 14.4" 36.6 cm
Construction
Aluminum Alloy Frame and Chassis
Weight
25 Lb 11.4 Kg

SAFETY
Approvals
CE Mark, UL, CSA, TUV
IEC 950 Requirements
MTBF
5,000 Hr Calculated
MTTR
30 Minutes

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