FILES ASSOCIATED WITH THIS SPECIFICATION

FILENAME	CONTENTS
SPC – P366.doc	This Document

CHANGE HISTORY

ORIGINATOR	DATE	DESCRIPTION OF CHANGE
Joe Zhou	12/23/16	Initial release. Modified from P344. - 30-120KV,1mA, 120W max - J3 Connector modified for external power input - Cone beam 35º - Focal Spot Size: 0.5mm nominal per IEC336 - Input Power: 24V internal battery, or external 24VDC - Communication Interface: Wireless, RJ45 Ethernet Port - Windows 10 Compliant **Standard Configuration contains:** - Portable x-ray source with protective cover and handle - One battery pack - One external charging station with power supply adaptor cable - One cable connector - One RJ45 cable - Two keys for safety lock - Tripod Mounting Hardware **Optional items:** - Extra Battery Pack (P/N AS3001-288) - Laser Alignment Guide (P/N DS3000-106) Carrying Case (P/N JP3000-019)
	1/27/17	Layout Correction for Cone Beam 40º - ZS3000-090_REV4
	3/29/17	Rev1 Release - Ethernet communication. Remove RS232. - Add IP setting for Ethernet and WiFi (#11) - Tripod as part of standard configuration
	7/18/17	Rev2 Update Firmware Rev2.
	4/4/18	Rev3 - Firmware update P314 Rev to Rev3 - Variable Watchdog command added up to 30 sec. - Buzzer Enable/Disable command added
	1/9/19	Clarification: Layout is updated from ZS3000-090 R4 to R5: Beam port opening is Cone40º. Actual beam coverage is Cone35º.
Joe Zhou	8/21/19	Section 9a: Physical Specifications: Remove IP rating
Joe Zhou	12/07/21	Rev4 Update Mechanical drawing-Pg 6 to ZS3000-291 R1-Tripod Adapter change. Corrections: - Correct " Regulation Fault" description. (#5) - Correct "X-Ray ON LED (Red) description. (#5) - Correct operating ambient temperature: -20°C to 40°C (#9a)

TITLE: IXS120BP120P366	
GENERATED BY: J.Zhou	DOC OWNER: X-ray Eng. & Sales
REVIEWED BY: Joe	REVIEW DATE: 12/7/21
APPROVED BY: NY Eng. Team	APPROVAL DATE:1/13/22

CONTENT

1. OVERVIEW

The IXS120BP120P366 is a 120kV, 120W, continuous output, compact and robust, battery operated portable X-ray generator. The Generator can be controlled and monitored via an Ethernet or Wireless interface. The Generator is built in accordance to the following specifications:

2. POWER Configuration and Options

The unit is powered from an internal battery or from an external 24VDC/10A supply via connector J3

a. Internal Battery :

- Lithium–ion battery Pack: 24V, 2500mAH
- Max. Continuous Exposure Time: 14 minutes delivering 120W (120kV@1mA)
- Max. Exposure Time at Pulsing: 20 minutes with 15Sec On and 15Sec Off.
- Battery Charging Time: 2hrs from low line at 21V.

b. 24VDC External power sources:

- 24VDC±10%, 10Amps .

3. HIGH VOLTAGE PERFORMANCE

Output Power:
120W max (120KV@1.0mA)

Tube Voltage Operational Range:
30 - 120kV (The unit can be programmed to operate within this kV range)

kV Program and Monitor Resolution:
<100V per step minimum

kV Accuracy:
< ±2.0% between programmed value and the kV output.

kV Ripple:
<±0.5% rms at Maximum kV and mA.

Voltage Regulation:
Line regulation: < 0.2% for Line Input changes over specified range (with constant ambient temperature and load).
Load regulation: < 0.2% for mA changes over specified range (with constant ambient temperature and line input).

kV Rise Time:
< 0.5 sec (to within 1% of final programmed kV)

kV Overshoot
< 5% of full output voltage.

4. TUBE CURRENT (mA) PERFORMANCE

Tube current (mA) Operational Range:
0.2 - 1.0mA (The unit can be programmed to operate within this kV range)

mA Program and Monitor Resolution:

< 10uA per step minimum

mA Rise Time:

< 0.5 sec (to within 1% of final programmed mA)

mA Accuracy:

< ±1% of the maximum mA output.

mA Regulation:

Line regulation: < 0.5% for Line Input changes over specified range (with constant ambient temperature and load).

kV regulation: < 0.5% for mA changes over specified kV range (with constant ambient temperature and line input).

5. PROTECTION and SAFETY CIRCUITRY

- **Over Current Protection**

  The Over-current trip point is set for within 1.05mA to 1.1mA. This will disable the high voltage output. A Reset is required to clear this fault.

- **Over Voltage Protection**

  The Over voltage trip point is set within 122kV to 130kV. This will disable the high voltage output. A Reset is required to clear this fault.

- **Over Temperature Protection**

  Over temperature trip point is set within 57 C to 63 C. This will disable the high voltage output. A Reset is required to clear this fault.

- **Arc Detection Fault**

  When an Arc occurred, the arc fault LED will be ON. If multiple arcs occurred within 10sec, the arc fault signal will be latched. This will disable the high voltage output. A Reset is required to clear this fault.

- **Regulation Fault**

  When kV and/or mA output is out of regulation, the unit will disable the high voltage output. A Reset is required to clear this fault.

  If the X-Ray On LED fails, the unit will disable the high voltage output and a regulation fault will bedisplayed. The LED will need to be replaced.

- **Power Limit Fault**

  When the KV/mA feedback values exceed the maximum rated power limit, this will disable the high voltage output. A Reset is required to clear this fault.

- **X-ray On LED (Red)**

  The LED will be Continuously ON when the X-ray is ON.

- **Power ON Key**

  When Key is at ON position, the tube filament will be turned ON **.**

- **Audible Alarm**

  When x-ray is ON the buzzer will sound 0.5 sec. ON 0.5 sec OFF.

- **Power ON LED (Green)**.
  When unit is turned ON via the power ON Key, the green LED turns ON.

6. FILAMENT POWER SUPPLY

Typical Filament output value:
Filament Current: 2.2A max.
Filament Voltage: 2 - 5Vac
(will custom to specific x-ray tube characteristics)

7. SAFETY & COMPLIANCES

a. Safety Compliance:
- Designed to meet EN/UL 61010-1.
- Designed to comply with CE

b. X-ray Leakage:
< 3mR/Hr with 5sec scan at 120KV@1mA, measured at 1meter distance
<6.8mR/hr at 50mm from the surface

8. X-RAY BEAM REQUIRMENTS

a. Focal Spot Size: 0.5mm nominal per IEC60-336 Standard
b. X Ray Beam Filtration: 1.5mm of Ultem
c. X-ray Beam geometry: Cone beam 35^{o} (Beam port opening is 40^{o})

9. PHYSICAL SPECIFICATIONS

a. Environmental
- Maximum operating ambient temperature: -20 C to 40 C
- Storage ambient temperature: -30 C to +80 C

b. Dimensions
245mm x 80mm x 184mm (See also Layout in Section 14).

c. Weight
X-ray generator: 5.9kg (not including handle + cover and other accessories)

10. CONNECTION

J1	Safety Key Lock
J2	Ethernet Connector
J3	Input Power and Battery Charging

J3 Connector: (LEMO, 8-Position Circular Connector Receptacle, P/N EGG.1B.308.CLL)

Pin Out	Name
1 & 6	24VDC Return
2 & 3	24VDC/10A External Power Supply
4	24VDC Battery Charger
5	Battery Charger Return
7	Interlock Out
8	Interlock In

(Note: Mating Plug P/N FGG.1B.308.CLAD72)

11. NETWORK CONNECTION

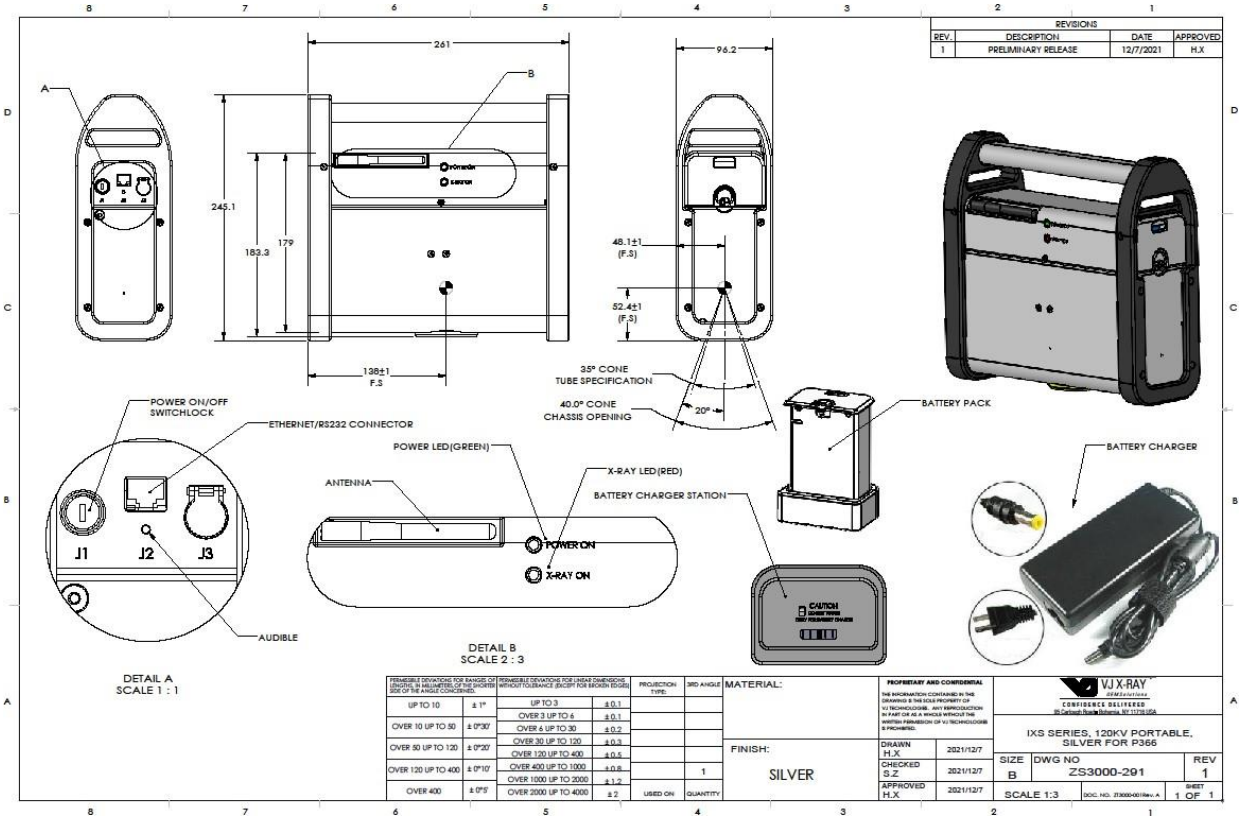
	Ethernet Connection	WiFi Connection
Network IP Address	192.168.10.125	Select connection with Model & Serial # (example: P366 S17085-A00001)
Device IP Setting	192.168.10.1	192.168.1.1

(See also Operational manual for detail connection instruction)

12. DIGITAL INTERFACE

Refer to Document P314-IXS-FIRMWARE-P314 Rev3

13. MECHANICAL DRAWINGS:



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