第八章 货物需求一览表及技术规格

SECTION 8 Schedule of Requirements and Technical Specifications

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| --- | --- | --- | --- |
|  | 1 | No:  编号： | Comment |
| \* | 2 | Equipment Description: Calibration equipment  设备描述：标校设备 |  |
|  | 3 | Quantity: 1 set  数量：1台 |  |
|  | 4 | Time of delivery: Seller must deliver the equipment within 3 months after buyer placing a purchase order. Application of Export License shouldn’t affect delivery.  交货日期：卖方在买方发出订单后3个月内交货。出口许可证的办理不得影响交货期。 |  |
| \* | 5 | **Application and General Requirement:**  This system is mainly used for the calibration process of MEMS pressure sensors.  This system is required to be reasonable in design, with advanced technology to ensure the system an excellent kinetic performance. The action elements selected for the control system shall be of high accuracy, good reliability and rapid response. The machine shall be convenient for use, operation and maintenance, be artistic in configuration, compact in structure, stable in performance and satisfactory in after-sale service.  **设备用途及基本要求：**  本设备主要应用于MEMS压力传感器标校工序。  要求该设备结构设计合理，采用先进成熟技术，保证系统具有良好的动态品质，在操作过程中操作者的视线要好。所选控制系统执行元件精度高，可靠性好，响应速度快。设备使用､操作、维修方便。造型美观，结构紧凑，整机运行稳定可靠，售后服务优良｡ |  |
|  | 6 | **Main components of the equipment:**  **设备主要组件：** |  |
|  | 6.1 | Pressure control system: providing stable and precise pressure environment stimulation for products  控压系统：为产品提供稳定且精确的压力环境激励 |  |
|  | Temperature control system: providing stable and precise temperature environment excitation for products  控温系统：为产品提供稳定且精确的温度环境激励 |  |
|  | Calibration testing system (Automatic Test Equipment ，ATE): a unit for signal interaction with products  标校测试系统（测试机）：与产品进行信号交互的单元 |  |
|  | Loading system: Place the sample on the Ring into the device chamber  上料系统：将Ring环上的样品放置设备腔体中 |  |
|  | Output system：Strip the tested samples into strips  下料系统：将测试完毕的样品进行编带 |  |
|  | Software system：Various software required for device operation  软件系统：设备运行所需的各类软件 |  |
|  | 7 | **Basic functions of equipment**  **设备基本功能** |  |
|  | 7.1 | Alarm function: The software can automatically control the normal interaction and operation of all hardware systems. When an abnormality occurs, the device will stop running and give an alarm.  报警功能：软件可实现自动控制所有硬件系统正常交互运行，发生异常时设备停止运行并报警。 |  |
| \* | 7.2 | Timing function: The device supports counting the normal operation, debugging, alarm, and fault duration. When the user actively switches the device's working mode (such as switching from normal operation to debugging), the duration statistics automatically switch; When the device malfunctions or alarms, the duration statistics automatically switch to counting the duration of the malfunction or alarm.  计时功能：设备支持统计正常运行、调试、报警和故障时长。当用户主动切换设备工作模式（例如：正常运行切换至调试），时长统计自动切换；当设备发生故障或报警时，时长统计自动切换为统计故障或报警时长。 |  |
|  | 7.3 | Counting function: The equipment loading system, calibration testing system, and unloading system should respectively count the number of samples; The statistical quantity of the three stages should be accurate and the difference between them should be counted as loss, and the loss quantity should be less than one hundred thousandth.  Loss: Samples that cannot be found are counted as losses.  计数功能：设备上料系统、标校测试系统和下料系统应分别对样品数量进行统计；3个阶段统计数量应准确且之间的差异计为损耗，损耗数量应小于十万分之一。  损耗：无法找到的样品计为损耗。 |  |
| \* | 7.4 | Sample posture adjustment function: When the sample is placed in the Socket, if there is an abnormal posture of the sample, the device should automatically recognize it through the visual lens and adjust it automatically; If the adjustment fails, the sample will be automatically taken out and recorded as a throwing sample; If it cannot be automatically removed, the device should sound an alarm and increase manual intervention.  样品姿态调整功能：样品摆放至Socket中时，如果样品出现摆放姿态异常，设备应通过视觉镜头自动识别后，自动调整；若调整失败，自动将样品取出，记为抛料样品；若无法自动取出，设备应报警提升人工干预。 |  |
|  | 7.4.1 | Probability of material throwing: The probability of material throwing should be ≤ 1/2000  抛料概率：抛料概率应≤1/2000 |  |
| \* | 7.5 | Data statistics: The software UI interface displays statistics on the quantity of various BIN products  数据统计：软件UI界面展示统计各类分BIN产品数量 |  |
| \* | 7.6 | EQC sample selection function: The calibration equipment randomly selects a fixed proportion of materials from those that have passed the performance test as EQC materials, and places them in a fixed tray.  EQC样品挑选功能：标校设备从性能测试OK的物料中随机挑选固定的比例作为EQC的物料，并且摆放在固定的料盘中。 |  |
|  | 8 | **Requirements, main specifications and parameters of the Equipment:**  **设备技术要求及主要规格参数：** |  |
|  | 8.1 | International unit standards (SI) should be adopted for the denominations of all elements, parts and various instruments of this equipment.  设备所有零部件和各种仪表的计量单位应全部采用国际单位（SI）标准。 |  |
| \* | 8.2 | Pressure sensor product dimensions：2.5×2.0×0.95mm；  Note: Please refer to the attached drawings for specific product dimensions, tolerances, and pin definitions  压力传感器产品尺寸2.5×2.0×0.95mm；  注：具体产品尺寸、公差及引脚定义图纸见附件 |  |
| \* | 8.3 | **Equipment process capability**  **设备工艺能力** |  |
| \* | 8.3.1 | Equipment efficiency: Max UPH ≥ 1800 (excluding EQC testing); Max UPH ≥ 1150 (including EQC testing)  设备效率：Max UPH ≥1800（不包含EQC测试）；Max UPH ≥1150（包含EQC测试） |  |
| \* | 8.3.2 | Equipment efficiency: Average UPH ≥ 1650 (excluding EQC testing); Average UPH ≥ 1050 (including EQC testing)  Average UPH calculation method: Count the number of products put into production (count continuous production for 300 hours), and calculate the average UPH based on the equipment operating time (including alarms, manual intervention, downtime, or failure time during production)  设备效率：平均 UPH ≥1650（不包含EQC测试）；平均 UPH ≥1050（包含EQC测试）  平均UPH计算方式：统计产品投产数量（统计连续生产300h），根据设备运行时间(包含生产运行时发生的报警、人工干预、宕机或故障时间)计算平均UPH |  |
| \* | 8.3.3 | One calibration test yield: ≥ 98.5%  Note: Defects in the product itself are not included in the calculation  一次标校测试良率：≥98.5%  注：产品本身不良不计算在内 |  |
| \* | 8.3.4 | Total yield after secondary calibration test: ≥ 99.5%  Note: Defects in the product itself are not included in the calculation  二次标校测试后总良率：≥99.5% 注：产品本身不良不计算在内 |  |
|  | 8.4 | **Input system**  **上料系统** |  |
| \* | 8.4.1 | The device supports automatic blue film feeding: automatically placing the sample on the blue film ring into the device cavity; The layout diagram of the blue film sample is attached  设备支持自动蓝膜上料：自动将蓝膜Ring环上的样品放置设备腔体中；蓝膜样品布局图见附件 |  |
|  | 8.4.2 | The device supports a maximum loading area of at least 150 \* 120mm for 8-inch Ring rings; The maximum material range can be expanded to 8-inch expansion ring, and any rectangle can be cut inside  Note: Samples in the loading area can complete the material retrieval process  设备支持8寸Ring环最大上料区域至少支持：≥150\*120mm；最大取料范围可扩展至8寸扩膜环任意内切矩形  注：上料区域内的样品可完成取料动作 |  |
|  | 8.4.3 | Offline mode: The offline operation of the feeding system should not affect the operation of subsequent equipment units  离线模式：上料系统离线操作时应不影响后续设备单元的运行 |  |
|  | 8.4.4 | Feeding system efficiency: average UPH ≥ 6000  UPH of feeding system: offline mode verification of UPH of feeding system  上料系统效率：平均 UPH ≥6000  上料系统UPH：离线模式验证上料系统UPH |  |
|  | 8.4.5 | Loading system Jam Rate ≤ 1/2000  Jam Rate calculation method: The number of manual interventions (including those caused by faults and alarms) divided by the number of products put into production (statistical continuous production for 300 hours)  上料系统Jam Rate≤1/2000  Jam Rate计算方法：人工干预次数（故障和报警引起的次数均计算在内）除以产品投产数量（统计连续生产300h） |  |
|  | 8.4.6 | Reliability of feeding system: MTBR ≤ 20min; MTBF＞200h  MTBR: Average time to recovery from failures, equal to the duration of failures divided by the number of failures  MTBF: Mean Time Between Failures, equal to the number of times a fault occurs during a fault free operation.  Note: Malfunction refers to the phenomenon of equipment decreasing or losing certain specified functions (which cannot be restored through daily maintenance, upkeep, or SOP files).  上料系统可靠性： MTBR≤20min；MTBF＞200h  MTBR：平均故障恢复时长，等于故障时长除以故障次数  MTBF：平均故障间隔时长，等于无故障运行时长处于故障次数  注：故障指的是设备降低或失去某些规定功能（无法通过日常的保养、维护或SOP文件恢复）的现象 |  |
|  | 8.5 | Output **system**  **下料系统** |  |
| \* | 8.5.1 | Automatic tape feeding system: Automatically tape the samples that have passed the test.  自动载带下料系统：将测试OK的样品自动编带。 |  |
|  | 8.5.2 | The cutting system can operate independently and has a certain level of compatibility (supporting at least two tape widths of 12mm and 16mm), and can support other types of product tape. Please refer to the attachment for the compiled drawings.  下料系统可独立运行，具备一定的兼容性（至少支持12mm和16mm两种编带宽度），可支持其它型号产品编带。编带图纸见附件。 |  |
|  | 8.5.3 | The tape packaging has CCD detection for product flipping and direction detection functions  编带包装有CCD检测产品翻料及方向检测功能 |  |
|  | 8.5.4 | AOI inspection: can identify defects such as dirt, scratches, etc. on the surface of the sample  AOI 检查：可识别样品表面脏污、划伤等缺陷 |  |
| \* | 8.5.5 | Sample automatic classification and screening system: Test NG samples are automatically classified and placed according to their BIN; Please refer to the attachment for the BIN requirements  样品自动分类筛选系统：测试NG的样品按照分BIN自动分类摆放；分BIN要求见附件 |  |
|  |  | Offline mode: The offline operation of the feeding system should not affect the operation of other equipment units  离线模式：下料系统离线操作时应不影响其它设备单元的运行 |  |
|  |  | Efficiency of the cutting system: average UPH ≥ 6000  Unloading System UPH: Offline Mode Verification of Loading System UPH  下料系统效率：平均 UPH ≥6000  下料系统UPH：离线模式验证上料系统UPH |  |
|  |  | Jam Rate of the cutting system ≤ 1/2000  下料系统Jam Rate≤1/2000 |  |
|  |  | Reliability of the feeding system: MTBR ≤ 20min; MTBF＞200h  MTBR: Average time to recovery from failures, equal to the duration of failures divided by the number of failures  MTBF: Mean Time Between Failures, equal to the number of times a fault occurs during a fault free operation  下料系统可靠性： MTBR≤20min；MTBF＞200h  MTBR：平均故障恢复时长，等于故障时长除以故障次数  MTBF：平均故障间隔时长，等于无故障运行时长处于故障次数 |  |
|  | 8.6 | **Temperature and pressure control system**  **控温、控压系统** |  |
| \* | 8.6.1 | Pressure controller: choose international first-class brand Drucker Pace 5000 or Pace 6000; The range is 200kPa absolute pressure; The accuracy specification should be or better than 0.005% Rdg+0.005% FS  压力控制器：选用国际一流品牌德鲁克Pace5000或Pace 6000；量程为绝压200kPa；精度规格应为或优于0.005%Rdg+0.005%FS |  |
| \* | 8.6.2 | Pressure indicator: selected from the international first-class brand Drucker Pace1000; The accuracy specification should be or better than 0.0025% FS  压力指示器：选用国际一流品牌德鲁克Pace1000；精度规格应为或优于0.0025%FS |  |
|  | 8.6.3 | Pressure controller pressure control range: 0~200kPa  压力控制器压力控压范围： 0~200kPa |  |
| \* | 8.6.4 | Pressure accuracy: The difference between the pressure setting value and the pressure indicator reading can be set;  The difference between the readings of the pressure controller and the pressure indicator can be set.  Note: The actual difference mentioned above should be evaluated for equipment UPH within the set range (15Pa)  压力精度：压力设定值与压力指示器示数差值可设定；  压力控制器与压力指示器示数差值可设定。  注：上述实际差值应在设定范围内时（15Pa）进行设备UPH评估 |  |
| \* | 8.6.5 | Stability of chamber pressure: Within the last 3 seconds of the data collected during calibration, the fluctuation of the pressure indicator time (Max Min within 3 seconds) is ≤ 5Pa;  腔体压力稳定性：标定时采集的数据时间点的近3s内，压力指示器时数波动（3s内，Max-Min）≤5Pa； |  |
|  | 8.6.6 | Chamber temperature range： 0℃~80℃  腔体温度范围： 0℃~80℃ |  |
| \* | 8.6.7 | Chamber airtightness: Within any temperature and pressure range, the chamber leakage rate is ≤ 5Pa/s.  Leakage rate test: After completing pressure control using Pace 5000, switch to measurement mode and collect the data change of Pace 1000 within 60 seconds. The leakage rate is the pressure change/time of Pace 1000  腔体气密性：任意温度、压力范围内，腔体泄漏率≤5Pa/s。  泄漏率测试：使用Pace 5000完成控压后，切换为测量模式，采集60s内的Pace 1000的数据变化量，泄漏率为Pace1000压力变化量/时间 |  |
| \* | 8.6.8 | Temperature stability: After the temperature stabilizes, collect calibration data.  The criteria for determining temperature stability are: ① The reference temperature sensor Tref is within ± 1 ℃ of the temperature set value Tset;  ② Reference temperature sensor Tref, Max Min ≤ 1 ℃;  ③ Each reference temperature sensor fluctuates (within 10 seconds, Max Min) ≤ 0.1 ℃;  Note: During calibration, there should be at least one high-precision temperature sensor around every 4 products as a reference temperature sensor Terf  温度稳定性：温度稳定后，进行标定数据的采集。  温度稳定的判断条件为：①参考温度传感器Tref在温度设定值Tset的±1℃范围内；  ②参考温度传感器Tref，Max-Min≤1℃；  ③每个参考温度传感器波动（10s内 ，Max-Min）≤0.1℃；  注：标定时每4颗产品周围至少有一颗高精度温度传感器作为参考温度传感器Terf |  |
| \* | 8.6.9 | Temperature accuracy: ≤± 0.5 ℃ within the range of 15~60 ℃; Other temperature range ± 1 ℃  Note: Select a standard sample (Golden Sample) that matches the output of the reference temperature sensor through a more stable temperature environment (such as a temperature chamber that has been insulated for a long time); Place the standard sample into the device, and when the temperature inside the chamber reaches the above stable temperature conditions, the difference between the output of the standard sample and its reference temperature sensor is the temperature accuracy.  温度精度：15~60℃范围内≤±0.5℃；其它温度范围±1℃  注：通过更加稳定的温度环境（例如经过长时间保温的温箱），选取和参考温度传感器输出一致的标准样品（Golden Sample）；将标准样品与放入设备中，当腔体内部温度达到上述温度稳定条件后，标准样品与其参考温度传感器输出差值为温度精度。 |  |
|  | 8.7 | Temperature and pressure monitoring specifications  **温度、压力监控规格** |  |
|  | 8.7.2 | Temperature monitoring method: For every 4 products inside the cavity, at least 1 TMP117 or other temperature sensor with the same level of accuracy is used for temperature monitoring, and the readings of each temperature sensor are collected in real time  Note: The temperature sensor has been calibrated and the data is traceable. A traceability report is required.  温度监控方式：腔体内部每4颗产品至少使用1颗TMP117或其它相同精度水平的温度传感器进行温度监控，实时采集每颗温度传感器示数  注：温度传感器已校准，数据可溯源，需提供溯源报告。 |  |
|  | 8.7.3 | Pressure monitoring method: Real time collection of pressure controller readings  压力监控方式：实时采集压力控制器和压力指示器示数 |  |
|  | 8.7.4 | Monitoring data can be stored separately and saved to a computer (see attachment - Temperature and Pressure Monitoring Template for data templates);  监控数据可单独储存并保存至电脑（数据模板见附件-温度、压力监控模板）； |  |
|  | 8.7.5 | Whether to save data can be customized by the user. Users can customize the starting and ending time points for saving monitoring data.  数据是否保存可由用户自定义。用户可自定义监控数据保存的起始时间点和结束时间点。 |  |
|  | 8.7.6 | Monitoring data display: The upper computer can display the temperature and pressure change curves during the calibration test period of the entire mold cavity sample; The software supports curve time dragging and local zooming.  监控数据展示：上位机可展示完成1整模腔体样品校准测试时间段内的温度压力变化曲线；软件支持曲线时间拖动和局部放大。 |  |
|  | 8.7.7 | Real time pressure collection and calibration: Users can customize whether to use the real-time collected Pace 5000 readings for calibration.  压力实时采集、标定：用户可将实时采集的Pace 1000数据用于标定。 |  |
|  | 8.8 | Yield monitoring  良率监控 |  |
| \* |  | ① Overall yield monitoring:  The overall yield of the equipment is lower than the set value, and the equipment stops and alarms  ② Single site yield monitoring:  If the yield of a single site is lower than the set value, an alarm or automatic disable will be triggered  ③ Continuous NG monitoring for a single site:  When a site continuously experiences NG greater than the set value, it will sound an alarm or be automatically disabled  ①总体良率监控：  设备整体良率低于设定值，设备停止并报警  ②单个site良率监控：  单个site的良率低于设定值，报警或自动禁用  ③单个site连续NG监控：  当一个site连续出现NG大于设定值，报警或自动禁用 |  |
|  | 8.8 | Software **System**  **软件系统** |  |
|  | 8.8.1 | Operating system：Genuine Win system  操作系统：正版Window系统  • Mouse  鼠标  • Keyboard  键盘 |  |
|  | 8.8.2 | Language：Chinese or English  语言：中文或英文 |  |
|  | 8.8.3 | Backups：Provides backup hard disks and software  备份：提供备份硬盘及软件 |  |
|  | 8.8.4 | Output data format: CSV or XLS  输出数据格式：CSV或XLS |  |
|  | 8.8.5 | Control Software upgrade must be charged free during warranty  控制软件升级必须在保修期内免费 |  |
| \* | 8.8.6 | Necessary technical support: when the calibration process and testing plan change, or when our company changes the ASIC chip of the product; At least 2 software change services should be provided free of charge.  必要的技术支持：当校准流程和测试方案改变、或当我司变更产品ASIC芯片时；应免费提供至少2次软件变更服务。 |  |
|  | 8.8.7 | Necessary technical support: When our company needs to change software and hardware to support new ASIC chip products, we should ensure that the open software and hardware change permissions and the provided information can meet our development needs.  必要的技术支持：当校准流程和测试方案改变、或当我司变更产品ASIC芯片时，应保证开放的软硬件更改权限和提供的资料可满足我司开发需求。包括但不仅限于（PLC控制软件、测试板卡和上下位机程序等） |  |
|  | 8.8.8 | Necessary support such as optimal efficiency debugging while maintaining yield  提供保持良率下最优效率的调试等必要的支持 |  |
|  | 8.9 | **Specification of calibration testing system (ATE)**  **标校测试系统（测试机）规格** |  |
| \* | 8.9.1 | **Open source testing program, supporting users in program development**  测试程序开源，支持用户进行程序开发 |  |
|  | 8.9.2 | Power supply/testing voltage range and accuracy: 0~ 5V@1A ±（0.05%+1mV）  供电/测试电压范围及精度：0~5V@1A±（0.05%+1mV） |  |
|  | 8.9.3 | Power supply/testing current range and accuracy: 0~1A @ 5V ± (0.05%+3mV)  供电/测试电流范围及精度：0~1A @5V±（0.05%+3mV） |  |
|  | 8.9.4 | Digital channel communication speed: Supports I2C communication with a maximum speed of 1M  数字通道通道通讯速率：支持I2C通讯最大速率为1M |  |
| \* | 8.9.5 | Compatibility: The test board should be a universal board that can support the vast majority of chips (I2C communication with a communication rate of less than 1M within the above power supply voltage/range)  兼容性：测试板卡应为通用板卡，可支持（在上述供电电压/电范围内，通讯速率在1M以内的I2C通讯）的绝大多数芯片 |  |
|  | 8.9.6 | Temperature drift calculation function: It can collect the output of the product at different temperatures and the same pressure for TCO calculation; And determine whether the sample is OK based on the calculation results.  温漂计算功能：可采集产品不同温度下相同压力下的输出，进行TCO计算；并根据计算结果判断样品是否OK。 |  |
|  | 8.10 | **Equipment reliability**  **设备可靠性** |  |
|  | 8.10.1 | UPTIME≥95%  UPTIM=(1- (Fault or alarm/downtime+PM time)/total time)  PM: including equipment maintenance, upkeep, and commissioning during startup and operation. The supplier shall provide the above-mentioned PM time to ensure the normal operation of the equipment.  UPTIME≥95%  UPTIM=（1-（故障或报警/宕机时间+PM时间）/总时间）  PM：包括设备保养、维护和开机运行的调试等。供应商需提供确保设备可正常运行的上述PM时间。 |  |
| \* | 8.10.2 | The average time between failures of the equipment is greater than 200 hours; The average alarm interval duration of the equipment is greater than 1.5 hours;  设备平均无故障运行时间＞200小时；设备平均报警间隔时长＞1.5小时； |  |
| \* | 8.10.3 | The average time for equipment failure recovery is less than 4 hours; The average alarm processing time of the equipment is less than 1.5 minutes;  设备平均故障恢复时间＜4小时；设备平均报警处理时长＜1.5min； |  |
| \* | 8.10.4 | Jam Rate of calibration testing unit ≤ 1/5000  Note: Jam Rate calculation method: The number of manual interventions (including those caused by faults and alarms) divided by the number of products put into production (for continuous production of 300 hours)  标校测试单元的Jam Rate≤1/5000  注：Jam Rate计算方法：人工干预次数（故障和报警引起的次数均计算在内）除以产品投产数量（统计连续生产300h） |  |
|  | 8.11 | **Other specifications**  **其它规格** |  |
|  | 8.11.1 | Chamber sample posture detection: The device has visual recognition function. When the sample inside the cavity is not correctly placed in the sample acupoint, the visual inspection of the device should recognize and alarm.  腔体样品姿态检测：设备具有视觉识别功能。当腔体内部样品未正确摆放至样品穴位中时，设备视觉检测应识别并报警。 |  |
|  | 8.11.2 | Set-Up Period: Process Test should be start within ninety (20) days after the effective date of moving into Beijing BOE.  安装调试时间：设备移入北京京东方生效日15天内，需开始进行工艺测试，总计30天后设备达到生产要求 |  |
|  | 8.11.3 | All parts,labor fee,engineer dispatch fee are free of charge during warranty period  保修期内所有零件、人工费、工程师派遣费均免费 |  |
|  | 8.12 | **Log Data**  **日志数据** |  |
|  | 8.12.1 | Log Data for Actual Process Data saved period：≥7 days (user-defined)  实际工艺日志数据保存周期：≥7天（用户自定义） |  |
|  | 8.12.2 | It is possible of back-up from Machine to USB  可以从设备备份到USB |  |
|  | 8.12.3 | Log data format: CSV or XLS  日志数据格式：CSV或XLS |  |
|  | 8.13 | **Interlock**  **联锁** |  |
|  | 8.13.1 | Interlock Point Setting & Marking  联锁点设置&标记 |  |
|  | 8.13.2 | Interlock for Equipment(Interface & Operation Miss) & Human Protection  设备联锁（界面和操作失误）&人员保护 |  |
|  | 8.13.3 | Warning Point Setting & Marking  警告点设置&标记 |  |
|  | 8.13.4 | Interlock for safety : Alarm buzzer & emergency stop switch  安全联锁:蜂鸣报警器&紧急停止开关 |  |
|  | **8.15** | **ETC**  **其他** |  |
|  | **8.15.1** | **Crane Scope**  **起重范围** |  |
|  | 8.15.1.1 | Max loading weight of complete PECVD equipment (in BOE Sensor lab) : < 1.5 ton/m2  在京东方传感实验室中整机最大装载重量小于1.5吨每平方米 |  |
|  | 8.15.1.2 | Max height/width from crane hook to ground (BOE Sensor lab): < 2 m/ 3m  起吊到京东方传感实验室的最大部件尺寸小于3米长、2米宽、3m高 |  |
|  | **8.15.2** | **Cover**  **外壳** |  |
|  | 8.15.2.1 | Install safety cover at utility pipe  Cover should be fixed, and can’t contact with EQ  在管道处安装安全罩  外壳应固定，不与设备连接 |  |
|  | 8.15.2.2 | All meter and gauge need to install the cover  If the Regulator placed inside the cover, the cover must be opening or stay door to facilitate operate  所有仪表和量具应安装外壳  如果调节阀安装在外壳内，外壳应开启或保持在门上以便于操作 |  |
|  | 8.15.3 | Accessories, elements and spare parts of this machine.  设备附件及零备件: |  |
|  | 8.15.3.1 | Submit the content list of the following items with their unit prices quoted separately which shall be added as part of the total bid price. The list should be confirmed by vendor and BOE SENSOR engineer during specification meeting.  列出下列各项清单，单独报价，并计入投标总价: |  |
|  | 8.15.3.2 | Spare part list (consumable & non-consumable) should be recommended by vendor and selected by BOE Sensor engineer after discussion mutually  备件清单（消耗品和非消耗品）应由供应商推荐，经与京东方传感工程师协商后选择 |  |
|  | 8.15.3.3 | Standard configuration and standard attachment accessories. The list should be confirmed by vendor and BOE SENSOR engineer during specification meeting.  提供设备标准配置和随机标准附件。 |  |
|  | 8.15.3.4 | Necessary spare parts and consumable parts during warranty period.  提供设备免费保修期内必需的备品备件和易损件。 |  |
|  | 8.15.3.5 | One complete set of special maintenance and operation tools.  The list should be confirmed by vendor and BOE SENSOR engineer during specification meeting.  提供一套完整的维修和操作的专用工具。 |  |
|  | 8.15.3.6 | Special Tools:1set/MACHINE (details need to be discussed with BOE SENSOR engineer)  特殊工具：一套/设备(细节需要与京东方传感工程师讨论) |  |
|  | 8.15.3.7 | The bidder shall provide the complete set of equipment catalog，technical specification， specification of Initial Acceptance Test (IAT at the Seller’s site) and Final Acceptance Test (FAT at the Buyer’s site) in the bid.  投标文件中应提供投标设备的整套产品样本，技术规格书，预验收（IAT卖方工厂）和终验收（FAT买方工厂）规格书等。 |  |
|  | 8.15.4 | Necessary optional parts shall be recommended.  **应推荐必要的设备选项。** |  |
|  | 8.15.4.1 | Submit the content list of the following items with their unit prices quoted separately which shall not be added as part of the total bid price.  列出下列各项清单，单独报价，不计入投标总价: |  |
|  | 8.15.4.2 | Provide optional functions and parts.  The list should be confirmed by vendor and BOE SENSOR engineer during specification meeting.  提供备选的功能及选件。 |  |
|  | 8.15.4.3 | Necessary spare parts adequate for 1 year’s operation after warranty period.  The list should be confirmed by vendor and BOE SENSOR engineer during specification meeting.  The price list should be separated to the spare part for warranty.  免费保修期后设备运行一年所需的备品备件 |  |
|  | 8.15.5 | Necessary technical data and shall be provided:  **提供必要的技术资料:** |  |
|  | 8.15.5.1 | Machine’s operating manual, maintenance manual, parts and components list, components picture，foundation drawings, general drawings, parts assembling drawings, electric and pneumatic schematic drawings and machine lubricating system drawings, electric connection drawings, computer program software and other necessary technical documents, spare parts documents, a result data file after initial acceptance test and final acceptance test.  设备操作使用手册、维修手册、零部件清单、照片，基础图、设备总图、部件装配图、电气原理图、全机润滑系统图、电气接线图、计算机控制程序软件及其他必要的技术文件、备件书及预验收和终验收结果数据材料等。 |  |
|  | 8.15.5.2 | Three sets of the above-mentioned technical data in English (or Chinese) and manufacturer’s domestic language respectively should be supplied. All documents shall be provided together with equipment, one set of above-mentioned documents shall be printed by the cleaning paper. And provide one set of electronic version.  上述资料提供英文(或中文)和制造商本国语言文本各3套。上述资料随设备一起提供，其中一套必须使用净化纸印制。同时提供电子文本一套。 |  |
|  | 8.15.5.3 | Technical Training and service requirements.  技术培训及服务要求: |  |
|  | 8.15.5.4 | 1. 3 persons from the Buyer shall be sent for basic and advance technical training at the Seller’s plant for a length of 1～2 weeks for 1～2 times.  安排1～2次买方3人到卖方工厂进行为期1～2周的基础技术培训。 2. The Seller shall provide education for customized technical training at the buyer’s site (at BOE SENSOR) for a length of not less than one week for 3 times.  由卖方在买方所在地（BOE SENSOR）提供3次不少于1周的技术培训。 3. 3 persons from the Buyer shall be sent for initial acceptance test at the Seller's plant .  The Seller's shall arrange interpreter(s) who can speak Chinese, Korean, Japanese for the above-mentioned activities at seller's own costs. The relevant expenses related to Buyers personal(including round-way tickets, food and lodging, transportation, personal insurance) shall be at Buyer’s cost, except that the working lunch & interpreter(s) during this period.  需安排买方人员3人到卖方工厂进行预验收。  卖方须免费提供中文翻译。买方人员的相关费用，如往返机票、食宿、交通及人身保险由买方承担。培训期间的工作餐及翻译费用由卖方负责。 |  |
|  | 8.15.5.5 | The Seller shall be responsible for installation, commissioning and trial operation. And furthermore, the seller shall be responsible for the timely completion of final-acceptance (i.e. The time of installation and commissioning, completion of inspection and the final delivery). The Seller's shall simultaneously send machine and engineers who are senior engineers with at least 3 years experience on the system installation. Engineer from the seller with their own special tools shall be sent to the buyer’s site and shall be responsible for the installation, commissioning, trial operation as well as free technical training courses for the Buyer’s operators and Engineers to ensure right operation and maintenance of the machine by the Buyer after training. All the works shall be completed within the promissory period.  卖方负责设备安装、调试、试运行。卖方应对设备最终验收期限（即安装调试、检验结束，最终交付）负责。  卖方应在发货时安排具有3年以上本设备安装经验的高级工程师自带专用工具到达买方现场并负责安装、调试、试运行，同时对买方操作人员和工程师进行免费技术培训，并保证买方人员在培训后能正确使用及维修设备，并按双方约定时间完成安装、调试及验收培训。 |  |
|  | 8.15.5.6 | The price of installation, commissioning, inspection, training and technical service shall be quoted separately and added into the total bid price.  安装、调试、检验、培训及技术服务费用应分项报价并计入投标总价。 |  |
|  | 8.15.5.7 | After machine final-acceptance, 12 months warranty to the machine shall be provided. During warranty period the parts and service shall be provided in time, efficiently and free of charge. The Seller should respond and arrive at the buyer’s site upon receipt of trouble information from the buyer within 2 hours, and shoot trouble within 8 hours. Time limitation for repairing or replacing defective goods with Supplier’s cost is 8 hours upon the receipt of the notice from the Buyer.  The fieldwork engineers shall be of not less than 3-year related working experience.  设备终验收后，免费保修期12个月。在免费保修期内免费提供零件及服务，服务应及时有效。设备发生故障后，在接到用户故障信息后要求48小时内到现场。现场工程师要求有不少于3年的相关工作经验。 |  |
|  | 8.15.5.8 | After the warranty period expired, extensive and preferential technical supports and spare parts supply shall be guaranteed during the operating life of the equipment. If there is any disorder, the Seller shall send the engineers to the Buyer’s site to provide amending and upgrading services.  设备免费保修期满之后，在设备使用寿命期内，应保证提供广泛而优惠的技术支持及备件供应。 |  |
|  | 8.15.5.9 | The urgent delivery of spare parts shall be sent within 48 Hrs after order.  急需备件应在下单后48小时内发货。 |  |
|  | 8.15.5.10 | Provide Manufacturing,Installation, Commissioning and Test schedule.  It should be signed by vendor and BOE engineer  提供制造、安装、调试和测试时间表。应由供应商和BOE SENSOR工程师签署 |  |
|  | 8.15.5.11 | Vendor has to submit education schedule and IT should be signed by maker and BOE engineer.BOE has the8.9 right to modify training items  供应商需要提交培训计划并且双方工程师签字确认，BOE有权选择培训项目 |  |
|  | 8.15.6 | **Acceptance standards and procedure:**  **验收标准及程序:** |  |
|  | 8.15.6.1 | Acceptance standards  验收标准 |  |
|  | 8.15.6.2 | Commissioning and acceptance shall be executed according to the related international standards and criteria and technical specifications as defined in the bid, and Initial Acceptance Test (IAT) & Final Acceptance Test (FAT) specifications accepted by both parties.  设备调试和验收应以相关的国际标准和规定及卖方投标文件中提供的技术参数为依据，按照双方同意的预验收（IAT）和最终验收（FAT）标准进行。 |  |
|  | 8.15.6.3 | Acceptance procedure:  验收程序: |  |
|  | 8.15.6.4 | After completion of commissioning (assembly) at the Seller’s factory, pre-acceptance should be performed according to the IAT specification. Shipment shall be effected only when pre-acceptance passes.  在卖方工厂调试完毕，按照预验收标准进行预验收:预验收合格后，方可发货。 |  |
|  | 8.15.6.5 | After completion of commissioning at the Buyer’s factory, final-acceptance should be performed according to FAT specification. The final acceptance will come into force with both parties’ signatures after final acceptance is successful.  在买方工厂安装调试完毕，按照最终验收标准进行最终验收；终验收合格后双方签字生效。 |  |
|  | 8.15.7 | Packing requirement and mode of transportation:  **设备包装要求及运输方式:** |  |
|  | 8.15.7.1 | The equipments shall be packed in new, strong and fumigation-treated wooden cases (fumigation certificate is required) or in other type of container, which is suitable for long distance marine and land transportation, for preventing from moisture, rust, shock and rough handling, and for integral loading and unloading. It shall be assured that each function of products is good after its arrival at final destination. The packing materials shall be in compliance with the stipulations as published by General Administration of Quality Supervision、Inspection and Quarantine of the People’s Republic of China (AQSIQ)  采购设备的包装应为新制、坚固、经过熏蒸处理的木箱（提供熏蒸证明）或其它非木质包装。采用的包装应适于长途海运和陆运，防潮、防锈、防震、防粗暴装卸，适于整体吊装，保证产品到达目的地后各项功能完好无损。包装材料应符合中华人民共和国国家质量监督检验检疫总局的相关规定。 |  |
|  | 8.15.7.2 | The seller shall be responsible for the delivery delay and equipment damage caused by the packing problems.  由于包装问题所导致的发运延误和产品损坏，应由卖方负责。 |  |
|  | 8.15.7.3 | Mode of transportation: By air or sea and/or land.  运输方式:空运/海运和/或陆运 |  |
|  | 8.15.7.4 | Detailed packaging requirements should be discussed by BOE engineers.  详细包装要求应 BOE工程师讨论。 |  |
|  | 8.16 | Bidding documents should be typed and signed in English or Chinese; and should be attached with a directory upon which the bidding documents are to be filed.  投标书应以中文/英文打印、签字，投标书应有中/英文目录，内容按目录顺序汇册。 |  |
|  | 8.17 | One set of electronic version of “Technical specification deviation table (using the format of Microsoft Word)” in Chinese with the bidding documents.  投标文件中应提供录有中文“技术规格偏离表（Microsoft Word格式）”的电子版一套。 |  |
|  | 8.18 | In the bidding documents, Items with the mark "\*" are key clauses，any deviation with these key clauses should result in rejection of the bid. The bidder shall provide technical support documents to respond to key clauses. Technical support documents shall be publicly printed documents by the manufacturer or testing reports published by authoritative testing institution. All documents, which do not comply with the above requirements, will be invalid.  招标文件中标注“\*”号的为关键指标，对这些关键项的任何偏离将导致废标。投标人应提交相应招标文件中关键指标的技术支持资料。技术支持资料应以制造商公开发布的印刷资料或检测机构出具的检测报告为准，凡不符合上述要求的，应当视为无效技术支持资料。 |  |