

# PR4045 / PR4145

Rack 19" PR4x45 systems are equipped with second generation Intel Core i3, i5 and i7 processors. The motherboard integrates four PCI slots, two x16 PCIe slots, one x8 PCIe slot, ten USB 2.0, two 10/100/1000 Mbps Ethernet, two RS232 serial interfaces, DVI and Display Port video output, one parallel port, audio I/O, up to 16MB system memory and the possibility to install up to two 3,5" SATA III disks also in RAID 0,1 functionality.

PR4145 has the same technical features of PR4045 but a reduced cabinet depth.



| System characteristics       |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                   |                                                                                                   |
|------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Motherboard                  | Model<br>HW monitor<br>Watch-dog                                       | ATX format, DS3076-S-S<br>Temperature monitor<br>Time programmable                                                                                                                                                                                                                                                                                                                              |                                                                                                   |                                                                                                   |
| CPU                          | Processor<br>Frequency<br>Bus/Core ratio<br>Cache<br>Socket<br>Chipset | Intel® Core i3-2100<br>3.1GHz<br>31<br>8MB L2<br>Socket LGA1155<br>Intel® Q67-PCH Express Chipset                                                                                                                                                                                                                                                                                               | Intel® Core i5-2320<br>3.0GHz<br>31<br>6MB L2<br>Socket LGA1155<br>Intel® Q67-PCH Express Chipset | Intel® Core i7-2600<br>3.4GHz<br>34<br>8MB L2<br>Socket LGA1155<br>Intel® Q67-PCH Express Chipset |
| Graphic                      | Controller<br>Memory                                                   | Intel® HD Graphics 2000 @850MHz, integrated in processor<br>Shared – Up to 128MB fixed and 256MB dynamic                                                                                                                                                                                                                                                                                        |                                                                                                   |                                                                                                   |
| System memory                | Type<br>Size<br>Socket                                                 | DDR3 1066/1333 SDRAM<br>2 GB, 4 GB, 8GB, 16GB<br>4 x DIMM modules                                                                                                                                                                                                                                                                                                                               |                                                                                                   |                                                                                                   |
| Video interfaces             | Type                                                                   | 1 x DVI-I (max resolution 1920x1200 WUXGA), 1 x DisplayPort (max resolution 2560x1600 WQXGA)                                                                                                                                                                                                                                                                                                    |                                                                                                   |                                                                                                   |
| PS/2 interfaces              | Type                                                                   | 1 x PS/2 Keyboard, 1 x PS/2 Mouse                                                                                                                                                                                                                                                                                                                                                               |                                                                                                   |                                                                                                   |
| Serial interfaces            | Type<br>UART<br>Transfer rate<br>Optoisolation                         | 2 x RS232 (DB9M)<br>16550 compatible (FIFO 16 byte)<br>115Kbps max<br>No                                                                                                                                                                                                                                                                                                                        |                                                                                                   |                                                                                                   |
| Parallel interfaces          | Type<br>Connection                                                     | 1 x SPP, EPP, ECP bidirectional<br>DB25M                                                                                                                                                                                                                                                                                                                                                        |                                                                                                   |                                                                                                   |
| Ethernet interfaces          | Type<br>Controller                                                     | 2 x 10/100/1000Mbps (RJ45)<br>Intel 82579LM, Intel 82574L                                                                                                                                                                                                                                                                                                                                       |                                                                                                   |                                                                                                   |
| USB interfaces               | Type<br>Transfer rate                                                  | 10 x USB 2.0 (rear, TYPE-A, host port – 2 on front), 1 x USB-dongle (internal, TYPE-A, host port), 1 x USB 2.0 for flashdrive, 2 x USB 2.0 internal on connector<br>Up to 480Mbps (high speed)                                                                                                                                                                                                  |                                                                                                   |                                                                                                   |
| Audio interfaces             | Type                                                                   | Mic IN, Line IN, Line OUT (configurable)                                                                                                                                                                                                                                                                                                                                                        |                                                                                                   |                                                                                                   |
| Mass storage interfaces      | Type<br>Raid                                                           | 4 x SATA II 3Gb/s, 2 x SATA II 6Gb/s<br>0, 1, 10, 5 on SATA II                                                                                                                                                                                                                                                                                                                                  |                                                                                                   |                                                                                                   |
| Expansion slots              | Type                                                                   | 4 x PCI full size (32bit, 33MHz, Rev.2.3), 1 x PCIe x16 (16 Lanes, Gen2), 1 x PCIe x16 (4 Lanes, Gen2), 1 x PCIe x8 (1 Lane, Gen2)                                                                                                                                                                                                                                                              |                                                                                                   |                                                                                                   |
| Electrical characteristics   |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                   |                                                                                                   |
| Power supply                 | Type<br>Input voltage                                                  | AT/ATX<br>110-230 VAC 400W autoringing<br>90-265 VAC 2 x 500W autoringing, redundant (only for PR4045)                                                                                                                                                                                                                                                                                          |                                                                                                   |                                                                                                   |
| Optional                     |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                   |                                                                                                   |
| Mechanical characteristics   |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                   |                                                                                                   |
| Case                         | Type                                                                   | 4U 19" rack mount nickel steel chassis                                                                                                                                                                                                                                                                                                                                                          |                                                                                                   |                                                                                                   |
| Measurements                 | Dimensions (W x H x D)<br>Weight                                       | PR4045<br>483 x 177.8 x 503 mm<br>13 Kg                                                                                                                                                                                                                                                                                                                                                         | PR4145<br>483 x 177.8 x 454 mm<br>13 Kg                                                           |                                                                                                   |
| Enviromental characteristics |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                   |                                                                                                   |
| Temperature                  | Operation<br>Storage<br>24/7                                           | 24/7, 0° ÷ +40°C<br>-20° ÷ +60°C<br>Yes                                                                                                                                                                                                                                                                                                                                                         |                                                                                                   |                                                                                                   |
| Humidity                     | Operation/Storage                                                      | 80% (non-condensing)                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                   |                                                                                                   |
| Warranty & Approvals         |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                   |                                                                                                   |
| CE                           | Emission<br><br>Immunity<br>Safety                                     | Conforms to EN 55022 Information technology equipment – Radio disturbance characteristics<br>Conforms to EN 61000-3-2 – Limits for harmonic current emissions<br>Conforms to EN 61000-3-3 – Limits of voltage fluctuation and flicker<br>Conforms to EN 55024 Information technology equipment – Immunity characteristics<br>Conforms to EN 60950-1 – Information technology equipment – Safety |                                                                                                   |                                                                                                   |
| Warranty                     | Management<br>Standard<br>Extended                                     | By ASEM headquarters<br>12 months<br>18 / 24 / 36 months (optional)                                                                                                                                                                                                                                                                                                                             |                                                                                                   |                                                                                                   |

# PR4046 / PR4146

Rack 19" PR4x46 systems are equipped with third generation Intel Pentium and Core i3, i5 and i7 processors. The motherboard integrates three PCI slots, two x16 PCIe slots, two x4 PCIe slots, four USB 3.0, eight USB 2.0, two 10/100/1000 Mbps Ethernet, one RS232/422/485 multistandard serial interface, DVI and HDMI video output, audio I/O, up to 32MB system memory and the possibility to install up to two 3,5" SATA III disks also in RAID 0,1 functionality.

PR4146 has the same technical features of PR4046 but a reduced cabinet depth.



| System characteristics       |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                       |                                                                                                                         |
|------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Motherboard                  | Model<br>HW monitor<br>Watch-dog                                       | ATX format, CL630-CRM<br>Temperature monitor<br>Time programmable                                                                                                                                                                                                                                                                                                                               |                                                                                                                       |                                                                                                                         |
| CPU                          | Processor<br>Frequency<br>Bus/Core ratio<br>Cache<br>Socket<br>Chipset | Intel® Pentium™ G2030<br>3 GHz<br>2 / 2<br>3MB Intel Smart Cache<br>55W / 64bit/ 22nm<br>Intel® C216 Express Chipset                                                                                                                                                                                                                                                                            | Intel® Core™ i3-3240<br>3.4 GHz<br>2 / 4<br>3MB Intel Smart Cache<br>55W / 64bit/ 22nm<br>Intel® C216 Express Chipset | Intel® Core™ i5-3470S<br>2.96 GHz<br>4 / 4<br>6MB Intel Smart Cache<br>65W / 64bit/ 22nm<br>Intel® C216 Express Chipset |
| Graphic                      | Controller<br>Memory                                                   | Intel® HD Graphics @650MHz<br>Intel Dynamic Video Memory Technology                                                                                                                                                                                                                                                                                                                             |                                                                                                                       |                                                                                                                         |
| System memory                | Type<br>Size<br>Socket                                                 | DDR3 1066/1333/1600 SDRAM<br>4 GB, 8 GB, 16GB, 32GB<br>4 x DIMM modules                                                                                                                                                                                                                                                                                                                         |                                                                                                                       |                                                                                                                         |
| Video interfaces             | Type                                                                   | 1 x DVI-I, 1 x DVI-D, 1 x HDMI (digital max resolution 1920x1200 WUXGA, analog max resolution 2048x1536 QXGA)                                                                                                                                                                                                                                                                                   |                                                                                                                       |                                                                                                                         |
| PS/2 interfaces              | Type                                                                   | 1 x PS/2 Keyboard / Mouse                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                       |                                                                                                                         |
| Serial interfaces            | Type<br>UART<br>Transfer rate<br>Optoisolation                         | 1 x RS232/422/485 (DB9M), 2 x RS232 (DB9M on bracket)<br>16550 compatible (FIFO 16 byte)<br>115Kbps max<br>No                                                                                                                                                                                                                                                                                   |                                                                                                                       |                                                                                                                         |
| Ethernet interfaces          | Type<br>Controller                                                     | 2 x 10/100/1000Mbps (RJ45)<br>Intel 82579LM, Intel 82574L                                                                                                                                                                                                                                                                                                                                       |                                                                                                                       |                                                                                                                         |
| USB interfaces               | Type<br>Transfer rate                                                  | 4 x USB 3.0 (rear, TYPE-A, host port - 2 on front), 6 x USB 2.0 (2 on rear, 2 on front, 2 on brackets, TYPE-A, host port)<br>USB 3.0 up to 5Gbit/s (super speed), USB 2.0 up to 480Mbit/s (high speed)                                                                                                                                                                                          |                                                                                                                       |                                                                                                                         |
| Audio interfaces             | Type                                                                   | Mic IN, Line IN, Line OUT (configurable)                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                       |                                                                                                                         |
| Mass storage interfaces      | Type<br>Raid                                                           | 4 x SATA II 3Gb/s, 2 x SATA II 6Gb/s<br>0, 1, 10, 5 on SATA II                                                                                                                                                                                                                                                                                                                                  |                                                                                                                       |                                                                                                                         |
| Expansion slots              | Type                                                                   | 3 x PCI full size (32bit, 33MHz, Rev.2.3) * 2 x PCIe x16 (1 x16 se Gen3 / 2 x8 se Gen2) * 2 x PCIe x4 (1 x4 Gen2, 1 x1/4 Gen2)                                                                                                                                                                                                                                                                  |                                                                                                                       |                                                                                                                         |
| Electrical characteristics   |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                       |                                                                                                                         |
| Power supply                 | Type<br>Optional                                                       | AT/ATX<br>110-230 VAC 400W autoranging<br>110-230 VAC 650W autoranging<br>90-265 VAC 2 x 500W autoranging, redundant (only for PR4045)                                                                                                                                                                                                                                                          |                                                                                                                       |                                                                                                                         |
| Mechanical characteristics   |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                       |                                                                                                                         |
| Case                         | Type                                                                   | 4U 19" rack mount nickel steel chassis                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                       |                                                                                                                         |
| Measurements                 | Dimensions (W x H x D)<br>Weight                                       | PR4046<br>483 x 177.8 x 503 mm<br>13 Kg                                                                                                                                                                                                                                                                                                                                                         | PR4146<br>483 x 177.8 x 454 mm<br>13 Kg                                                                               |                                                                                                                         |
| Enviromental characteristics |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                       |                                                                                                                         |
| Temperature                  | Operation<br>Storage<br>24/7                                           | 0° ÷ +50°C<br>-20° ÷ +60°C<br>Yes                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                       |                                                                                                                         |
| Humidity                     | Operation/Storage                                                      | 80% (non-condensing)                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                       |                                                                                                                         |
| Warranty & Approvals         |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                       |                                                                                                                         |
| CE                           | Emission<br>Immunity<br>Safety                                         | Conforms to EN 55022 Information technology equipment – Radio disturbance characteristics<br>Conforms to EN 61000-3-2 – Limits for harmonic current emissions<br>Conforms to EN 61000-3-3 – Limits of voltage fluctuation and flicker<br>Conforms to EN 55024 Information technology equipment – Immunity characteristics<br>Conforms to EN 60950-1 – Information technology equipment – Safety |                                                                                                                       |                                                                                                                         |
| Warranty                     | Management<br>Standard<br>Extended                                     | By ASEM headquarters<br>12 months<br>18 / 24 / 36 months (optional)                                                                                                                                                                                                                                                                                                                             |                                                                                                                       |                                                                                                                         |