

# Appendix A

## Product Specifications

### Kaleidescape 1U Server, Model KSERVER-1500

**Dimensions:**

17.5 in. × 1.7 in. × 18.8 in. (W × H × D)  
(44.5 cm × 4.3 cm × 47.8 cm)

- 1 rack unit
- Front panel protrudes 1 in. (2.5 cm)

**Weight:**

- 15.0 lbs (6.8 kg) with no disk cartridges installed
- 24.0 lbs (10.9 kg) with four 2 TB Disk Cartridges installed

**Disk Cartridges**

- KDISK-2000-L: 2.2 lbs (1.0 kg)
- KDISK-BLANK-L: 0.35 lbs (0.16 kg)
- KDISK-1000-L: 2.0 lbs (0.9 kg)
- KDISK-750-L: 2.0 lbs (0.9 kg)
- KDISK-250-L: 2.0 lbs (0.9 kg)

**Power:**

- 100–240 V, 50–60 Hz, universal input
- 66 W typical (86 W max) consumption with four 2 TB Disk Cartridges installed
- 72 W typical (112 W max) consumption with four 250 GB, 750 GB or 1 TB Disk Cartridges installed

**Environment:**

Operating temperature:

41 °F to 86 °F (5 °C to 30 °C)

Storage temperature:

-4 °F to 140 °F (-20 °C to 60 °C)

Relative humidity:

5% to 90% non-condensing

Maximum operating altitude:

10,000 ft (3000 m)

Heat output:

- 2 TB Disk Cartridges 290 BTU/hr (86 W)
- 250 GB, 750 GB or 1 TB Disk Cartridges 382 BTU/hr (112 W)

Airflow: 10 CFM (17 m<sup>3</sup>/hr) min

**Ventilation:**

- Minimum 1 in. (2.5 cm) ventilation space at the front
- Minimum 2 in. (5 cm) ventilation space at the rear

**Note:** Make sure rack or other doors do not reduce the 1 in. (2.5 cm) air space required at the front of the chassis.

**Storage:**

- One 2 TB Disk Cartridge for data protection (RAID-K parity)
- Each additional 2 TB Disk Cartridge stores 50 Blu-ray Discs, 300 DVDs, or 3,300 CDs
- Expandable to four 2 TB Disk Cartridges for a maximum of 6 TB data storage (150 Blu-ray Discs or 900 DVDs)
- More servers can be added to provide thousands of movies and albums in one library

**Bandwidth:**

- Serves DVD movies or music to up to 45 zones simultaneously
- Serves Blu-ray movies to up to 5 zones simultaneously
- 4 simultaneous imports

**Connections:**

- 100Base-TX/1000Base-T Ethernet (RJ45)
- RS-232 for control systems (DB-9 male)
- Two USB 2.0 (reserved)

**Certifications:**

- CSA (IEC 60950-1:2001, CSA 60950-1-03)
- FCC Class B
- GOST R
- CE
- RoHS compliant

## Kaleidescape 3U Server, Model KSERVER-5000

### Dimensions:

17.5 in. × 5.2 in. × 19.3 in. (W × H × D)  
(44.5 cm × 13.2 cm × 49.0 cm)

- 3 rack units
- Front panel protrudes 1.1 in. (2.8 cm)

### Weight:

- 29.0 lbs (13.2 kg) with no disk cartridges installed
- 59.0 lbs (26.8 kg) with fourteen 2 TB Disk Cartridges installed

#### Disk Cartridges

- KDISK-2000-L: 2.2 lbs (1.0 kg)
- KDISK-BLANK-L: 0.35 lbs (0.16 kg)
- KDISK-1000-L: 2.0 lbs (0.9 kg)
- KDISK-750-L: 2.0 lbs (0.9 kg)
- KDISK-250-L: 2.0 lbs (0.9 kg)

### Power:

- 100–240 V, 50–60 Hz, universal input
- 183 W typical (205 W max) consumption with fourteen 2 TB Disk Cartridges installed
- 199 W typical (270 W max) consumption with fourteen 750 GB or 1 TB Disk Cartridges installed

### Environment:

Operating temperature:

41° F to 86° F (5° C to 30° C)

Storage temperature:

-4° F to 140° F (-20° C to 60° C)

Relative humidity:

5% to 90% non-condensing

Maximum operating altitude:

10,000 ft (3000 m)

Heat output:

- 750 GB or 1 TB Disk Cartridges  
921 BTU/hr (270 W)
- 2 TB Disk Cartridges  
700 BTU/hr (205 W)

Airflow: 40 CFM (68 m<sup>3</sup>/hr) min

### Ventilation:

- Minimum 1 in. (2.5 cm) ventilation space at the front
- Minimum 2 in. (5 cm) ventilation space at the rear

**Note:** Make sure rack or other doors do not reduce the 1 in. (2.5 cm) air space required at the front of the chassis.

### Storage:

- Two 2 TB disk cartridges for data protection (RAID-K parity and hot spare)
- Each additional 1 TB disk cartridge stores 25 Blu-ray Discs, 150 DVDs, or 1,650 CDs
- Each additional 2 TB disk cartridge stores 50 Blu-ray Discs, 300 DVDs, or 3,300 CDs
- Expandable to fourteen 2 TB Disk Cartridges for a maximum of 24 TB data storage (600 Blu-ray Discs or 3,600 DVDs)
- More servers can be added to store thousands of movies and albums in one library

### Bandwidth:

- Serves DVD movies or music to up to 45 zones simultaneously
- Serves Blu-ray movies to up to 5 zones simultaneously
- 4 simultaneous imports

### Connections:

- 100Base-TX/1000Base-T Ethernet (RJ45)
- RS-232 control port (DB-9 male)
- Two USB 2.0 (reserved)
- IEEE 1394 (FireWire) 6-pin (reserved)

### Certifications:

- CSA (IEC 60950-1:2001, CSA 60950-1-03)
- FCC Class B
- GOST R
- CE
- RoHS compliant

## Kaleidescape M500 Player, Model KPLAYER-M500

**Dimensions:**

- 17.5 in. × 1.7 in. × 13.8 in. (W × H × D)  
(44.5 cm × 4.3 cm × 35.0 cm) without side panels
- 1 rack unit
  - Front panel protrudes 1 in. (2.5 cm)

**Weight:**

10.0 lbs (4.6 kg)

**Power:**

- 100–240 V, 50–60 Hz, universal input
- 36 W typical consumption  
(27 W standby, 42 W max)

**Environment:**

Operating temperature:

41°F to 95°F (5°C to 35°C)

Storage temperature:

-4°F to 140°F (-20°C to 60°C)

Relative humidity:

5% to 90% non-condensing

Maximum operating altitude:

10,000 ft (3000 m)

Heat output: 143 BTU/hr (42 W) max

Airflow: 7 CFM (12 m<sup>3</sup>/hr) min

**Ventilation:**

- Minimum 1 in. (2.5 cm) ventilation space at the front
- Minimum 2 in. (5 cm) ventilation space at the rear

**Note:** Make sure that the air space required at the front of the chassis is maintained.

**Network:**

100Base-TX/1000Base-T Ethernet  
(RJ45 connector)

**Control Connections:**

- Front panel IR receiver window
- IR input (1/8 in. mini-plug)
- RS-232 control port (DB-9 male)

**Video Outputs:**

- HDMI
- Component YP<sub>b</sub>P<sub>r</sub> (RCA connectors)
- S-Video
- Composite (RCA connector)

**Video Modes:**

1080p60/50/24, 1080i60/50, 720p60/50, 576p, 576i, 480p, 480i

**Audio Outputs:**

- HDMI
- Digital coaxial (RCA connector)
- Digital optical (TosLink connector)
- Analog stereo (RCA connectors)

**Audio Formats:**

- Dolby Digital, Dolby TrueHD
- DTS Digital Surround, DTS-HD Master Audio
- MPEG Audio
- PCM

**Disc Media:**

CD Audio, CD-R, CD-RW, DVD, DVD-R, DVD-RW, DVD+R, DVD+RW, DualDisc, BD-ROM, BD-R, BD-RE

**Blu-ray Disc:**

- 1080p/24
- Dolby TrueHD
- DTS-HD Master Audio
- BD-Live
- Profile 2.0

**Region Codes:**

DVD region code can be changed up to four times

Blu-ray region code cannot be changed by user

KPLAYER-M500-A (region A)

KPLAYER-M500-B (region B)

**Certifications:**

- CSA (IEC 60950-1:2001, CSA 60950-1-03)
- FCC Class B
- GOST R
- CE
- RoHS compliant

## Kaleidescape M300 Player, Model KPLAYER-M300

**Dimensions:**

8.4 in. × 1.7 in. × 10.6 in. (W × H × D)  
(21.3 cm × 4.3 cm × 26.9 cm)

**Note:** Optional rack-mount shelf is available to hold two M300 Players in one rack unit

**Weight:**

- 3.0 lbs (1.4 kg) includes 1 lb (0.5 kg) power supply
- Rack-mount shelf: 0.5 lbs (0.2 kg)

**Power:**

- 100–240 V, 50–60 Hz, universal input
- 28 W typical consumption  
(20 W standby, 28 W max)

**Environment:**

Operating temperature:

41 °F to 95 °F (5 °C to 35 °C)

Storage temperature:

-4 °F to 140 °F (-20 °C to 60 °C)

Relative humidity:

5% to 90% non-condensing

Maximum operating altitude:

10,000 ft (3000 m)

Heat output: 96 BTU/hr (28 W) max

Airflow: 6 CFM (10 m<sup>3</sup>/hr) min

**Ventilation:**

- Minimum 1 in. (2.5 cm) ventilation space at the front
- Minimum 2 in. (5 cm) ventilation space at the rear

**Network:**

100Base-TX/1000Base-T Ethernet  
(RJ45 connector)

**Control Connections:**

- Front panel IR receiver window
- IR input (1/8 in. mini-plug)

**Video Outputs:**

- HDMI
- Component YP<sub>b</sub>P<sub>r</sub> (RCA connectors)
- Composite (RCA connector)

**Video Modes:**

1080p60/50/24, 1080i60/50, 720p60/50,  
576p, 576i, 480p, 480i

**Audio Outputs:**

- HDMI
- Digital coaxial (RCA connector)
- Analog stereo (RCA connectors)

**Audio Formats:**

- Dolby Digital, Dolby TrueHD
- DTS Digital Surround, DTS-HD Master Audio
- MPEG Audio
- PCM

**Blu-ray Disc:**

- 1080p/24
- Dolby TrueHD
- DTS-HD Master Audio
- BD-Live
- Profile 2.0

**Region Codes:**

Blu-ray region code cannot be changed by user

- KPLAYER-M300-A (region A)
- KPLAYER-M300-B (region B)

**Certifications:**

- CSA (IEC 60950-1:2001, CSA 60950-1-03)
- FCC Class B
- GOST R
- CE
- RoHS compliant

## Kaleidescape Music Player, Model KMUSIC-4000

**Dimensions:**

17.5 in. × 1.7 in. × 13.8 in. (W × H × D)  
(44.5 cm × 4.3 cm × 35.0 cm)

- 1 rack unit
- Front panel protrudes 1 in. (2.5 cm)

**Weight:**

10.0 lbs (4.6 kg)

**Power:**

- 100–240 V, 50–60 Hz, universal input
- 14 W typical consumption  
(14 W standby, 20 W max)

**Environment:**

Operating temperature:

41° F to 95° F (5° C to 35° C)

Storage temperature:

-4° F to 140° F (-20° C to 60° C)

Relative humidity:

5% to 90% non-condensing

Maximum operating altitude:

10,000 ft (3000 m)

Heat output: 70 BTU/hour (20 W) max

Airflow: 2.5 CFM (4.2 m<sup>3</sup>/hr) min

**Ventilation:**

- Minimum 1 in. (2.5 cm) ventilation space at the front
- Minimum 2 in. (5 cm) ventilation space at the rear

**Note:** Make sure rack or other doors do not reduce the 1 in. (2.5 cm) air space required at the front of the chassis.

**Network:**

100Base-TX Ethernet (RJ45 connector)

**Control Connection:**

RS-232 control port (DB-9 male)

**Audio Outputs:**

Four simultaneous independent audio zones

- Four digital coaxial (RCA connectors)
- Four digital optical (TosLink connectors)
- Four analog stereo (RCA connectors)

**Audio Formats:**

PCM

**Disc Media:**

CD Audio, CD-R, CD-RW, DVD, DVD-R, DVD-RW, DVD+R, DVD+RW, DualDisc

**Certifications:**

- CSA (IEC 60950-1:2001, CSA 60950-1-03)
- FCC Class B
- GOST R
- CE
- RoHS compliant

## Kaleidescape Mini System, Model KSYSTEM-120

### Dimensions:

- With side panels  
17.8 in. × 3.3 in. × 17.3 in. (W × H × D)  
(45.1 cm × 8.4 cm × 43.9 cm)
- Without side panels  
16.0 in. × 3.3 in. × 17.3 in. (W × H × D)  
(40.6 cm × 8.4 cm × 43.9 cm)
- With rack-mount kit (2 rack units)  
16.0 in. × 3.5 in. × 17.3 in. (W × H × D)  
(40.6 cm × 8.9 cm × 43.9 cm)

### Weight:

- 20.0 lbs (9.1 kg) without Mini Disk Cartridges installed
  - 24.0 lbs (10.9 kg) with four Mini Disk Cartridges installed
- Disk Cartridges
- KDISK-500-M: 0.7 lbs (0.3 kg)
  - KDISK-BLANK-M: 0.4 lbs (0.2 kg)

### Power:

- 100–240 V, 50–60 Hz, universal input
- 85 W typical (74 W standby, 90 W max) consumption with four 500 GB Mini Disk Cartridges

### Environment:

- Operating temperature:  
41 °F to 95 °F (5 °C to 35 °C)
- Storage temperature:  
-4 °F to 140 °F (-20 °C to 60 °C)
- Relative humidity: 5% to 90% non-condensing
- Maximum operating altitude:  
10,000 ft (3000 m)
- Heat output: 308 BTU/hour (90 W) max
- Airflow: 15 CFM (26 m<sup>3</sup>/hr) min

### Ventilation:

- Minimum 1 in. (2.5 cm) ventilation space at the front
- Minimum 2 in. (5 cm) ventilation space at the rear

**Note:** Make sure rack or other doors do not reduce the 1 in. (2.5 cm) air space required at the front of the chassis.

### Storage:

- One 500 GB Mini Disk Cartridge for data protection (RAID-K parity)
- Each additional 500 GB Mini Disk Cartridge stores 75 DVDs or 825 CDs
- Expandable to four Mini Disk Cartridges for a maximum of 1.5 TB data storage (225 DVDs)
- Multiple Mini Systems and servers can be grouped seamlessly to provide storage for thousands of movies and albums

### Bandwidth:

- Serves DVD movies or music to up to 15 zones simultaneously
- 4 simultaneous imports

### Video Outputs:

- HDMI
- Component YP<sub>b</sub>P<sub>r</sub> (RCA connectors)
- S-Video
- Composite (RCA connector)

### Video Modes:

- High definition 720p, 1080i and 1080p at 50/60 Hz
- NTSC 480i, 480p
- PAL 576i, 576p
- Best resolution selected automatically through HDMI

### Audio Outputs:

#### Zone 1

- HDMI
- Digital coaxial (RCA connector)
- Digital optical (TosLink connector)
- Analog stereo (RCA connectors)

#### Zones 2 and 3

- Analog stereo (RCA connectors)

### Audio Formats:

- Dolby Digital
- DTS
- MPEG Audio
- PCM

**Disc Media:**

CD Audio, CD-R, CD-RW, DVD, DVD-R, DVD-RW,  
DVD+R, DVD+RW, DualDisc

**Connections:**

- 100Base-TX/1000Base-T Ethernet (RJ45)
- Front panel IR receiver window
- IR input (1/8 in. mini-plug)
- RS-232 control port (DB-9 male)

**Certifications:**

- CSA (IEC 60950-1:2001,  
CSA 60950-1-03)
- FCC Class B
- GOST R
- CE
- RoHS compliant