

## MB1215DE (BX) 型集装箱 (车辆) 检查系统 建筑工程设计条件

## Constructive Design Conditions for MB1215DE (BX) Container (Vehicle) Check System

## 一、工程概况

## 1. Project description

“同方威视 MB1215DE (BX) 型集装箱/车辆检查系统”是利用X射线的穿透能力及辐射成像技术，经装卸货物就可实现对车内货物进行透视检查。该设备安装在三条轨道上，由扫描设备、控制站、图像检查站等组成。

1.The check system of containers(vehicles) of MB1215DE(BX) type by NucTech can check goods in vehicles by applying penetration capacity of X-ray and radiation imagery technology without unloading or loading. The equipment is installed on three rails and consists of scanning equipment, control station.

## 二、建筑总体要求:

## 2. General requirements in construction:

1) 该项目为改造项目，利用原有场地进行改造，设备占地和使用范围，以及辐射防护范围，须满足我公司提供的“同方威视MB1215DE (BX) 型集装箱/车辆检查系统”平面布置图的要求。见附图。

2.1 This project is a renovation project, which uses the original site for renovation.The land area, use scope, and radiation protection scope for the equipment shall meet the requirements of the layout for the NUCTECH MB1215DE (BX) Container/Vehicle Inspection System. See the attached drawings.

2) 场地条件和扫描大厅满足“同方威视MB1215DE (BX) 型集装箱/车辆检查系统”运行的空间、环境条件、动力供电等要求。

2.2 The site and the scanning hall shall meet the requirements in space, environment and power supply and so forth for the run of the NUCTECH MB1215DE (BX) Container/Vehicle Inspection System.

3) 设备工艺流程满足客户查验作业流程的使用要求。

2.3 Equipment process shall meet the requirements for inspection with the customer.

## 三、建筑与设备接口要求:

## 3. Construction and equipment interface requirements

## 1) 扫描通道

## 3.1 Scanning channel

1) 扫描设备的运行防护区域的边界尺寸为: 纵向长57.23m, 横向宽21m。

3.1 Boundary dimensions of the running and protecting areas of the scanning equipment are 57.23m in vertical direction and 21m in horizontal direction.

## 2) 控制室

## 3.2 control room

控制室利用原有控制室。控制室按计算房的环境要求和规范进行设计，须根据当地条件安装空调和换气排风等设施，满足人员正常操作。

Equipment room and control room use the original equipment room and control room. In the drawings, Control room shall be designed according to the computer environment requirements and specifications with the conditioner and ventilator plus air exhaust equipment so forth meeting the local conditions, in order to meet the requirements for operations by the staff.

## 3)设备环境要求:

## 3.3 Equipment environment requirements

设备环境温度: 工作时-25℃≤t≤45℃, 静止时-30℃≤t≤55℃。湿度: φ≤99%。

Environment temperature of equipment: Working temperature range is -25℃ to 45℃; Resting temperature range is -30℃ to 55℃.

Relative humidity ≤99%。

## 四、建筑设计要求

1) 威视股份公司提供的扫描通道长度和防护端的结构尺寸，满足相关辐射防护安全标准。被扫描物体尺寸: 25.25m (长) x2.7m (宽) x4.7m (高)。

4.1 The scanning channel length and shielding wall structural sizes provided by NUCTECH meet relevant radiation safety standards.The scanned object is 25.25m (length) x2.7m (width) x4.7m (height). Close the roof after the scanning device is installed.

2)标高: 威视股份公司提供的所有图纸的标高均以原有建筑±0.00进行设计，实际建筑标高与此不一致时，由建筑设计院根据实际情况进行调整，但必须保证该方图纸中所有设备安装面之间的相对标高是准确的。

4.2 Elevation: All of drawing elevations provided by NUCTECH is based on the original building being ±0.00. In case of actual building elevations inconsistent with this, the architectural design institute will do adjustments according to the actual conditions, but it shall ensure that the relative elevation between the installation planes of all equipment in our drawings is accurate.

3)扫描大厅: 扫描大厅在原大厅基础上向出口方向延长9m。

4.3 Scanning Hall: Scanning Hall extends 9m towards the exit on the basis of the original hall.

4) 地基: 扫描通道、设备轨道安装区域保证受力和安装要求。

4.4 Foundation: The scanning channel ,Trail installation area to ensure force and installation requirements.

5)地面: 扫描通道按频繁通过和停放总重70t的工况考虑。

4.5 Floor: The scanning channel floor and exit / entrance slope shall be designed according to the working condition presuming that a heavy container truck (total weight of 70t) frequently passes and parks.

## 五、设备运行轨道的安装和使用要求:

## 5.Installation and requirements for use of equipment running tracks:

1) 单轨中心偏差±2mm, 全长高度差小于0.4%。

5.1 Centre deviation of a single track is ±2mm and differential value of height of the whole length is less than 0.4%.

2)任意4米长度内二根钢轨的轨道顶面高度差小于2mm。

5.2 Differential value of height of top surface of tracks of any three steel tracks which are≤4m long shall be <2mm.

3) 轨距为2000的两条钢轨中心距偏差±2mm。

5.3 Centre deviation of two tracks whose distance is 2000 shall be ±2mm.

4) 轨距为6250的两条钢轨中心距偏差±3mm。

5.4 Centre deviation of two tracks whose distance is 6250 shall be ±3mm.

5) 轨道两端设车档，设备运行撞击速度0.4m/s。

5.5 Car bumps are installed on both sides of tracks. Bump speed of equipment running is 0.4m/s.

## 六、配电、照明、通讯:

## 6.Power distribution, illumination and communication

1) 系统设备供电: 采用三相五线制的TN-S系统，总用电量60kW。电压: 380V, 频率: 50±1Hz。MB1215DE (BX) 设备 (扫描车) 用电与其它设备的电源应分开供电。由场地配电箱空分二路供电: 一路4.0kW供至设备配电柜，作为 MB1215DE (BX) 系统扫描主体设备的供电; 二路15kW供至系统控制室，用作控制室内计算机、监控设备等的供电，其他环境供电功率另行计算。

6.1 Power supply for system equipment: TN-S system of three phase and five wires. The total power consumption is 60kW. The voltage is 380V. frequency is 50±1Hz. Power source of MB1215DE (BX) equipment (scanner) shall be separated from that of other equipment. Power is supplied in two directions from the main power distributionroom: 40kW is supplied to power distribution cabin for equipmet ; 15kW is supplied to control room for indoor computers and supervision equipment. Power supply rate for other places is calculated separately.

2) 照明、通风等设备的供电由设计人员考虑。(除系统设备之专用电缆外，所有预埋钢管、电缆由施工单位施工)。

6.2 illumination, ventilation shall be considered by the designer. I except

cables for connecting system equipment, all pre-embedded steel pipes and cables are constructed by the construction unit.

3) 设备维修电源柜，单相245V、16A，三相4.20V、25A,设备维修时使用，不考虑总容量。由设计单位设计，施工单位安装。

6.3 Maintenance power source cabin, single phase 245V, 16A, three phase 420V, 25A for use of equipment maintenance.

4) 室内计算机设备和监控设备等由建筑配电直接供给，由设计单位依据系统控制室内的设备布置图内的电源插座布置图部分进行设计，由施工单位进行布线 and 安装所有墙面、地面电源插座，房间内电源插座数量不得少于图纸所示数量。

6.4 Power for indoor computer equipment and supervision equipment is supplied through building power distribution and dedigned by the design unit according to layout drawing of power sockets in the equipment layout drawing of system control room. It shall be wired by the construction unit who also shall install all power sockets in the walls and on the ground. The quantity of power sockets in the room shall not be less than that in the drawing.

5) 照明要求: 扫描区域不低于150LUX，系统控制室不低于300LUX。

6.5 Illumination requirements: it shall not be less than 150LUX and in the system control room it shall not be less than 300LUX.

6) 网络布线: 由设计单位根据图纸内布线要求进行设计，由施工单位进行布线和网络信息点的安装。线缆采用超五类屏蔽双绞线。

6.6 Network wiring: It shall be designed by the design unit according to wiring requirements in the drawing. Then wiring shall be done by the construction unit who shall also install network points of information. LSZH shall be used as cables.

7) 设备预埋件、电缆桥架等由施工单位施工，位置详见图纸。

6.7 Embedded parts of equipment and cable bridging shall be done by the construction unit. See drawing for their positions.

## 七、控制室的配电要求

## 7. Requirements of power distribution in control room.

1)控制室利用原有带地控制室，控制室内的电源插座至插座的走线路径由设计院负责设计，土建公司负责施工。

7.1 The control room uses the original site control room.The wiring route from the power cabinet in the control room, check-in room and check-out rom to the floor socket and wall socket is designed by the design institute, and constructed by the construction company.

2)每台计算机附近应设置不少于两个2+3孔 10A电源插座。电源插座至配电器的布线走静电地板下桥架，由土建承包商施工完成，设计单位根据插座的选择合适的电缆。

7.2 At least two 10A power sockets (2+3 holes) in floor shall be set near to each computer. The line from this kind of socket to the power distribution cabinet runs along the cable tray under the anti-electrostatic floor, which is constructed by the construction company. The design unit is responsible for the choice of the cable according to the capacity of the floor socket.

## 八、CCTV、PA、电话布线的要求

## 8.CCTV, PA, and telephone wiring requirements

1) CCTV、PA具体安装位置根据现场情况确定。

8.1 The installation site for CCTV and PA is determined according to the site conditions.

2) 所有布线由设计单位设计。

8.2 All of wiring is designed by the design unit.

## 九、接地要求

## 9. Earthing requirements

1) 建筑防雷接地做等电位接地系统，接地电阻不大于1Ω，每个设备旁边布置接地端点。

9.1 In the earthing (as equipotential earthing system) of the building, the earthing resistance is not greater than 1Ω. The earthed endpoint shall be set near to each device.

2) 在控制室、扫描通道内的适当位置布置接地端点，并与等电位接地系统连接。预埋板、预埋钢管两端、金属电缆桥架 (槽)、静电地板支架应连接至接地系统。

9.2 The earthed endpoint is set at adequate site in the control room, and scanning channel, and is linked to the equipotential earthing system. The earthing system shall be linked to the pre-embedded board of the accelerator room and the detector, both ends of the pre-embedded steel tube, the metal cable tray, and the bracket of the anti-electrostatic floor.

3) 土建承包商应根据规范要求 and 图纸要求完成所有接地的施工工作，并且出具测试报告。

9.3 The construction contractor shall complete all of earthing construction tasks according to the regulatory and drawing requirements, and issue a test report.

4) 建筑防雷按相关规范进行设计，必需具备防雷或漏保护，土建承包商应根据当地相关规范进行施工。

9.4 The lightning protection system of the building shall be designed according to the relevant standard, and shall be with the lightning or surge protection. The construction contractor shall do the construction according to the local relevant regulations.

## 十、照明要求

## 10. Lighting requirements

1) 根据设备需要改造照明系统，用电供电容量和布线由建筑设计单位设计。

10.1 According to the need to transform the lighting system, electricity supply capacity and wiring design by the building design unit.The power of the equipment lighting shall be from the power distribution room; the power capacity and wiring are designed by the architectural design unit.

2)控制室为计算机房，不低于300 lux。

10.2 The lighting power of the control room shall be from the computer room; and illumination shall be not less than 300 lux.

3)通道其余位置不低于150lux。

10.3 Other sites of the channel: illumination shall be not less than 150 lux.

4)照明线路、配电、设施由设计单位设计，土建施工单位负责采购、安装、接线。

10.4 Lighting circuit, power distribution and facilities are designed by the design unit. The construction unit is responsible for the purchase, installation, and wiring.

## 十一、防火

## 11. Fire prevention

1) 扫描大厅内配置适用于电器设备的手提灭火器。

11.1 The portable fire extinguisher is configured in the scanning hall , which is suitable for the electrical equipment.

2) 控制室配置适用于电器设备的灭火器，其他办公室，按设计规范设计考虑配置。

11.2 The fire extinguisher is configured in the control room, which is suitable for the electrical equipment. In the other rooms for the official purpose, the relevant configuration is made according to the design standard.

## 十二、给排水

## 12. Water supply and drainage

1)扫描大厅不需要设计供水系统，室外的给排水系统，按照当地总体规划进行设计。

12.1 In the scanning hall the water supply is not required. The outdoor water supply and drainage system shall be designed according to the overall plan of the site.

## 十三、其他:

## 13. Others

1)扫描大厅内利用原有桥架及预埋管，新增部分桥架，室外新增预埋管。

13.1 The original cable trays and embedded pipes are used in the scanning hall, Make some new cable trays and additional embedded pipes are installed outside

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