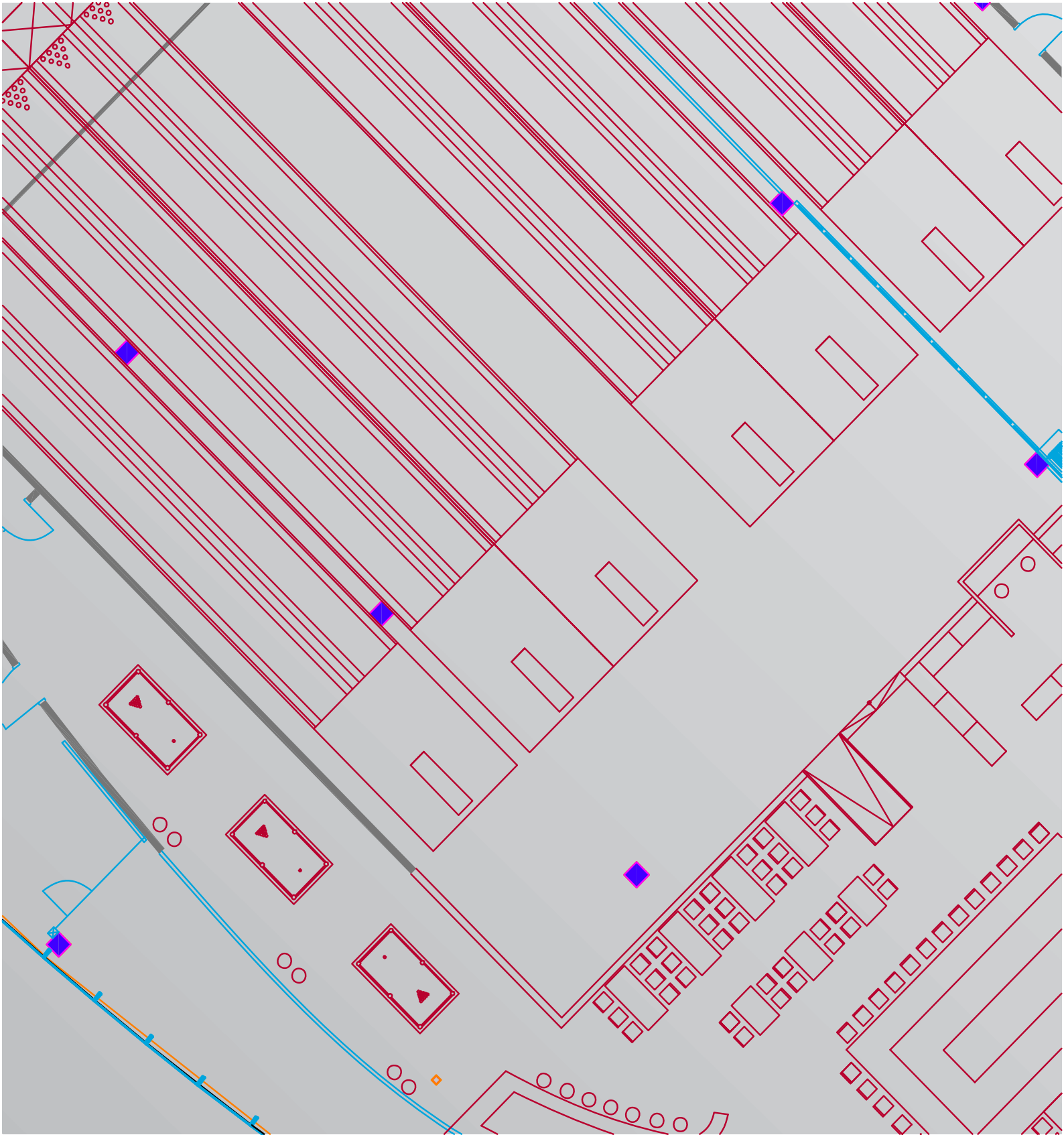

QUBICAAMF

NEW CENTER

PRE-PLANNING GUIDE

Rev. E, 08/23

EDGE STRING PINSPOTTER

QUBICAAMF
MAKING BOWLING AMAZING

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DOCUMENT UPDATES

QubicaAMF reserves the right to revise and/or update this manual at any time without obligation to notify any person or entity of such revision. The document number, revision level, and date below indicate the edition of this manual.

TRADEMARK NOTICES

CONDITIONAL INFORMATION

This manual assumes that the QubicaAMF equipment and/or software has been installed by a QubicaAMF-authorized technician and is functional in every aspect. Should you encounter problems in operating the equipment, follow the instructions in this manual before contacting QubicaAMF for service under warranty.

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Table of Contents

EMEA TECHINICAL SPECIFICATIONS
FOR THE FITTING OUT OF PREMISES DESIGNED FOR THE INSTALLATION
OF COMPETITIVE BOWLING LANES.

QubicaAMF is the world's largest manufacturer of bowling equipment, as well as supplier, and it carries out its own installation to the highest industry standards.

- Assembly of the lanes, ball returns and all possible complementary facilities (Radaray, seats, tables, Bumpers ...).

- Installation and connection of the "Pinspotter" machines and their Manager control panel.

- Installation and connection of the scoring equipment (monitors, cameras, CPU's, consoles…) and of the control and management system.

It is, however, the buyer of the equipment who is responsible for preparing the premises so that they are fully adapted to the size of the equipment being installed, and to its technical and operational specifications, particularly in terms of electrical power supply. While QubicaAMF takes responsibility for the low-voltage network (12/24 Volts), all supplies of normal voltage (230V ± 10% and 120V ± 10%) must be supplied by the buyer according to the specifications relating to the equipment selected and local regulations.

The technical services provided by QubicaAMF are openly available to the buyer and their architect to provide precise plans and all the information necessary for the researching and implementing of the project.

While QubicaAMF provides information and example plans, it falls to the architect to adapt them to the project according to current local standards, as well as to implement, or help the company to implement, the execution plans which will be submitted to QubicaAMF, and for which no further responsibility can be accepted.

1 General site information

1.1 Areas

- **The Bowling Lane area**: is composed of Service area + Machinery area + Lanes area (including the Approach) + Bowlers' area.
- **The Customer area**: depending on the constraints of the premises but essential for the successful functioning of the establishment. For establishments between 10 and 30 lanes, allow 8 seats per lane. (Please check local law for disabled access).
- **Control Desk**: it is recommended that it should be positioned in such a way that the attendant can monitor the lanes, welcome Customers and distribute shoes. (Two typical configurations: position it laterally for Bowling Centres with up to 12/14 lanes and centrally for Bowling Centres with more than 14/16 lanes.).
- Locker rooms, male and female locker rooms (visitors and players) must be big enough to meet minimum requirements. Individual lockers, where regular players can store their personal gear, can be considered.
- Flow of people, as far as possible, allow for practical circulation to allow easy movement and use.
- Additional Spaces required:
    - Back office;
    - Male/Female and Disabled toilets;
    - Display cabinets and/or pro-shop;
    - Bar + Stock room;
- Additional Spaces recommended:
    - Snack-bar or restaurant and kitchen area;
    - Multi-purpose meeting room;
    - Area for video games and simulators;
    - Pool/billiards area;
    - Children's area;

1.2 Bowling lanes areas dimensions

- The number of lanes determines the **WIDTH**, and the different widths need to be considered depending on the different areas as Machinery Area, Lane Area and the Approach Area; all different width details are reported on the following table.
  - **Width of the LANE AREA**.

    The width of the lane area is determined by the number of the lanes, as reported on the table below.

    The total width of a single lane is 1909mm (6’ 3” 3/16).

    To calculate the total width for multiple lanes it must be considered 3388mm (11’ 1” 3/8) for each pair of lanes plus 71mm (2” 13/16) for one single capping division.

    In the case of an odd number of lanes (three or more) a single lane with the ball return track must be installed, for such configuration it must be considered 3388mm (11’ 1” 3/8) for each pair of lanes, 71mm (2” 13/16) for one single capping division and 1870mm (6’ 1” 5/8) for a single lane.

    For example, the width for a 7 lanes installation is calculated:

    (3388mm x 3) + 71mm + 1870mm = 12105mm

    (11’ 1” 3/8 x 3) + 2” 13/16 + 6’ 1” 5/8 = 39’ 8” 9/16

    In the case of a wall beside the first and /or the last lane a 200mm (7” 7/8), an aisle between the lane and the wall/s is recommended to allow bowlers to bowl freely, while in the case of access into the Machinery Area is possible only from the lanes, a service aisle of 900mm (2’ 11” 7/16) beside or between the lanes is required. Measurements reported on the table below does not include the 200mm (7” 7/8) nor the 900mm (2’ 11” 7/16) aisles. QubicaAMF is not the supplier of the service aisles.
  - **Width of the APPROACH AREA**.
    In case of an even number of lanes the width required for the Approach Area is the same of the Lanes Area, while in case of an odd number of lanes an extra width of 128mm (5” 1/16) is required to fit the Ball Rack of the ball return. The ball rack length extends from the threshold of the approach 500mm (1’ 7” 11/16”) toward the Bowlers’ area and 2300mm (7’ 6” 9/16”) toward the Lanes area.
  - **Width of the MACHINERY AREA**.
    The width of the Machinery Area is determinate from the width of the Lane Area.

Width dimensions Tables for the different area's based on the number of lanes

Number of Lanes	Lanes / Machines		Approach	
	mm	inches	mm	inches
1	1909	6' 3" 3/16	2039	6' 8" 5/16
2	3458	11' 4" 1/8	3458	11' 4" 1/8
3	5328	17' 5" 3/4	5458	17' 10" 7/8
4	6845	22' 5" 1/2	6845	22' 5" 1/2
6	10233	33' 6" 7/8	10233	33' 6" 7/8
8	13621	44' 8" 1/4	13621	44' 8" 1/4
10	17009	55' 9" 5/8	17009	55' 9" 5/8
12	20396	66' 11"	20396	66' 11"
14	23784	78' 3/8	23784	78' 3/8
16	27172	89' 1" 3/4	27172	89' 1" 3/4
18	30559	100' 3" 1/8	30559	100' 3" 1/8
20	33947	111' 4" 1/2	33947	111' 4" 1/2
22	37335	122' 5" 7/8	37335	122' 5" 7/8
24	40723	133' 7" 1/4	40723	133' 7" 1/4
26	44110	144 8" 5/8	44110	144 8" 5/8
28	47498	155' 10"	47498	155' 10"
30	50886	166' 11" 3/8	50886	166' 11" 3/8
32	54274	178' 3/4	54274	178' 3/4
34	57661	189' 2" 1/8	57661	189' 2" 1/8
36	61049	200' 3" 1/2	61049	200' 3" 1/2
38	64437	211' 4" 7/8	64437	211' 4" 7/8
40	67824	222' 6" 1/4	67824	222' 6" 1/4

- The **Length** is determined by totaling the following:
  - **Length of the SERVICE AREA***
    If a service area is used for pins and or parts storage, we **suggest** considering an aisle from 1800mm (6') to 2400mm (8') wide. If an extra room is provided for this purpose, we **suggest** considering an isle of 1500mm (59") is sufficient.
  - **Length of the LANES and MACHINERY AREAS**
    Total length of the lane (including the approach) and the machinery: 25250mm (82' 10" 1/8).
  - **Length of the BOWLER's AREA**
    From 4000mm (13' 1") to 5000mm (16' 5") depending on the furniture option selected.

    Service area + Lane area + Bowlers' area, allow a minimum of 31mt (101' 8" 1/2).

- The **height** is determined by totaling the following:
  - **Height of the MACHINERY AREA***

    The SUGGESTED minimum height from beneath machines (floor level) and the ceiling or the false ceiling is 3250mm (10’ 8”). It is very important that any obstruction/s are not present on top of the machinery area in order not to hinder the operations of maintenance. In case of any obstruction lower than 3250mm (10’ 8”), this must be discussed with local Installation manager.

    The height of the pinspotter **Without** the Virtual Curtain Wall is 2006 mm (6’ 7”).

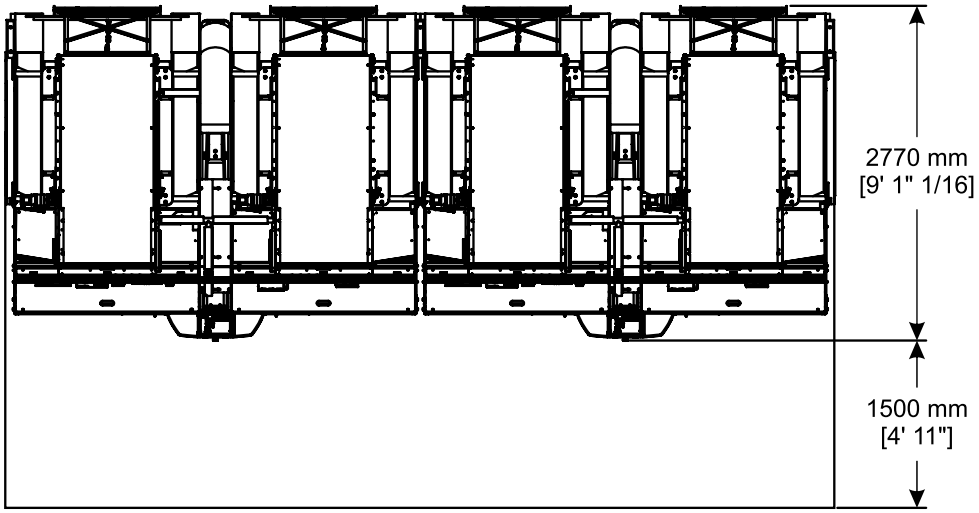
    The height of the pinspotter **With** the Virtual Curtain Wall is 2400 mm (7’ 10” 1/2).

  - **Height of the LANES and APPROACH AREA***

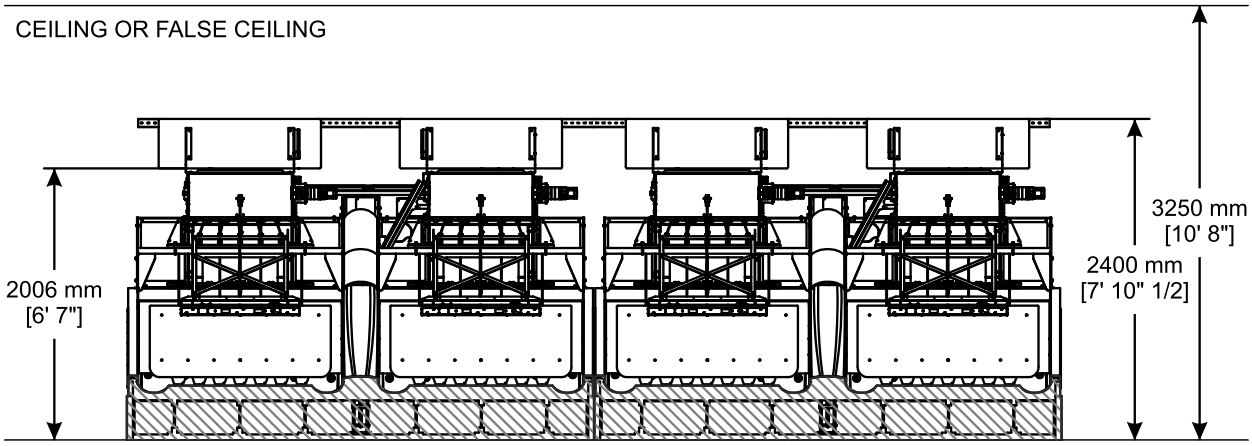
    Minimum height required from beneath the lanes (floor level) and the ceiling or the false ceiling is 3400mm (11’ 1” 7/8), recommended height is 4000mm (13’ 1” 1/2). The minimum height of 3400mm (11’ 1” 7/8) is very important where scoring monitors will be installed.

*** = ALL DIMENSIONS MUST MATCH YOUR LOCAL REGULATION.**

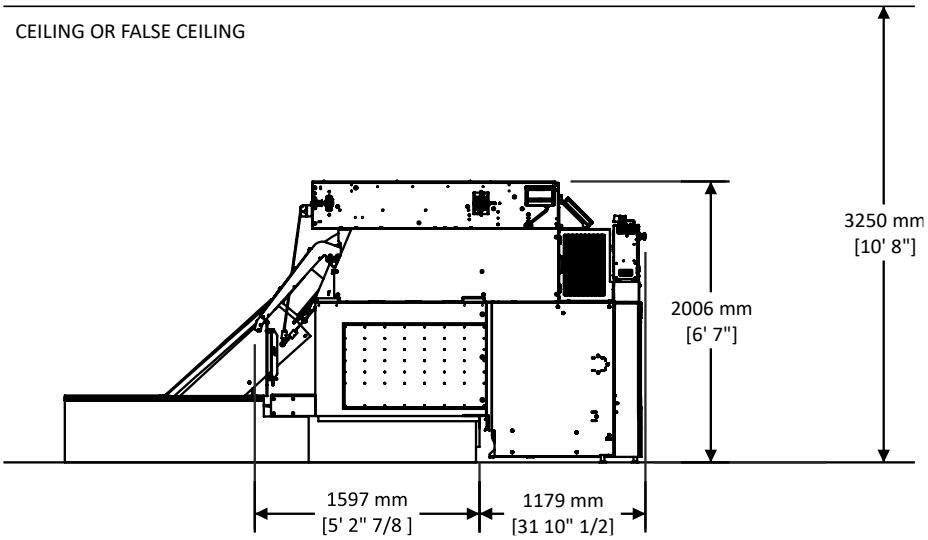
TOP VIEW of machines with the Widths required:



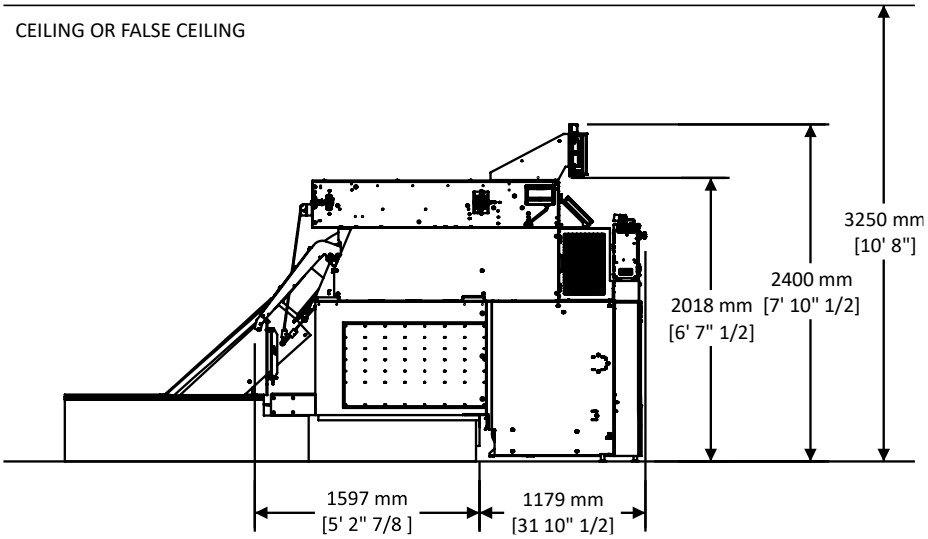
FRONT VIEW of machines with the Heights required:



SIDE VIEW WITHOUT VIRTUAL CURTAIN WALL of a pinspotter with the Heights and Widths required.



SIDE VIEW WITH VIRTUAL CURTAIN WALL of a pinspotter with the Heights and Widths required:



1.3 Numbering of bowling lanes

Please note that the numbering of the lanes runs from left to right, with lane N°1 located to the left of the bowlers.

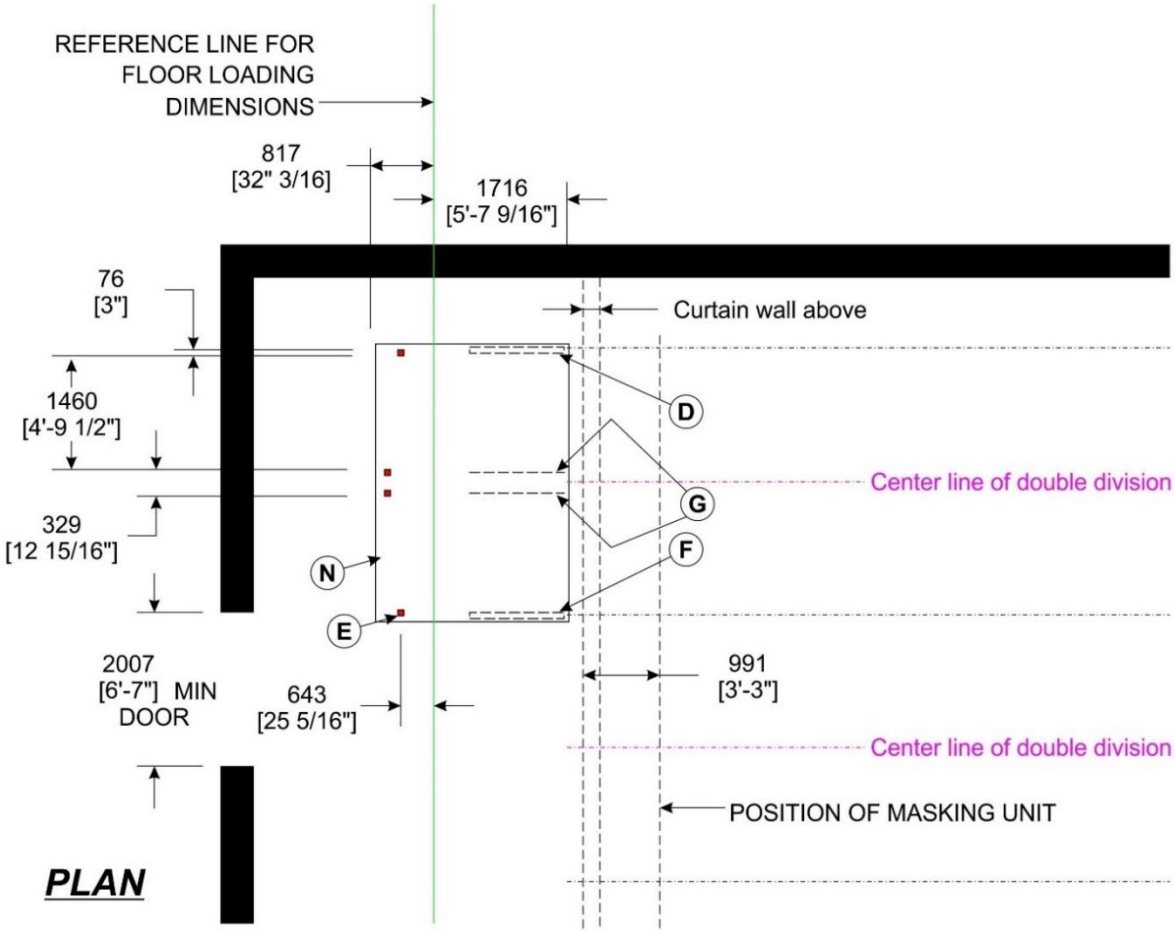
2 Technical information for the fitting-out of the premises

All technical information is given as a guide and QubicaAMF can accept no further responsibility.

2.1 Floor

The thickness of the concrete slab is determined by the Customer's architect depending on the characteristics of the floor.
Check your local law for the slab whose resistance for buildings open to the public.

- **Machinery area slab:**
  - Area D (on drawing below): End kickbacks for pinspotter mounting. Bearing area to withstand 205 Kg [450 lbs] uniform loading over 710 cm^2 [110 in^2].
  - Points E (on drawing below): Backend pinspotter support points on 25 mm [1"] jack screws. Each of 4 bearing areas to withstand 102 Kg [225 lbs] over 20 cm^2 [3.1 in^2]
  - Area F (on drawing below): Common kickbacks for pinspotter mounting. Bearing area to withstand 408 Kg [900 lbs] uniform loading over 710 cm^2 [110 in^2]. (2 front ends)
  - Area G (on drawing below): Double division kickbacks for pinspotter mounting. Bearing area to withstand 205 Kg [450 lbs] uniform loading over 710 cm^2 [110 in^2]. (2 kickbacks, 1 per front end)
  - Area N (on drawing below): Total pinspotter bearing area to withstand 1225 Kg [2700 lbs] over 10,8 m^2 [116 $ft.^2$].



- **Machinery area slab:**
  - Where the machinery is located and in the service corridor, anti-dust paint is recommended.
- **Lane area slab:**
  - It is sufficient to finish with a levelling board, BUT THE ENTIRE SURFACE OF THIS CONCRETE SLAB MUST BE COMPLETELY SMOOTH, THE MAXIMUM PLANOMETRIC TOLERANCE BEING FROM ± 12mm (15/32") OVER THE WHOLE AREA/ZONE. **All measurements on this document are assumed with a slab level of ± 0mm**.
  - Bearing area to withstand 2KN/m² on approach area and 1KN/m² on lane area.
  - Asphalt, used in any form as a floor for support of bowling lanes, automatically voids all guarantees by QubicaAMF.
  - In the case of installations in sensitive public areas or in a shopping centre or residential complex, particularly if on an upper level, it is recommended that an Acoustic Specialized Consultant is contacted.
  - It is not recommended to install floor heating in the bowling area including the players' area.
  - Nails will be used to fix lanes to the floor, nails will enter the floor for almost 5 cm (2"), QubicaAMF will be not responsible for any damage to pipes, electrical wiring or equipment of any type or damage to the floor of the lanes area.
- **Bowler's area:**
  - This area can be at Lane Level, in this case the height beneath the lanes (floor level) and lane level is: 410mm (1' 4" 5/32).
  - QubicaAMF is not the supplier of the bowler's area.
  - It is suggested to cover this area with a carpet, mat or plastic flooring to avoid players bringing sand or grit onto the approach. In the case of other materials, it is recommended that a strip of carpet be positioned in front of the approach.
- **Service aisles:**
  - Service aisles between or besides of the lanes are recommended to be at lane level.
  - QubicaAMF is not the supplier of the service aisles.

2.2 Suspended curtain wall

At the level of the Pinspotter Machine Masks, it is advisable to fit a suspended curtain wall (see it on Table 1.1) which will ensure separation between the lanes and machinery areas. This curtain wall could be made from a metal frame with 13mm (1/2") thick plasterboard on the external side facing the lanes and on the internal side facing the machines, a wood board (such as Plywood) on the side facing the machines is required on which QubicaAMF could affix different CPU boxes and cables.
If the EDGE String pinspotters are NOT equipped with a virtual curtain wall: across the bottom edge of the suspended curtain wall allow the installation of a 100x100mm (4" x 4") cable trunk along all the number of lanes (details at point 3.E.1 of this document).
Check your local law for suspended structures for buildings open to the public.

- **Function**
  - Separate the technical area containing the machinery from the lane and bowler's areas.
  - Reduce the spread of the noise from the workings of the machinery towards the playing area.
  - Support the CPU's and cables relating to the QubicaAMF facilities when necessary and when the Virtual Curtain Wall is **NOT** present.

- The QubicaAMF CPU boxes could be attached to the suspended/virtual curtain wall and will represent (according to the facilities choice) a load of 15 kg (33 lbs.) maximum for every pair of lanes.

- **Positioning**
  - The lowest point of this partition must end 2100mm (6’ 10” 11/16) from beneath the lanes (Finished floor level).
  - The side of the suspended curtain wall facing the machinery must be 22300mm (72’ 2”) from the threshold of the approach.
  - It must span the entire width of the lanes and of the service aisles beside the first and last lane.
  - The partition must be parallel with the threshold of the approach, perpendicular to the lanes.

2.3 Monitor hanging

Usually situated directly above the center of the approach, it is necessary to use the existing structure of the building or to organize anchorage points (wall chain, support angles, strap ...) according to monitors specifications.
Check your local law for suspended structures for buildings open to the public.

- **Weight**
  For a pair of lanes, it will depend on what monitor models and number of monitors are purchased and installed, see indicative weights for LED monitors on table shown below:

Model	Weight (Kg)	Width (mm)	Weight (Lbs)	Width (inches)
Single LED 32”	11	730	24,5	29
Double LED 32”	24	1460	53	57.5
Triple LED 32”	38	2190	84	86.3
Single LED 43”	14	1000	31	39.4
Double LED 43”	31	2000	68,5	78.8
Triple LED 43”	48	3000	106	118.2
Single LED 49”	17	1150	37,5	45.3
Double LED 49”	36	2300	79,5	90.6

- **Positioning**
  The side of the monitor facing the bowler’s is suggested to be around 2400mm (7’ 10” 1/2) from the threshold of the approach and the lower edge of the monitor 2500mm (8’ 2” 7/16) height from the lanes level (2900mm, 9’ 6” 1/4, from beneath the lanes (floor level)).

2.4 Building access

Access for Trucks carrying 40-feet containers, or articulated Trucks (38 tons) it will be necessary to close the building access so that the bowling equipment can be brought into the building.

To bring the QubicaAMF bowling equipment in to the building / bowlers area, it is necessary to have accesses into the building measuring a minimum of 2100mm (7’) high by 2100mm (7’) wide, in a place which is easily accessible from the outside, ideally it should be on the Machinery Area side.

If access is below ground, then an access ramp from the unloading platform to the bowling area access point should be provided or if it is on an upper level, organize a doorway above the unloading platform so that the handling can be done by boom truck or crane.

2.5 Storage equipment area

For storage of the QubicaAMF equipment which will be installed in the building, it is necessary for an area in the building and at the installation area level measuring around 20m² (215 ft²) per pair of lanes (according to the facilities choice), this area must not be part of the Lanes and Machinery Areas.

2.6 Secure storage customer equipment area

A secure and if possible lockable site in the premises is required to store Customers equipment like Bowling Pins, Ball, Shoes, etc. that will be delivered to site before the completion of the installation.

2.7 Secure storage tools area

To store in the premises the Installation Tools during the installation of the equipment, it is necessary for a secure and lockable room in the building and at the installation area level measuring around 10m² (110 ft²).

2.8 Soundproofing materials, false ceiling

In the case of installations in sensitive public areas or in a shopping center or residential complex, particularly if on an upper level, it is recommended that an Acoustic Specialized Consultant is contacted and perhaps arrange soundproof solutions for which QubicaAMF will be not responsible. When studying noise levels, the advice of a specialist is recommended, QubicaAMF is not authorized nor qualified for undertakings of this type.

- **Machinery room**
  It is advised that the walls and ceiling of the machinery room are covered with a soundproof coating, this is to absorb, as much noise as possible of the machinery and the impact of the pins and balls.
- **Lane Area**
  It is advised that the walls and ceiling of the lane area are covered with a soundproof coating to absorb as much as possible of the noise of the impact of the ball to the lanes. The suggested saw tooth shape of false ceilings allows uninterrupted lighting of the lanes and deflects sound waves emanating from the machinery.

2.9 Lighting

- **Machinery Room**
  Create a light intensity of 400 to 500 LUX, place light units to be in line above the ball lift centered between each pair of machines and in operation by the time installation begins.
- **Lanes area**
  - It is suggested a light intensity between 220 to 250 LUX on the surface of the lane with no areas of shadow.
  - Continuous fluorescent tubes to be installed above the lanes are suggested. These continuous tubes will be hidden by the saw tooth positioned to avoid any areas of shadow on the lanes and avoids them being seen from the bowler's area. If there isn't a false ceiling, then baffles are suggested.
  - In the case of UV reactive lanes, arrange:
    - White/Black dual-lighting fixtures support, black light tubes must be installed on the bottom of the white light tubes.
    - Switches in the Control Desk to swap between White and Black lights are required.

- **Approach area**
  - It is suggested a light intensity of 120 to 150 LUX on the surface of the Approach with no areas of shadow.
  - No light fixtures should be located directly in front of the monitors to avoid light reflections on monitor screens.
  - In the case of UV reactive lanes, arrange:
    - White/Black dual-lighting tubes support.
    - Switches in the Control Desk to swap between White and Black lights are required.
- **Bowler's area**
  - It is suggested a light intensity of 220 to 250 LUX on the surface of the Bowler's area with no areas of shadow.
  - The lighting installed above the Bowler's area and the annexes (spectator's area, entrance hall) should be of an average intensity, it is essential to ensure that the most lighting is concentrated on the lanes.
  - In the case of UV reactive lanes and/or UV reactive furniture, arrange:
    - White/Black dual-lighting support.
    - Switches in the Control Desk to swap between White and Black lights are required.

2.10 Heating, air-conditioning

The heating is usually provided by convector heaters, avoid positioning the filters in the lane area.

Our requirements state that the building must maintain a temperature in the approach area and its annexes (lanes area) of 12°C to 24°C (53°F to 75°F) and a hydrometric degree of 35 to 55% (avoiding variations is of the paramount importance).

Air-conditioning should be arranged in regions with relatively warm weather, their convectors must be not positioned in the lanes area.

2.11 Control desk

Must allow for:

- Computer system (with cash register, receipt printer and score games printer…), the follow spaces must be foreseen:
  - a space of w.30 x d.50 x h.60 cm (w. 1' x d. 1' 8" x h. 2') under the Control Desk is needed for each Computer CPU station and optional devices. These spaces must be safe from accidental access and with sufficient Computer ventilation.
  - a space of w.60 x d.40 cm (w. 2' x d. 11 4") on top of the Control Desk is needed for each Computer Station for the Keypad, Mouse and Monitor.
  - a space of w.45 x d.60 x h.35 cm (w. 1' 6" x d. 2' x h. 1' 2") under or on top of the Control Desk is needed for each Games Printer (not for receipt printers).
  - a space of w.45 x d.45 x h.15 cm (w. 1' 6" x d. 1' 6" x h. 6") under or on top of the Control Desk is needed for each Cash Drawer.
- Registration of players / bowlers.
- Distribution of rental shoes.

- Storage of shoes. Allow enough pigeonholes (shoe holes) relative to the number of lanes, 12 pigeonholes per lane are suggested. Suggested dimension per pigeonholes are w.25 x d.35 x h.15 cm (w. 10” x d. 1’ 2” x h. 6”).
- Sound and TV systems.
- Telephone.
- Lighting control panel.
- Display cases for bowling products (Pro-Shop).

The location is determined by the infrastructure of the premises and the number of lanes and should be positioned close to the lane area. A bench or an area for the changing of shoes is recommended.

2.12 Internet

QubicaAMF requests the installation of an Internet broadband connection to ensure technical support for the QubicaAMF computer system. This line will lead to the Control Desk, or to the back office, depending on the equipment chosen.

2.13 Ball racks

Placed behind the bowler’s area and assuring the separation of this area from the bar/spectators’ area. It must include enough stands for the establishment’s bowling balls (10 balls per lane on average).

2.14 Sound system

- **Public address announcements.** Only in the spectators’ and players’ area and annexes.
- **Service announcements.** Intercom (QubicaAMF Tech Wizard is recommended) in the machinery room or walkie-talkies.

2.15 Pro-shop / sales point

A sales point with display window is to be arranged, either in the Control Desk for small centers or in the form of a pro-shop for larger centers.

2.16 Bowlers locker room

Multipurpose meeting room, separate male-female locker rooms with ball lockers, is desirable in large establishments, during meetings and competitions.

2.17 Toilets

A shower could be included for competition Bowlers.
Depending on the size of the center, arrange a separate area for staff (e.g. lockers, change room) according to local legislation.

3 ELECTRICAL INFORMATION

3.1 General electrical information

Due to differing safety standards to each country, the study and provision of electricity are to be organized and provided by the Customer or through their architects. QubicaAMF only carries out the connection of the different types of machinery and appliances.

The electrical installation (wiring, receptacles, breakers, switches, bowling center Cabinet, etc.) are the responsibility of the Customer and are not supplied or installed by QubicaAMF.

All the QubicaAMF equipment supplied works at the following rating:

- 230 Volts +/- 10%.
- **50 cycles (Hz)**, alternating single-phase current.

All the QubicaAMF electrical equipment is supplied with the follow 2 type of plugs/receptacles

- Industrial Connector 240V/16A 2Pin + Earth 16A Blue IP44. **IEC309.**
- **CEE7/Schuko** Receptacle 10A.

In case local electrical standards do not allow such plugs and receptacles, the provision and the replacements of allowed receptacle need to be arranged from the Customer.

Cables must NOT be looped at each item but teed within the trunking.

In case of unstable power, it is desirable that a stabilizer or uninterruptible power supply is arranged, for the protection of the QubicaAMF electronic/computer system.

Explanation:

- **Receptacle:**
  is a female electrical connector that has slots or holes which accept and deliver current to the prongs of inserted plugs (This may differ from country to country). Receptacles are designed to accept only matching plugs and reject all others.
- **Switch:**
  is an electrical component that can break an electrical circuit.
- **Circuit Breaker:**
  is an automatically-operated electrical switch designed to protect an electrical circuit from damage caused by overload or short circuit.

3.2 Electrical sub-distribution board

N°2 Sub distribution boards are suggested:

- one situated in the **Machinery Room** for the following different elements:
    - Pinspotters.
        - Machinery Room.
        - Automated Bumpers.
        - Compressor.
        - Bumper lights.
        - Capping lights.
        - Mask backlights (Lower & Upper).
        - … others, according to the equipment options.

Show on Table 1.1 with reference SD.M.

- one situated in or back the **Control Desk** for the following different elements:
        - Computer System.
        - Scoring System.
        - Lanes and Bowlers with/black lights.
        - Ball Returns.
        - Sound System.

Show on Table 1.1 with reference SD.C.

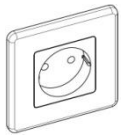
3.3 Electrical receptacles information

Many receptacles are required based on QubicaAMF Equipment and Option's chosen, listed below are all the details for each Equipment and Option's. Select on Tables 1.1 or 1.2 (based on the presence of the Virtual Curtain Wall) and on Table 2.1 the Receptacles required.

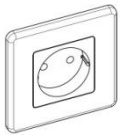
3.3.1 Pinspotter power

In the Tables:	 on Tables 1.1, 1.2, 1.3, 1.4.
Quantity:	N° 1 per pair.
Receptacle Type:	Cable end w/out connector (supplied by QubicaAMF) **OR** IEC309.
Positioning:	In the bottom of the suspended curtain wall just over the cable tray **OR** on the ceiling, if the ceiling is not too high.
Power:	1200 Watt per receptacle.
Switch:	N° 1 per receptacle.
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations. **SUGGESTED**: n° 1 per receptacle.
Sub distribution:	From machinery room.

3.3.2 Automatic bumper power supply (lane optional)

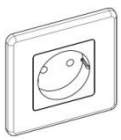
In the Tables:	on Tables 1.1, 1.2, 1.3, 1.4.	
Quantity:	N° 1 each 16 lanes of bumpers.	
Receptacle Type:	CEE7/Schuko Receptacle 16 A.	
Positioning:	In the bottom of the suspended/virtual curtain wall just over the cable tray, in front of the odd lane pinspotter of the first pair of each 16 lanes group of automatic bumpers.	
Power:	120 Watt per receptacle.	
Switch:	N° 1 per all the receptacles.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From machinery room.	

3.3.3 HyperServer

In the Tables:	on Tables 1.1, 1.2, 1.3, 1.4.	
Quantity:	N° 1 each 2 Lanes of HyperBowling.	
Receptacle Type:	CEE7/Schuko Receptacle 16 A.	
Positioning:	In the bottom of the suspended/virtual curtain wall just over the cable tray, in front to the center of the lane pair of each 2-lane pair of HyperBowling.	
Power:	450 Watt per receptacle.	
Switch:	N°1 per all the receptacles, possibly switchable from the control desk.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From machinery room.	

NOTE: This receptacle will be used as a spare for future updates of system.

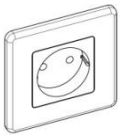
3.3.4 CenterPunch capping lights dimmer (lane optional)

In the Tables:	on Tables 1.1, 1.2, 1.3, 1.4.	
Quantity:	N°1 each strip of CenterPunch capping lights	
Receptacle Type:	CEE7/Schuko Receptacle 16 A.	
Positioning:	In the bottom of the suspended/virtual curtain wall just over the cable tray, in the center of the lane pair, every 2 lanes **SINGLE** divisions, plus one over the last lane or, in the case of a split-house, the last lane between a division.	
Power:	60 Watt per receptacle.	
Switch:	N°1 per all the receptacles, possibly switchable from the control desk.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From machinery room.	

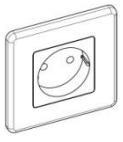
3.3.5 Scoring network switch/hub (only with BES, QScore, BES X)

In the Tables:	on Tables 1.1, 1.2, 1.3, 1.4.	
Quantity:	N° 1 till to n° 6 Score CPU's. Discuss this with your local Installation manager in case of bowling centre with more than 12 lanes or Split House lanes.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	In the bottom of the suspended/virtual curtain wall just over the cable tray centered between all the lanes. For split house or installation with more than 12 lanes please contact the local Installation managers.	
Power:	50 Watt per receptacle.	
Switch:	N° 1 per all receptacles.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From control desk.	

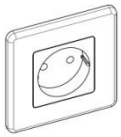
3.3.6 Scoring CPU

In the Tables:	on Tables 1.1, 1.2, 1.3, 1.4.	
Quantity:	N° 1 each pair of lanes.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	In the bottom of the suspended/virtual curtain wall just over the cable tray, in the center of each lane pair.	
Power:	150 Watt per receptacle.	
Switch:	N° 1 every 2 receptacles.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From control desk.	

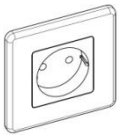
3.3.7 CenterPunch deck lights effects server (scoring optional)

In the Tables:	on Tables 1.1, 1.2, 1.3, 1.4.	
Quantity:	N° 1 per center.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	In the bottom of the suspended/virtual curtain wall, just over the cable tray, near the position where the CenterPunch deck lights effects server has to be fixed.	
Power:	150 Watt.	
Switch:	N°1 per receptacle.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From machinery room.	

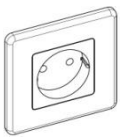
3.3.8 CenterPunch pin deck lights dimmer 2

In the Tables:	on Tables 1.1, 1.2, 1.3, 1.4.	
Quantity:	N° 1 per pair of lanes.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	In the bottom of the suspended/virtual curtain wall, just over the cable tray, near the center of the lane pair.	
Power:	45 Watt per receptacle.	
Switch:	N°1 per receptacle.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From machinery room.	

3.3.9 Masking back-lights (optional)

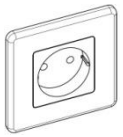
In the Tables:	on Tables 1.1, 1.2, 1.3, 1.4.	
Quantity:	N° 1 per back-lighted mask panels (n°1 per pair of lanes in case of just lower backlight mask, while n° 2 per pair of lanes in case of lower and upper backlight masks).	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	In the bottom of the suspended/virtual curtain wall just over the cable tray centered between each pair of lanes.	
Power:	150 Watt per receptacle.	
Switch:	N° 1 every 4 receptacles, possibly switchable from the control desk.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From control desk.	

3.3.10 Air compressor for automatic bumpers (lane optional)

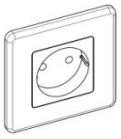
In the Tables:	on Tables 1.1, 1.2.	
Quantity:	N° 1 for all the automatic bumpers.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	Where the air compressor will be installed.	
Power:	The power for the air compressor depends from the number of automatic bumpers installed. Customer must check details of his air compressor.	
Switch:	N° 1 per receptacle.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From machinery room.	

The Air Compressor is **NOT** supplied by QubicaAMF. QubicaAMF suggest a Volume of 100 Liters for every 10 lanes for a Minimum Power of 3hp or 2,2Kw (Work Pressure is recommended between 60 to 70 Psi).

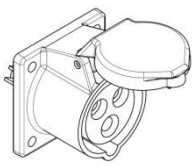
3.3.11 Ball return

In the Tables:	on Tables 1.1, 1.2.	
Quantity:	N° 1 per unit.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	These cable per pair of lanes must be available in the bottom of the ball return under the approach area.	
Power:	900 Watt per ball return.	
Switch:	N° 1 every 2 units, possibly switchable from the Control Desk.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From control desk.	

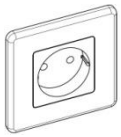
3.3.12 Monitor

In the Tables:	on Tables 1.1, 1.2.	
Quantity:	N° 1 each monitor. Monitors can be assembled double or triple for each pair of lanes, in case of double monitors n° 2 receptacles are necessary per pair of lanes, while in case of triple monitors n° 3 receptacles are necessary per pair of lanes.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	Back or over the monitor, no far than 1 mt from the monitor power plug.	
Power:	300 Watt per monitor.	
Switch:	N° 1 every 4 lanes.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From control desk.	

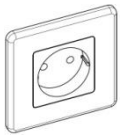
3.3.13 Lanes maintenance machine

In the Tables:	on Tables 1.1, 1.2.	
Quantity:	N° 1 each 4 lanes is suggested, but the quantity depend from the total number of lanes and where receptacles will be installed.	
Receptacle Type:	Industrial connector 240V/16A 2Pin + Earth 16A Blue IP44. IEC309.	
Positioning:	These receptacles could be available on the sidewalls halfway between the machinery and the bowlers' area or in any other position on the bowlers' area, discuss this with your local Installation manager.	
Power:	3500 Watt for the **Summit** machine, while 2800 Watt for the **EZ Touch** machine.	
Switch:	N° 1 per all the receptacles (if more than 1).	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From machinery room.	

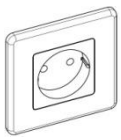
3.3.14 MMS CPU (scoring optional)

In the Tables:	on Tables 1.1, 1.2.	
Quantity:	N° 1 each MMS controller unit.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	No far than 50 cm where the MMS control unit will be installed, usually the MMS controller unit is/are located no far than 8 mt from MMS monitor/s.	
Power:	50 Watt per receptacle.	
Switch:	N° 1 per all the receptacles.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From control desk.	

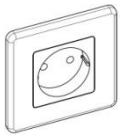
3.3.15 MMS monitor (scoring optional)

In the Tables:	on Tables 1.1, 1.2.	
Quantity:	N° 1 each MMS monitor.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	No far than 50 cm from the monitor power plug. For monitor mounted in the wall it is suggested to positioning the receptacle in a hide location.	
Power:	280 Watt per monitor.	
Switch:	N° 1 per all the receptacles.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From control desk.	

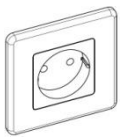
3.3.16 MMS extender (scoring optional)

In the Tables:	on Tables 1.1, 1.2.	
Quantity:	N° 2 each MMS monitor far than 40 mt from the MMS controller unit	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	N° 1 receptacle by side the MMS monitor power plug and the second receptacle by side the MMS controller unit power plug.	
Power:	20 Watt per receptacle.	
Switch:	N° 1 per all the receptacles.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From control desk.	

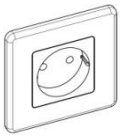
3.3.17 Computer Station

In the Tables:	on Tables 1.1, 1.2.	
Quantity:	A minimum of n° 3 receptacles are needed for each computer station, but it must be taken in consideration to have extra receptacles for every optional device installed for each computer. Here below the list of devices that need a receptacle and their power: ○ computer case 350 W; ○ computer monitor 120 W; ○ network switch 50 W; ○ laser printer 700 W; ○ receipt printer 80 W; ○ magnetic card R/W 10 W; Please report on Table 3.2 how many receptacles for each computer stations are required based on devices chosen.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	In the control desk no far than 50 cm (1' 8") from the computer system and their devices.	
Power:	Refer here above at quantity details for the power of each devices.	
Switch:	N° 1 each computer station including all his devices.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From control desk.	

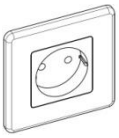
3.3.18 CenterPunch capping lights controller (optional)

In the Tables:	on Tables 1.1, 1.2.	
Quantity:	N°1 for all the CenterPunch capping lights.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	In the Control Desk where CenterPunch capping lights controller will be located.	
Power:	30 Watt per receptacle.	
Switch:	N° 1 per receptacle.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From control desk.	

3.3.19 Separate server (computer station optional)

In the Tables:	⊗ on Tables 1.1, 1.2.	
Quantity:	N° 3 per separate server.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	In a safe room, possibly close to control desk.	
Power:	600 Watt	
Switch:	N° 1 per receptacle.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From control desk.	

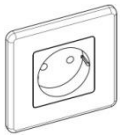
3.3.20 QubicaAMF internet gateway

In the Tables:	★ on Tables 1.1, 1.2.	
Quantity:	N° 1 per QubicaAMF internet gateway.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	In a safe room, possibly close to the router of the internet connection of the center or close to the separate server when present.	
Power:	20 Watt.	
Switch:	N° 1 per receptacle.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From control desk.	

3.3.21 Intercom VoIP- VoIP Server (optional)

In the Tables:	⊗ on Tables 1.1, 1.2, 1.3, 1.4.	
Quantity:	N° 1 per center.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	In the bottom of the suspended/virtual curtain wall, just over the cable tray, near the position where the Intercom VoIP – VoIP server has to be fixed.	
Power:	150 Watt.	
Switch:	N°1 per receptacle.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From machinery room.	

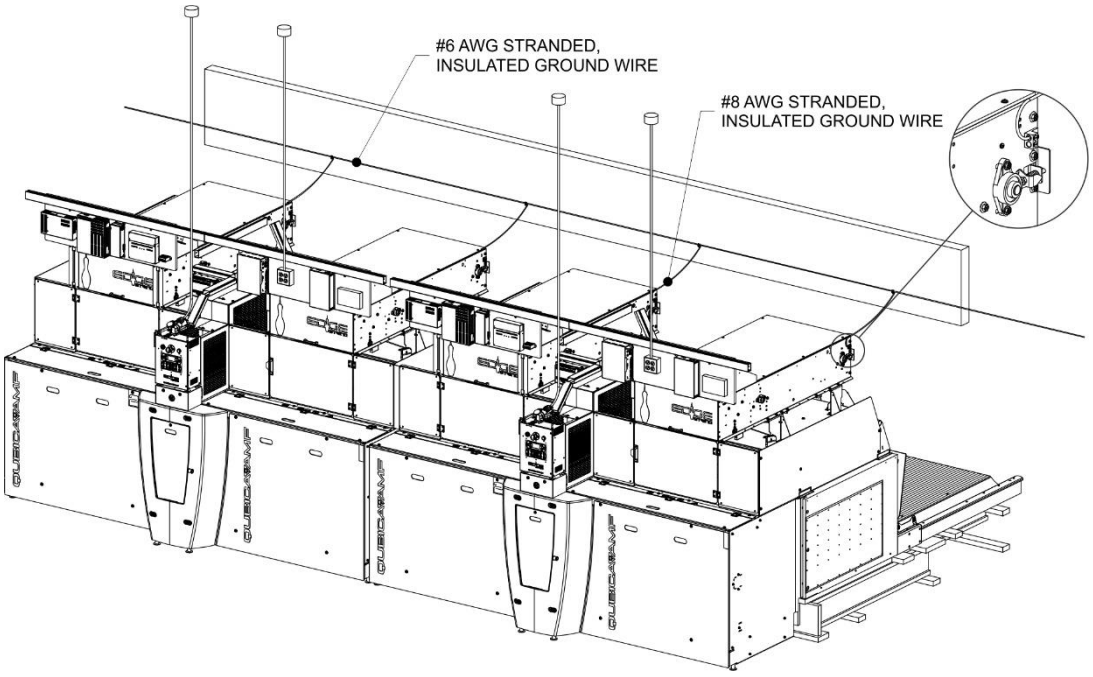
3.3.22 Intercom VoIP- PoE Network Switch (optional)

In the Tables:	★ on Tables 1.1, 1.2, 1.3, 1.4.	
Quantity:	N° 1 per center.	
Receptacle Type:	CEE7/Schuko receptacle 16 A.	
Positioning:	In the bottom of the suspended/virtual curtain wall just over the cable tray centered between all the lanes.	
Power:	130 Watt per receptacle.	
Switch:	N° 1 per all receptacles.	
Circuit Breaker:	For a correct sizing for the circuit breaker, please refer to your local regulations.	
Sub distribution:	From control desk.	

3.4 Grounding of the machinery

A good ground connection is **MANDATORY** for each EDGE String pinspotter. On the suspended/virtual curtain wall, or along the ceiling / false ceiling, arrange to have coming from the Bowling Centre main distribution board:

- A 13,3 mm² (6 AWG) cable at the top of the suspended/virtual curtain wall and running along all the machines.
- An 8,3 mm² (8 AWG) cable, centered per pair of lanes with a lug at the end, long enough to be connect to the machinery.



3.5 Electrical conduits information

3.5.1 SCW cable trays

C.01 on Tables 1.1.

Along the whole width of the technical area, it is required a cable trunking 100x100 mm (4” x 4”), situated on machinery area side to the bottom of the suspended/virtual curtain wall.

3.5.2 Homerun

C.02 on Tables 1.1.

Conduit 50 mm (2”) diameter, leading from the Control Desk to the middle of the suspended/virtual curtain wall on the machinery area side.

3.5.3 Ball return & foul line

C.03 on Tables 1.1.

For each pair of lanes, a 63 mm (2” 1/2) diameter conduits under the lanes, leading from the bottom of the machines to the Foul Line and then to the Ball Return under the approach area.

3.5.4 Upper monitors score

C.04 on Tables 1.1.

For each pair of lanes, a 40 mm (1” 1/2) diameter conduits in the false ceiling, leading from top of the Monitors to the suspended/virtual curtain wall in front the right pinspotter platform.

3.5.5 Score console (option)

C.05 on Tables 1.1.

Conduit 40 mm (1” 1/2) in diameter leading from the approach to the where the consoles are installed (1 or 2 per pair of lanes depending on the configuration of the consoles).

3.5.6 Additional computers (option)

C.06 on Tables 1.1.

Only in case of a Separate Server not being present.

For each Additional Computer Station (Control Desk, Back Office, etc.) a 63 mm (2” 1/2) diameter conduit from the Main Computer to every Additional Computers.

3.5.7 Separate server (option)

C.07 on Tables 1.1

For each Additional Computer Station (Control Desk, Back Office, etc.) a 63 mm (2” 1/2) diameter conduit from the Separate Server to every Additional Computers.

3.5.8 QubicaAMF internet gateway

C.08 on Tables 1.1.

Conduit 63 mm (2” 1/2) in diameter leading from the QubicaAMF Internet Gateway to the Main Computer or the Separate Server.

3.5.9 MMS CPU (option)

C.09 on Tables 1.1.

Conduit 40 mm (1” 1/2) in diameter leading from the MMS CPU to the Main Computer or the Separate Server.

3.5.10 MMS monitors (option)

C.10 on Tables 1.1.

For each MMS Monitor a 50 mm (2”) diameter conduit from the MMS CPU to every MMS Monitors.

4 Standards for the installation of QubicaAMF equipment

In terms of the opening date of the Bowling Centre, it is advisable for us to be able to begin installation work five to six weeks prior to the opening date (time taken will depend on the number of lanes and as a guide, 3 working days per lane on EU countries). Discuss this with your local Installation manager.

This is assuming that on the beginning date of the installation, the Customer will be able to make available to QubicaAMF fully completed premises in terms of a Bowling Lanes Area (see Point 1.1), complying with the required technical specifications (see Point 4.2).

Site Conditions at time of installation can play an important part in the finished product and is also a condition of the QubicaAMF standard warranty terms.

4.1 Complete premises

By complete premises we mean:

- Premises which are completly closed in and secure.
- premises which are completly WATER-TIGHT (ceilings and floors). In this respect, we think it is useful to pay particular attention to the need for complete water-tightness of the floors of the building for the preservation of the bowling equipment and particularly of the lanes.
- DRY premises, which assumes:
    - that temperature range is 12°C to 24°C (53°F to 75°F).
    - that humidity range is 35% RH to 55% RH.
    - that the heating (during cold period) has been installed and has been in working order for at least several days before installation begins and for the entire duration of our work.

These conditions are required to ensure that lanes material on site have the opportunity to acclimate and equalize to approx. normal operational levels at time of the installation and comply with QubicaAMF warranty conditions.

- premises in which the floors have been prepared in accordance with our technical specifications (gradient and level). (see point 2.A).

The QubicaAMF working area will comprise of the complete Bowling Lane Area sidewall to sidewall. Access into this area should be restricted to the QubicaAMF installation crew during the whole installation period. No work is to be undertaken in this area or on the lanes without the prior permission of QubicaAMF. If necessary, then proper and adequate protection must be provided to or by the Contractor that needs to work in the area at their own expense and permission should be sought from QubicaAMF to work in this area. QubicaAMF will not be held responsible for any damage and may charge for any repairs if required.

It is recommended that temporary screens/protections are erected between the Bowling Lanes Area (including bowler's area) and rest of the site to provide a demarcation line and to offer a protection to the QubicaAMF equipment. The bowler's area will be used for storage by QubicaAMF for the duration of the installation.

4.2 Complete bowling area

By completed bowling area, we mean:

- The False ceiling in place in all the Bowling Lanes area (see Point 1.A). This implies that the ventilation and heating ducts, the electrical conduits and any other equipment may need to be installed over the false ceiling have already been implemented.

- The Hanging of the monitors (see Point 2.C) ready and accessible, may be QubicaAMF installers will require to remove a number of ceiling tiles (where present) to access the monitor hanging.
- Electrical installations complete:
  - Lights fitted above the Bowling Lanes and Machinery areas and in working order.
  - Electrical Conduits implemented in all the indicated places.
  - Provisional power supply (7 KW) installed in time for our work to begin, to allow the connection of power tools, and the lighting of the installation area (work at night, as in the day).
  - Full working power at the latest three or two weeks before the planned end of the installation date.

All electricity costs incurred during the installation shall be borne by the Customer.

- The suspended/virtual curtain wall is in place, strictly separating the lanes area, from the machinery area.
- The building access for the QubicaAMF equipment arranged in compliance with our technical specifications. (See Point 2.D).
- Area where the bowling is to be installed completely empty and cleaned in time for the planned installation date.
- Floor of the Machinery Area painted with anti-dust paint.
- Control Desks constructed and ready for the computer's installation one week before the planned Score end installation date.
- Decorations of the walls to the sides of the lanes completed.

It is essential that no other companies or individuals need to intervene, either during or after our intervention, in this whole area.

4.3 Storage equipment area

The delivery of QubicaAMF equipment will take place over the course of the two weeks preceding the planned installation date, therefore it will also be necessary for a space to be made available to QubicaAMF for the storage of the equipment on site (around 20m², 215 ft², per pair of lanes), or if the preparation of the building is not sufficiently advanced, in another site in the building of Customer's choice. In the second case, the handling and transportation of QubicaAMF equipment, from this site to the Bowling Centre, will be the responsibility of the Customer as well to arrange all insurance necessary to protect the equipment. In any event, the storage site must be lockable and dry (see Complete Premises conditions at point 4.1) to ensure the safe keeping of QubicaAMF equipment from the time it is delivered to when it is installed, which falls under Customer responsibility.

4.4 Secure storage tools area

A site in the Bowling Centre of approximately 10 m², lockable and lit, must be made available to QubicaAMF (usually close or in the Machinery Area) to store all the Installers tools.

4.5 Secure storage customer equipment area

A secure and if possible lockable site in the Bowling Centre is suggest storing Customer's equipment like Bowling Pins, Ball, Shoes, etc. that will be delivered to site before or during the installation period.

4.6 Refuse disposal area

A space (refuse skips/containers) adjacent to the works for the disposal of wood off-cuts, sawdust, empty crates, packaging and other rubbish must be made available. Arrangement for their removal at the end of the work are the Customer's responsibility (and should meet local regulations). QubicaAMF crew will be responsible for site cleanliness within the Bowling Lanes Area.

QubicaAMF cannot be held responsible, under any circumstances, for any damage that may occur whether the burning, or the scattering of rubbish, saw dust, etc.

4.7 Access for QubicaAMF installation crew

QubicaAMF require 12 hours a day for 7 working days a week unlimited access to the site for all the duration of the QubicaAMF installation plan. Extended hours may be required (by prior agreement).

Any downtime or delay to the QubicaAMF installation program due to any points not being met in this document, QubicaAMF may demand additional payments for the installation crews 'waiting time'.

4.8 Monitor installation

A structural engineer's certificate is required by QubicaAMF to ensure that the overhead structure is capable of supporting the weight of the monitors if QubicaAMF will be the installer of the monitors.

The Customer must provide free of charge a tower scaffold unit when installing the scoring monitors.

5 Access for bowling equipment

5.1 Access requirement

The Customer must organize near the Bowling Centre the following:

- Access for Trucks carrying 40-foot containers, or articulated Trucks (38 tons).
- The Customer must provide free of charge, all necessary help to QubicaAMF in the offloading and ingress of the QubicaAMF Equipment into the bowling area on site. This help will include the provision of any specialized lifting equipment such as cranes, forklifts (with 2m long extension on the fork), boom truck, pallet trolleys together with drivers and laborers (4 or 5 men).
- Access points to the Bowling Centre at the level of the lanes of 2.10m (6' 11") high by 2.10mt (6' 11") wide for the access of the equipment.
- A hard-surfaced floor from the building access point to the Bowling Area for the passage of a forklift or pallet trolley with a burden of 1,800 kg (3970 Lbs.) and 5mt x 2mt x h2.1mt (16' 5" x 6' 7" x h. 6' 11") dimension.
- If access is below ground, organize an access ramp from the unloading platform to the Bowling Centre access point or if it is on an upper level, organize a doorway above the unloading platform so that the handling can be done by boom truck or crane.

Ideally the equipment should be brought from the Machinery area side, but if unable to do so then it is possible to deliver the machinery from the bowlers' side.

5.2 Pallettes example

Examples of cargos or palettes – Maximum Weights and Dimensions:

Wood for foundations	400cm x 170cm x H 170cm 13' 1" 1/2 x 5' 7" x H 5' 7"	800 kg. 1765 lbs.
Wood for lanes	380cm x 1.50mt x H 1.50mt 12' 5" 5/8 x 4' 11" x H 4' 11"	1800 kg. 3968 lbs.
I-Beams (86 pieces pallet)	490cm x 125cm x H 75 cm 16' x 4' x 2' 6"	1330 kg. 2931 lbs.
Machines **Component crate pair**	185cm x 140cm x H 72cm 6' 1" x 4' 7" x H 2' 4" 1/2	582 kg. 1283 lbs.
Pinspotter pallet	114cm x 147cm x H 197cm 3' 9" x 4' 10" x 77.5 H 6' 5" ½	428 kg. 943 lbs.
Synthetic lanes	380cm x 1.20cm x H 60cm 12' 5" 5/8 x 3' 11" x H 1' 11"	1800 kg. 3968 lbs.

It is advisable to add to these dimensions the length of the forklift or pallet trolley.

6 Schedules and general conditions

6.1 Schedules

As soon as a project enters in a formal stage, the Customer and their architect must call on the QubicaAMF technical officer. At this preliminary meeting, QubicaAMF will provide all the necessary technical information for the Bowling Centre in preparation for the implementation of the architect's plans. Once these plans are completed Customer and their architect must call on the QubicaAMF technical officer for the technical verification and if necessary any observations will communicate.

Prior to the second phase of finishing work, the Customer must send to QubicaAMF a definitive schedule to plan the transportation of the equipment and the schedule of works for the installation crew.

The schedule will be confirmed following a site visit by the technical officer, which will take place ten to fifteen days before the planned date for installation to begin and the date of our intervention will be finalized, considering the progress of the work.

6.2 General conditions

- The general conditions hereby set out in this technical specification will be the only ones governing this document to the exclusion of any other document issued by the contracting party, barring prior agreement.
- All plans provided by QubicaAMF are for information or guidance only and are not exclusive plans. They are provided for the Customer and/or their architect to allow them to create execution plans specific to each installation, and they do not commit QubicaAMF to any further responsibility.
- If during installation, modifications or additions to the structural work or the finishing work are necessary, these will be carried out by their representative and at the Customer's expense.

7 Site safety

The Customer, their Project Manager, and their architect are responsible for the safety of the site in its entirety and must respect all current regulations.

Additionally, they are required to provide healthy working conditions necessary for those working on site which meets local laws.

8 Contacts

Tech Support EMEA offices:

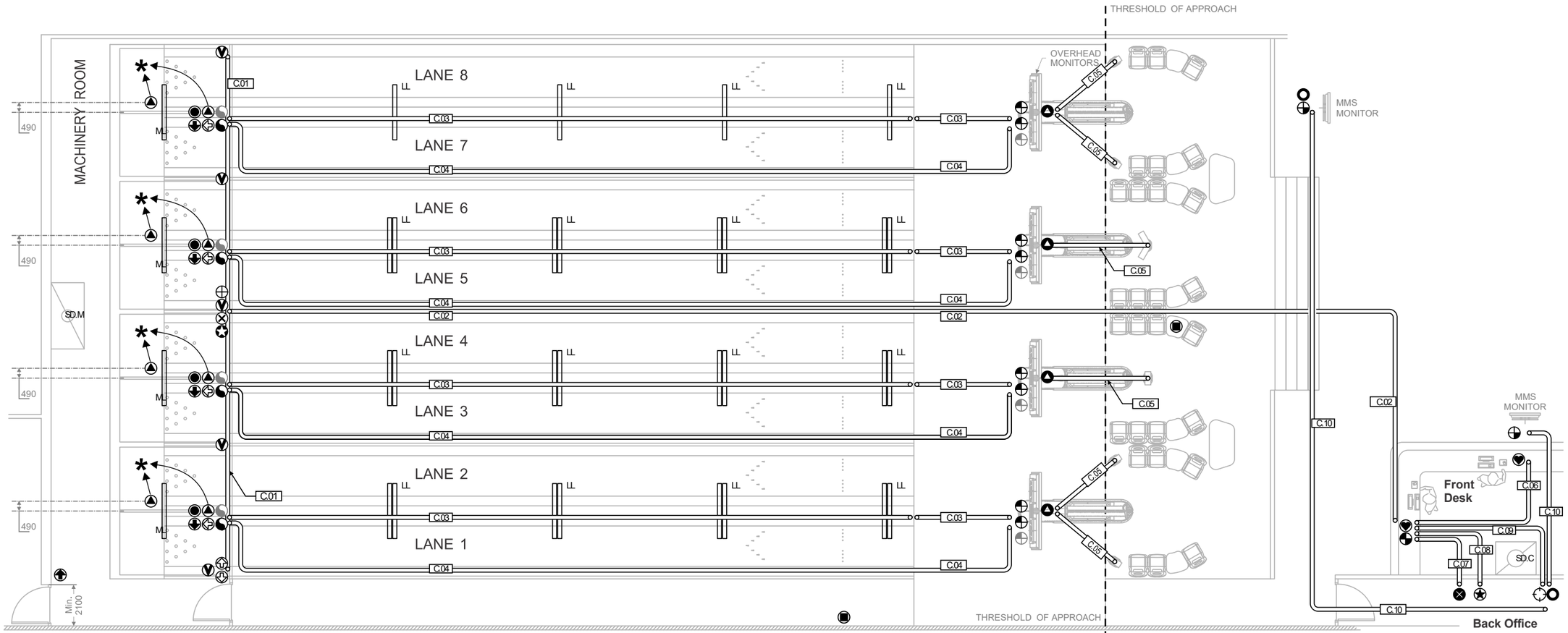
ITALY	E-mail: **techsupport@qubicaamf.com** Phone: +39 – 051 4192 630
UK (UK & Ireland)	E-mail: **techsupportUK@qubicaamf.com** Phone: +44 – 1442 286 525
FRANCE	E-mail: **techsupport@qubicaamf.com** Phone: +33 – 140 899 470

Warranty EMEA:

ITALY	E-mail: **emea-warranty@qubicaamf.com** Phone : +39 – 051 4192 611

Spare Parts EMEA:

UK (UK & Ireland)	E-mail: **uk-orders@qubicaamf.com** Phone: +44 (0)1 442 286500
FRANCE	E-mail: **csporderfrance@qubicaamf.com** Phone: +33 (0)1 40 89 94 72
ITALY	E-mail: **Commerciale@qubicaamf.com** Phone: +39 051 4192608
EMEA (other countries)	E-mail: **customer.service.emea@qubicaamf.com** Phone: +39 051 4192708



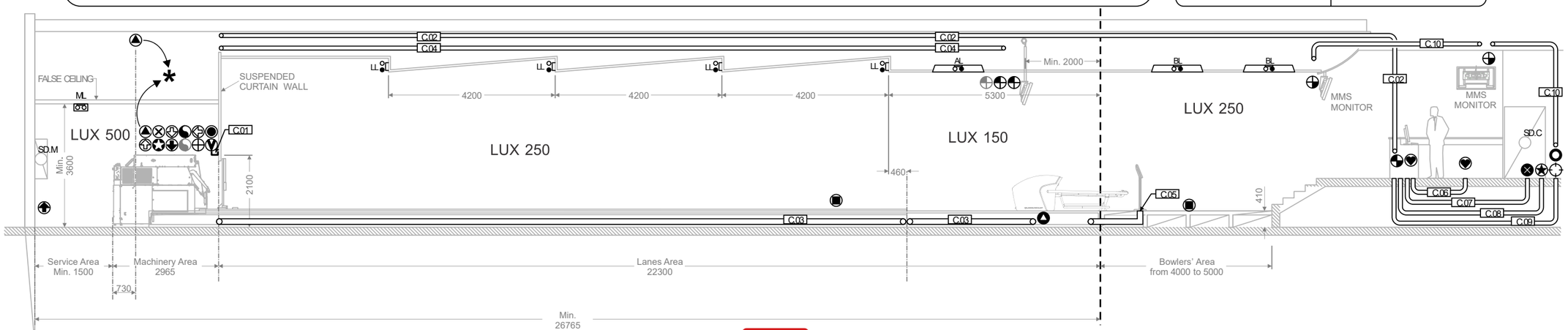
POWER SUPPLY RECEPTACLES LEGEND

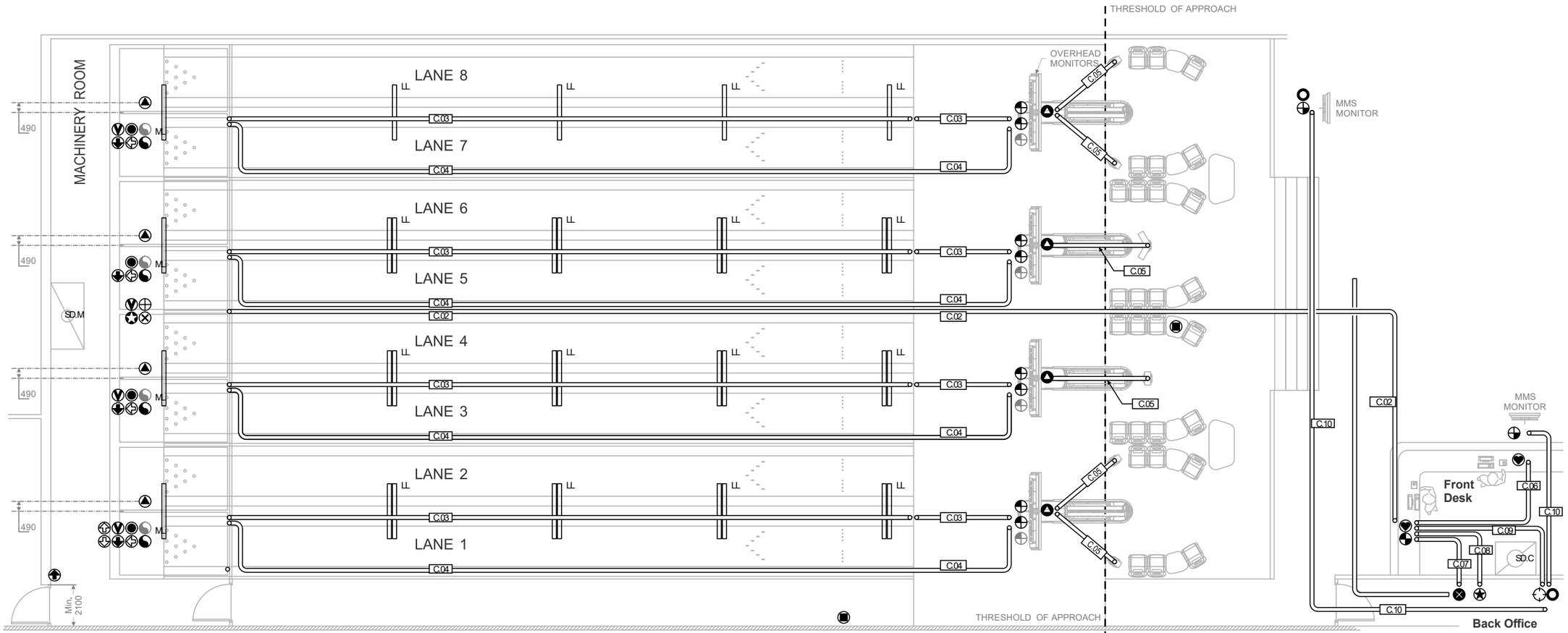
Pinspotter power *	Scoring network switch	Lower back lights mask	Score monitor	MMS monitor	Separate server
Automatic bumper power supply	Scoring CPU	Upper back lights mask	Score third monitor	MMS extender	QubicaAMF Internet Gateway
HyperServer	CenterPunch deck lights effects server	Air compressor for automatic bumpers	Lanes maintenance machine	Computer station	VoIP Server
CenterPunch capping lights dimmer	CenterPunch pin deck lights dimmer	Ball return	MMS CPU	CenterPunch capping lights controller	VoIP PoE Switch

NOTE*: The **Pinspotter power** could be installed in one of the targeted positions, on the rear of the curtain wall **OR** on the ceiling, if the ceiling is not too high.

CONDUITS LEGEND

C.01 SCW cable trays	C.06 Additional computers
C.02 Homerun	C.07 Separate server
C.03 Ball return & foul line	C.08 QA Internet Gateway
C.04 Upper monitors score	C.09 MMS CPU
C.05 Score console	C.10 MMS monitor





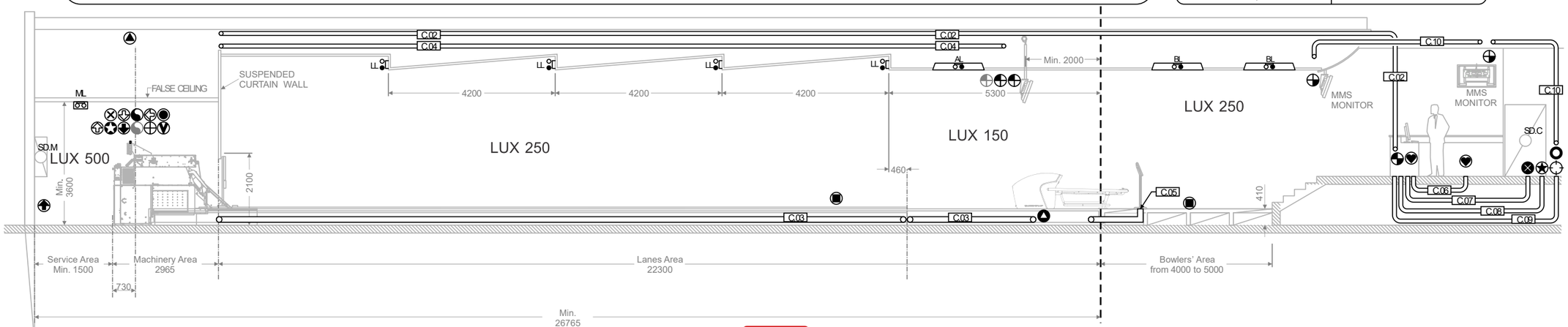
POWER SUPPLY RECEPTACLES LEGEND

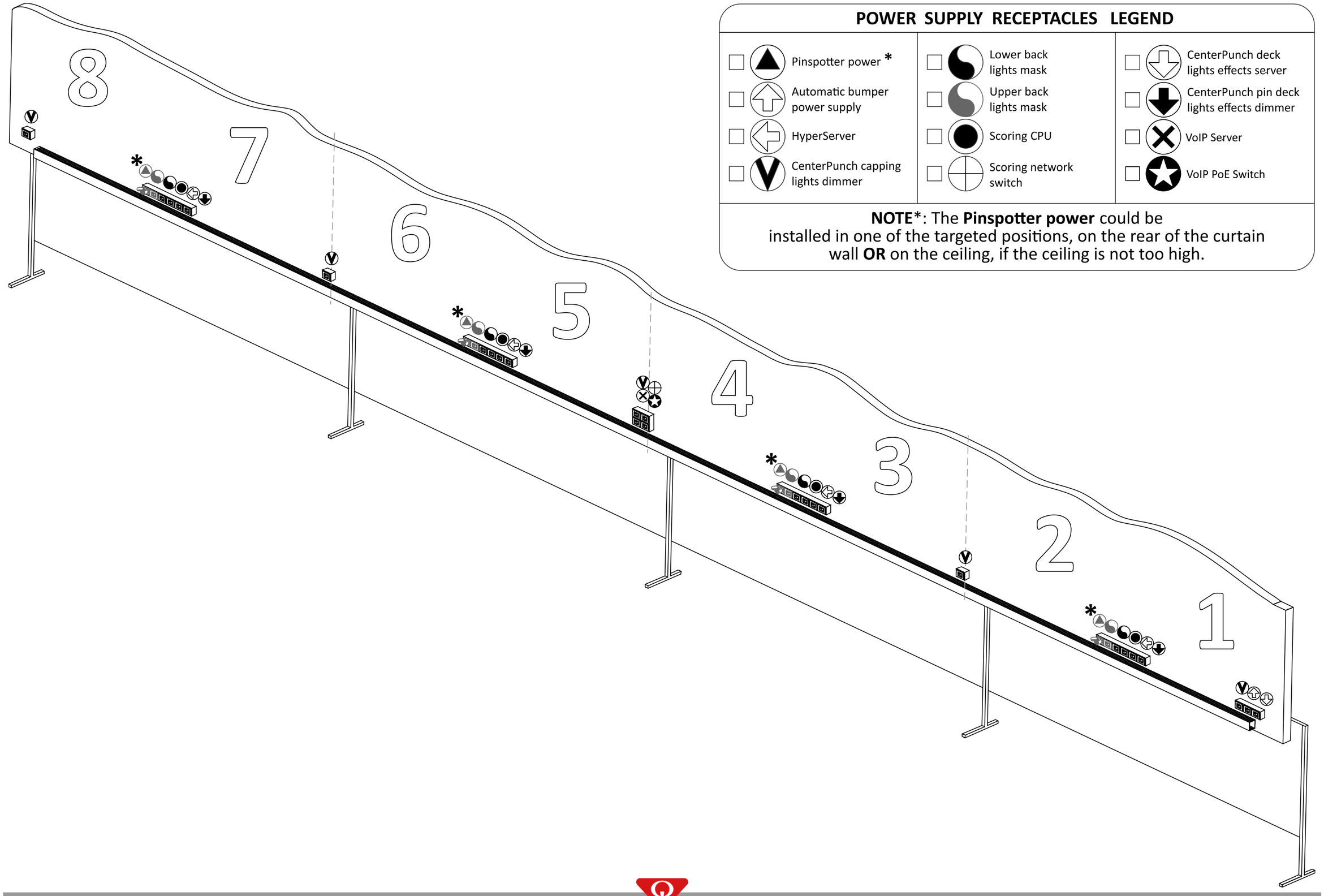
Pinspotter power	Scoring network switch	Lower back lights mask	Score monitor	MMS monitor	Separate server
Automatic bumper power supply	Scoring CPU	Upper back lights mask	Score third monitor	MMS extender	QubicaAMF Internet Gateway
HyperServer	CenterPunch deck lights effects server	Air compressor for automatic bumpers	Lanes maintenance machine	Computer station	VoIP Server
CenterPunch capping lights dimmer	CenterPunch pin deck lights dimmer	Ball return	MMS CPU	CenterPunch capping lights controller	VoIP PoE Switch

NOTE: The receptacles in the **Service** and **Machinery** areas should be prepared prior or during the installation of the pinspotters.

CONDUITS LEGEND

C.02 Homerun	C.07 Separate server
C.03 Ball return & foul line	C.08 QA Internet Gateway
C.04 Upper monitors score	C.09 MMS CPU
C.05 Score console	C.10 MMS monitor
C.06 Additional computers	





POWER SUPPLY RECEPTACLES LEGEND

- ☐ Pinspotter power *
- ☐ Automatic bumper power supply
- ☐ HyperServer
- ☐ CenterPunch capping lights dimmer
- ☐ Lower back lights mask
- ☐ Upper back lights mask
- ☐ Scoring CPU
- ☐ Scoring network switch
- ☐ CenterPunch deck lights effects server
- ☐ CenterPunch pin deck lights effects dimmer
- ☐ VoIP Server
- ☐ VoIP PoE Switch

NOTE*: The **Pinspotter power** could be installed in one of the targeted positions, on the rear of the curtain wall **OR** on the ceiling, if the ceiling is not too high.

POWER SUPPLY RECEPTACLES LEGEND

- ☐ Pinspotter power
- ☐ Automatic bumper power supply
- ☐ HyperServer
- ☐ CenterPunch capping lights dimmer
- ☐ Lower back lights mask
- ☐ Upper back lights mask
- ☐ Scoring CPU
- ☐ Scoring network switch
- ☐ CenterPunch deck lights effects server
- ☐ CenterPunch pin deck lights effects dimmer
- ☐ VoIP Server
- ☐ VoIP PoE Switch

NOTE: The receptacles should be prepared prior or during the installation of the pinspotters.

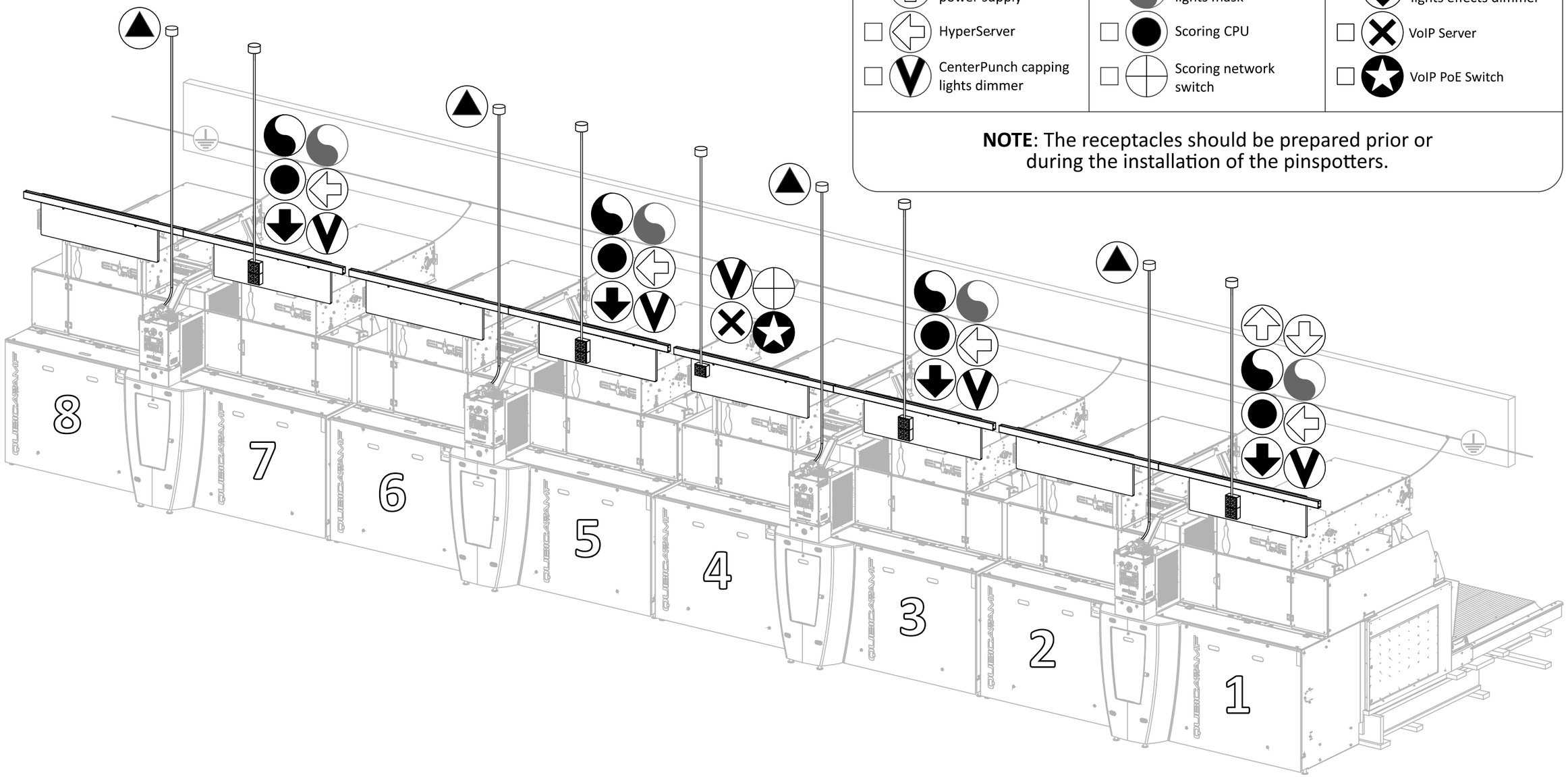


Table 2.1 – ELECTRICAL RECEPTACLES RECAP

Required	Plan symbol	Devices	QTY	Power device (W)	Total power (W)	Receptacle type	Switches X recept.	Circuit breakers	Doc. reference
Y - N		Pinspotter power		1200		Cable-end; IEC309		*	3.3.1
Y - N		Automatic bumper PS		120		CEE7/Schuko		*	3.3.2
Y - N		HyperServer		450		CEE7/Schuko		*	3.3.3
Y - N		CP capping lights dimmer		60		CEE7/Schuko		*	3.3.4
Y - N		Scoring network switch		50		CEE7/Schuko		*	3.3.5
Y - N		Scoring CPU		150		CEE7/Schuko		*	3.3.6
Y - N		CP deck lights effects server		150		CEE7/Schuko		*	3.3.7
Y - N		CP pin deck lights dimmer 2		45		CEE7/Schuko		*	3.3.8
Y - N		Masking back-lights		150		CEE7/Schuko		*	3.3.9
Y - N		Bumpers air compressor		N.S.		CEE7/Schuko		*	3.3.10
Y - N		Ball return		900		CEE7/Schuko		*	3.3.11
Y - N		Score monitor		300		CEE7/Schuko		*	3.3.12
Y - N		Lanes machine (Summit)		3500		IP44. IEC309		*	3.3.13
Y - N		Lanes machine (EZ Touch)		2800		IP44. IEC309		*	3.3.13
Y - N		MMS CPU		50		CEE7/Schuko		*	3.3.14
Y - N		MMS monitor		280		CEE7/Schuko		*	3.3.15
Y - N		MMS extender		20		CEE7/Schuko		*	3.3.16
Y - N		Computer station	See Table 3.2			CEE7/Schuko		*	3.3.17
Y - N		CP capping lights controller		30		CEE7/Schuko		*	3.3.18
Y - N		Separate server station		600		CEE7/Schuko		*	3.3.19
Y - N		QAMF internet gateway		20		CEE7/Schuko		*	3.3.20
Y - N		Intercom VoIP - VoIP Server		150		CEE7/Schuko		*	3.3.21
Y - N		Intercom VoIP - PoE Network Switch		130		CEE7/Schuko		*	3.3.22

Total power required for all the bowling equipment:

*: for a correct sizing for the circuit breaker, please refer to your local regulations.

Table 2.2 – COMPUTER STATIONS RECEPTACLES RECAP

In the plan: 

Devices	Receptacle Type	Power Devices (W)	Server	FrontDesk 1	FrontDesk 2	FrontDesk 3	FrontDesk 4	FrontDesk 5	FrontDesk 6
Computer case	CEE7/Schuko	350							
Computer monitor	CEE7/Schuko	120							
Network switch	CEE7/Schuko	50							
Laser printer	CEE7/Schuko	700							
Receipt printer	CEE7/Schuko	80							
Magnetic cards R/W	CEE7/Schuko	10							
Extra 1	CEE7/Schuko	50							
Extra 2	CEE7/Schuko								
Extra 3	CEE7/Schuko								
Extra 4	CEE7/Schuko								

Total N° of receptacles per computer station:							
Total Power required per computer station:							

Table 2.3 – ELECTRICAL CONDUITS RECAP

Required	Plan Symbol	Conduits	QTY	Diameter	From	To	Doc. Reference
Y - N	C.01	SCW cable trays		100 x 100 mm 4” x 4”	Lane n° 1 in the suspended curtain wall	Lane n° __ in the suspended/virtual curtain wall	3.5.1
Y - N	C.02	Homerun		50 mm 2”	Main computer or separate server	Between lanes __ / __ in the suspended/virtual curtain wall	3.5.2
Y - N	C.03	Ball return & foul line		63 mm 2” 1/2	Bottom of each pair of pinspotters	Each ball return	3.5.3
Y - N	C.04	Upper monitors score		40 mm 1” 1/2	Upper each pair of monitors	Each pair of lanes in the suspended/virtual curtain wall	3.5.4
Y - N	C.05	Score console		40 mm 1” 1/2	Under each ball return	Bottom of each console	3.5.5
Y - N	C.06	Additional computers		63 mm 2” 1/2	Main computer or separate server	Each additional computer	3.5.6
Y - N	C.07	Separate server		63 mm 2” 1/2	Separate server	Each additional computer	3.5.7
Y - N	C.08	QAMF internet gateway		63 mm 2” 1/2	Main computer or separate server	QAMF internet gateway	3.5.8
Y - N	C.09	MMS CPU		40 mm 1” 1/2	Main computer or separate server	MMS CPU	3.5.9
Y - N	C.10	MMS monitors		50 mm 2”	MMS CPU	Each MMS monitor	3.5.10

Signed:	Signed:	Date:
For and on behalf of: **QubicaAMF S.p.A.**	For and on behalf of:	