Bull.Miletic
Ferriscope
1893-2020

Operation Voltage: AC 100–240V ~ 50/60Hz (Worldwide)

Included technology:

a) Rotor (the electromechanical unit with rotating mirror)
b) Control unit (grey plastic box)
c) Video player remote control
d) Signal cable, 4m
e) Mains power cable (CEE 7/7 to IEC C13) 1.5m
f) Peli 1510 case
g) USB thumb drive

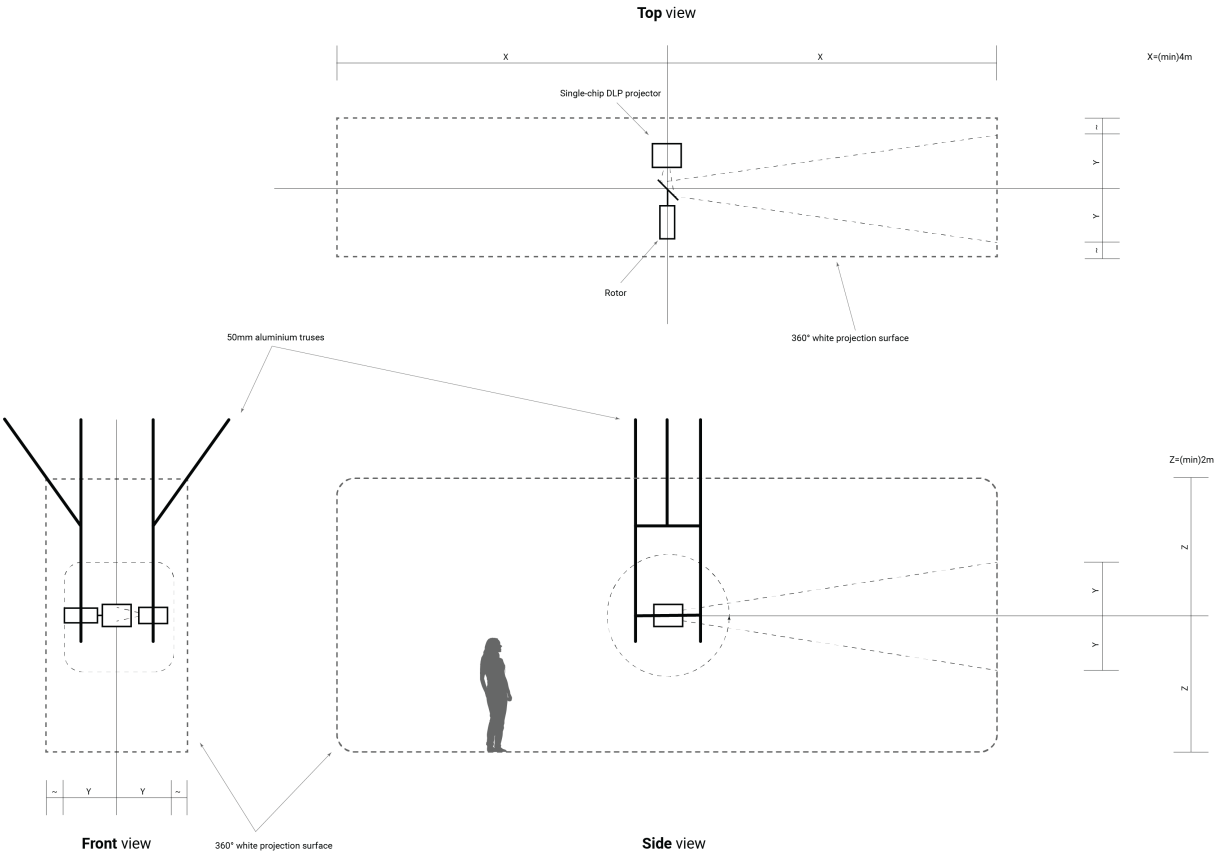
Not included technology:

h) **Single-chip** DLP projector (min. 5000 ANSI lumens, min. 20000:1 contrast ratio) with “rear projection” option.
i) HDMI cable
j) Active speaker (e.g. Genelec 8020C)
k) Audio cable
l) Suspension system (e.g. Global Truss Ø 50mm tubes)
m) Clamps (e.g. KUPO KCP-710B superclamp + KUPO KS-023H Hex Mounting Plate for rotor. Control unit can be attached to Global Truss 5073-1B Selflock Hook Easy. Clamps for the projector and the speaker have to be sourced according to their respective specifications.)
n) Master-slave extension cord (simplifies powering the system via projector’s remote control)

Installation construction

- The room should be of a considerable size, with high ceiling, for the visual effects to work optimally. Keep in mind that the projection surface is 360° across vertical axis, i.e. front wall, ceiling, rear wall, floor… For this purpose, the floor should be white, either painted in the same color as the walls and ceiling or covered with white wall-to-wall carpet (e.g. JMT Podium 1004 White).

- The suspension system should be suspended from the ceiling. NOTE: No physical parts of the installation should be in contact with floor or walls. Ideally, rotor and projector should be suspended in the middle of the room. The ideal clearance is 2m from the floor, which means that the ceiling should be min. 4m-heigh. The suspension system should be constructed to withstand vibrations and to allow positioning of the rotor and the projector very close to each other.



Assembling instructions

1. Mount rotor onto the suspension system in perfect level, to the right of the projector (observed in the direction of the projection during the **static phase**). The rotating mirror should be as close as possible yet at a safe distance from the projector's lens. Keep in mind that the mirror rotates occasionally (**kinetic phase**) and that the entire assembly vibrates due to rotations at high speeds.

2. When mounting the projector to the suspension system, the geometry of the projector's throw needs to be taken into account in order to produce a rectangular frame with strait edges on the adjacent wall (conventional cinematic projection).

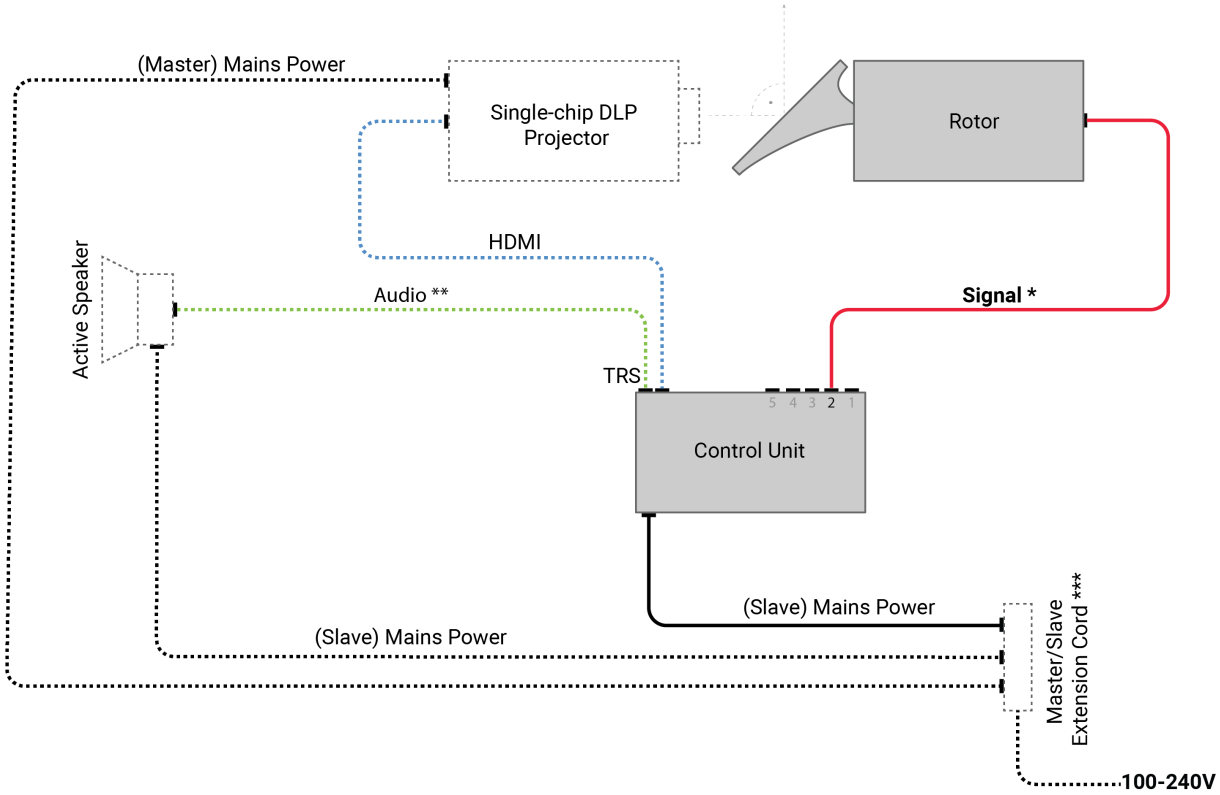
3. Be sure that the projector is set to “rear projection” mode so that the reflected image appears correctly. Also, be sure that the projector speaker is turned off or set to 0 volume.

4. Please see the diagram below for the wiring instructions:

   *** WARNING! Only use the provided signal cable. Using any other cable will permanently damage the system.**

   ** The type of audio cable connection depends on the type of the active speaker. TRS socket on the control unit outputs balanced mono audio signal.

   *** Use of master/slave extension cord (optional) simplifies powering the system up and down via projector’s remote control.



5. POWER UP: When powered up, the mirror on the rotor will automatically find “home” position by slowly rotating. Make sure that there are no obstacles in the way, i.e. that the mirror can safely rotate at all times. If using master/slave extension cord, by powering up the projector via the projector’s remote control the entire system will turn on automatically.

6. POWER DOWN: **Be sure that the mirror is not rotating when powering the system down!** The best practice is to power the system down a few seconds after the mirror rotation ended. If using master/slave extension cord, by powering down the projector via the projector's remote control the entire system will turn off automatically.

Components in the Rotor

1. Glass First Surface Mirror 120mm x 120mm - 3mm Thickness
2. Integrated Stepper Motor IHSS60-36-30
3. Ball Bearings SKLF Explorer 6204-2RSH
4. uxcell Shaft Coupler 12mm to 12mm Bore L35xD25 Flexible Coupler Joint
5. Inductive Proximity Sensor SN04-N
6. Custom PCB with Arduino Micro (running Rotor.ino firmware)*

Signal cable

1. Lapp Kabel Ölflex Chain 819 CP (5 lead 1 mm² with shield)

Components in the Control Unit

1. SD Memory Card (with the MPEG-4 movie file)
2. 1080p HD Media Player
3. Lindy HDMI 2.0 Audio Extractor
4. Rolls HE 18 Buzz Off Filter
5. Arduino UNO (running SpectrumShield.ino firmware)*
6. Proto Screw Shield 1.0
7. Sparkfun Spectrum Shield DEV-13116
8. AC/DC Desktop Adapter 24V 120W PSA120U-240L6
9. AC/DC Desktop Adapter 5V 25W SDI36-5-U-P5

*To access **Rotor.ino** and **SpectrumSheild.ino** firmware on the USB drive please download free Arduino Software (IDE) at https://www.arduino.cc/en/software.