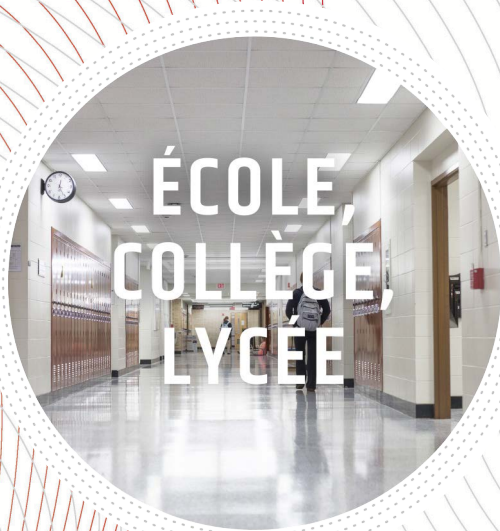




**PPMS LOW-VOLTAGE SOUND AND
LIGHTING SYSTEMS
SCHOOL, HIGH SCHOOL,
COLLEGE**

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SCHOOL, COLLEGE, HIGH-SCHOOL SPECIFICATIONS

1 GENERAL PERFORMANCE CLAUSES

The purpose of this specification is to describe and define the work required for the public address package in type R establishments in order to implement the PPMS.

1.1 Building classification

The entire building is governed by the French Labour Code, and is classified as a type R ERP.

1.2 Minimum conditions for execution

The Contractor of this lot undertakes to carry out all or part of the installation in accordance with the following regulations and standards:

- AFNOR standards: N.F. C 15-100: Low-voltage electrical installations.
- Safety regulations for establishments open to the public (ERP), Ets type R
- Departmental health regulations.
- The Labour Code.
- The decree of 4 June 1973 concerning the fire behaviour of building materials.
- The decrees of 14 November 1988 and 19 February 1975 and the decree of 10 October 2000 on the protection of workers.
- ISO/IEC v2 ad.1 and EN 50173 v2 standards: architecture, structure and performance of cabling components ISO/IEC 14763-1 and 2 standards: administration and expansion of cabling
- ISO/IEC TIA-606 standard: cabling component identification principles
- The cabling entities defined by the ISO 11801 standard
- D.T.U.
- Technical notices.
- Manufacturers' specifications.
- Fire regulations.
- Laws, decrees and regulations concerning personal safety.
- ROHS directive (2002/95/EC): reduction of hazardous substances in electrical and electronic products.
- RT2012 thermal regulations
- WEEE regulations: disposal of waste electrical and electronic equipment
- The EPB directive (Energy Performance of Buildings)
- The provisions of this C.C.T.P.

Note: This list is not exhaustive.

The contractor's attention is drawn to the fact that compliance with these standards also obliges him to follow all the standards, legal publications, decrees and circulars in force on the day the work is carried out.

- The contractor will pay particular attention to the choice of material depending on the height of the installation and the surface to be treated.

2 SOUND SYSTEM

2.1 Principle

The building will have a public address system for the entire site. The sound system will be based on the following principle:

- A comfort sound system managing input and output signals,
- Input signals from :
 - Microphone desk with pre-recorded messages,
 - Modulation sources (not included in the package),
- Output signals (100V line) going zone by zone to :
 - Recessed or surface-mounted ceiling loudspeakers,
 - Surface-mounted loudspeakers,
 - Sound projectors.
- All the ducts connecting the various elements.

This sound system will enable :

- Broadcast messages via a microphone console,
- Broadcast pre-recorded messages
- Remote triggering of messages.

2.2 Main distribution

All cabling will be laid in a low-voltage cable tray.

The company will lay a cable tray as soon as 3 or more cables use the same passageway. Once the cable trays have been laid, the contractor must fill in all the walls through which they pass, restoring the original fire rating. Expansive foam must not be used.

2.3 Secondary distribution

Secondary distribution will be in IRO tube or distribution trunking. Once the secondary ducts have been installed, the contractor must fill in all the walls through which they pass, restoring the original fire rating. Expansive foam must not be used.

The company must pay particular attention to all these paths as they will be visible to everyone.

2.4 SECTION 1 ASSETS

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2.4.1 General

The 19" standard comfort sound system will include :

- An integrated pre-amplification/switching system receiving the input signals:
 - A microphone desk
 - A message reader/recorder
- An amplifier with several power modules receiving the signals from the preamplifier and serving the 100V lines to the loudspeaker,
- A strip of 8 PC 2x10/16A+T - filter, at the back of the bay, powered from the TGO of the inverter.

An NC contact on the UGA for the sound cut-out is already in place and will be replaced.

2.4.2 Sound system cabinet or centre

The modulation sources will be located at the top of the bay. Free units will have blank facades.

Brand : **RONDSO**

Ref. : **P26U N**



Hight : 26 U

Accessories :

- 1 8 PC header,
- Blank front panels
- 1 set of screws
- 2 2U minimum trays for modulation sources,
- 1 front glass door,
- 1 set of castors,

Location : Local patchbay

2.4.3 Factory-assembled/cabled/tested cabinet

The entire PA cabinet can be assembled, wired and tested in the factory before being commissioned on site.

The sound rack is delivered with a technical file listing all the components present.

Ref. : **CRACK26**

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2.4.4 Digital amplifier

The amplifier will have the following characteristics:

Brand : **RONDSO**

Ref. : **ZA6600** (650W) (power to be determined according to number of HP)



Number of inputs : 2 with 1 priority

Output power (RMS) : 6 outputs of 120W

Bandwidth : Microphone: >70 dB Line: >80 dB

Output : 6 speaker outputs

Accessory : 1 power cord

2.4.5 Digital recorder/player for 6 and/or 8 messages

The players/recorders will have the following characteristics :

Brand : **RONDSO**

Ref. : **DMT-100-2**



Remote control: 10-contact socket

Bandwidth : MIC 300 Hz- 6400 Hz ;

LINE 100 Hz- 6400 Hz

Mini SD card reader (4GB max)

Sampling frequency: 32,000 Hz

Brand :

RONDSO

Ref. :

DMT-PPMS



Télécommande : Prise 10 Contacts

Bande passante :

**100 Hz – 20 000 Hz / -3 db +3 db
256 Mo de mémoire**

2.4.6 Connection leads and release

The present lot will be responsible for all the connecting cords between the various internal elements and between the internal and external elements of the sound system.

Brand : **RONDSO**

Details : Cables with plugs at each end

The trigger is a control box for managing remote alerts.



Brand :

RONDSO

Ref. :

BP4-PPMS

2.5 SECTION 3 SOUND DIFFUSION ELEMENTS

2.5.1 Speakers

During installation tests, the present lot will adjust the nominal power of each loudspeaker in order to obtain optimum sound quality. The emission of music or calls to people must not be disturbing.

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The loudspeakers will not be placed above the microphone stands in order to avoid any "LARSEN".
"LARSEN". In all cases, the present lot will ensure that the total power of all the loudspeakers does not exceed the power available at the output of the amplifier.

To this end, the main criteria taken into account are as follows:

- Speaker type,
- Axis frequency response curve and bandwidth (- 6dB),
- Characteristic efficiency in dB SPL 1 W / 1 m,
- Rated power / impedance,
- Power/impedance adjustment options,
- Maximum short-term input power,
- Maximum long-term input power,
- Rate of harmonic distortion at rated power,
- Directivity curves (horizontal and vertical),
- Directivity factor,
- Implementation,
- Aesthetics,
- Dust and water protection index (IP),
- Connector quality,
- Quality of cable entries,
- Perceived listening quality: A comparative listening session, organised by the company and at its own expense, may be requested by the project manager.
- Installation height
- Surface area to be covered

2.5.2 Recessed loudspeaker

Brand :

Type :

Ref. :



Number of channels :

Available power (100V line) :

Characteristic efficiency (SPL/1W/1m):

Superior bandwidth: Directivity at 1kHz :

Colour :

Accessories :

Location :

RONDSO

Recessed circular loudspeaker

CSL-6120

1

5-10 -20W

90 dB

90 - 20 000 Hz

180°

White

Built-in

False ceilings

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2.5.3 Surface-mounted loudspeaker

Brand : RONDSON
Type : Wall-mounted speaker
Ref. : **WS-501**



Number of channels : 1
Available power (100V line) : 1,5 - 3 - 6W
Characteristic efficiency (SPL/1W/1m) : 91 dB
Superior bandwidth: 150 - 18 000 Hz
Directivity : 180°
Colour : White
Accessory : Bracket for ceiling or wall mounting
Location : Circulation, halls

2.5.4 Sound projector

Brand : RONDSON
Type : Sound projector with swivel mount
Ref. : **CSP115**



Number of channels : 1
Available power (100V line) : 3,75 - 7,5 - 15W
Characteristic efficiency (SPL/1W/1m) : 92 dB
Superior bandwidth: 100 - 20 000 Hz
Directivity : 90°
Colour : White
Accessory : Bracket for ceiling or wall mounting
Location : Courtyard, playground, outdoor

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2.6 Pipes

The pipes, coming from the sound rack, will be made up as follows:

Type of cable:	according to Euroclass
Cross-section:	2x1.5mm ² (depending on length)
Laying method :	according to specifications § Distribution

All the equipment (Matrix/microphone desk and Matrix/animation deck) will use the building's VDI pre-wiring, and will be wired in 4-pair Category 6a FTP on RJ45 or SYT1 sockets.

The ducts will be laid on the peripheral cable trays and above the false ceilings. Under no circumstances should loudspeaker, sound projector or 360° diffuser lines be routed in the same way as microphone or HF lines.

Each loudspeaker will be connected via a junction box located nearby.

The equipment must be carefully marked with an engraved label on rigid plastic, excluding the DYMO system or equivalent.

The present lot will be responsible for all bracket systems for fixing the HP, whatever the nature of the wall on which they are fixed or embedded.

All vertical HP downpipes will be made using GRIPPLE type wires with Twister.

2.7 Further information

Consult our design office: contact@rondson.com

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