



2014100260U

# Test report

(2015)Environmental detection(Radiation) No.(03106-2)

**Category:** Entrusted detection

**Project:** Detection for the radiation environment  
around the X-ray instrument

**Client:** AELAB Guangzhou Co., LTD.

**Suzhou Shenyuan Environmental Detection Tech. Co., Ltd.**

**Date: Mar.17<sup>th</sup>,2015**

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<b>Client</b>	AELAB Guangzhou Co., Ltd.			<b>Representative</b>	Richard Liu	
<b>Addr.</b>	Room 2504, No.2-6 Hongde Rd. Guangzhou, Guangdong, China			<b>Zip.</b>	215347	
<b>Contact</b>	Wu Juan	<b>Mobile</b>	15800016110	<b>Tel.</b>	36271763	
<b>Detection time</b>	2015-03-12	<b>Weather</b>	Sunny	<b>Tested by</b>	Bao Jianghao Shi Songtao	
<b>Purpose</b>	Radiation detection					
<b>Object</b>	The radiation environment around the Skyray X-ray instrument					
<b>Item</b>	X-γ radiation dose rate					
<b>Device</b>	Germany.FH40G(Probe: FHZ672E-10) X-γ radiation dose equivalent ratemeter Model No.: SY-014 Instrument validity: Aug. 7 <sup>th</sup> ,2014~Aug.6 <sup>th</sup> ,2015					
<b>Standard</b>	GB/T14583-1993 <i>Specification for the determination of environmental terrestrialy γ radiation dose rate</i> GBZ115-2002 <i>X-ray diffraction and fluorescence analyzer health protection standards</i>					
<b>Evaluation basis</b>	GB18871-2002 <i>Basic standard for the Prevention of Ionizing Radiation and the Safety of Radiation Sources</i> stipulates that the limits for the staff and public are as follows : 1,The annual average effective dose of 5 consecutive years for the staff shall not exceed 20 mSv, with any year not exceed 50mSv 2,The annual average effective dose for each member of the key group of the public shall not exceed 1mSv GBZ115-2002 <i>X-ray diffraction and fluorescence analyzer health protection standards</i>					
<b>Detection point</b>	Layout the X-γ radiation dose rate monitoring points around the X-ray device ( see the attached )					
<b>Test object (X-ray device)</b>	<b>Use List</b>					
	<b>No.</b>	<b>Name</b>	<b>Model</b>	<b>Parameter (kV/mA)</b>	<b>Monitoring condition(kV/mA)</b>	<b>Location</b>
	1	Energy dispersive X-ray fluorescence spectrometer	EXPLORER 5000	45kV/0.08mA	45kV/0.08mA	Lab.
	Blank					

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No.	Test point	Instrument name: EXPLORER 5000										Status					
		Test result (nSv/h)															
		Data <sub>1</sub>	Data <sub>2</sub>	Data <sub>3</sub>	Data <sub>4</sub>	Data <sub>5</sub>	Data <sub>6</sub>	Data <sub>7</sub>	Data <sub>8</sub>	Data <sub>9</sub>	Data <sub>10</sub>		Average	Corrected			
1	XRF spectrometer east-side 5cm	122	123	124	123	122	123	124	123	122	123	124	123	122	123	122	OFF
2	XRF spectrometer east-side 1m	117	115	116	117	116	115	116	117	116	115	116	117	116	115	115	OFF
3	Operation position	121	122	120	121	122	121	122	121	122	121	122	121	120	121	120	OFF
1	XRF spectrometer east-side 5cm	141	142	140	141	142	141	140	141	142	141	140	141	142	141	140	ON
2	XRF spectrometer east-side 1m	138	139	137	138	139	138	137	138	139	138	137	138	139	138	137	ON
3	Operation position	140	139	138	139	140	139	138	139	140	139	138	139	140	139	138	ON
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Note: The cosmic ray response value is not deducted .



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**Conclusion:**

Known by the test results , under OFF state ,the X-γ radiation dose rate at 5cm ,1m to the energy dispersive X-ray fluorescence spectrometer (EXPLORER5000) manufactured by AELAB Guangzhou Co., Ltd. and of the operation position, respectively, is 122nSv/h, 115 nSv/h, 120 nSv/h; under ON state, the X-γ radiation dose rate at 5cm,1m and of operation position, respectively, is 140nSv/h,137 nSv/h,138nSv/h, meeting GBZ115-2002 *X-ray diffraction and fluorescence analyzer health protection standards* and the annual effective dose limits for staffs and public stipulated in GB18871-2002 *Basic standard for the prevention of Ionizing Radiation and the Safety of Radiation Sources*.

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Re-audited by: Bao Jianghao 鲍江豪

Issued by: Zou Bijun 邹碧君



Date: 3.17

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Diagram for x-γ radiation dose rate monitoring positions around EXPLORER5000

