**Checklist on safe deployment of UVC disinfection devices**

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| **S/N** | **Safety guidelines** | **How this requirement is adhered to or will be adhered to** |
| **Training** |
| 1. | UVC devices should only be operated by trained personnel to avoid accidental exposure to the personnel and others at the premises. |  |
| 2. | Personnel training should include the following:* Use of appropriate personal protective equipment (PPE)
* Health and safety topics – For example, the effects of UVC radiation on the eye and skin, the need for control of the hazards involved and the hazards associated with accidental UVC exposure in work areas.
* Safe handling of UVC device – For example, the safety precautions, maximum permissible exposure limits (if the device manual does not contain the information, it should be requested from the manufacturer), location of emergency stop button to power off the device or stop the UVC irradiation.
* First aid response post exposure
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| **Limitation of access** |
| 3.  | Personnel working with the UVC disinfection device should ensure that there is no person in line of sight of the device when it is in operation, so that there are no risks of exposure.  |  |
| If the UVC disinfection robot is to be used in an enclosed space, ensure that the space is vacated before commencing operation of the device. |  |
| If a UVC disinfection robot is to be used in an open space, restrict access to the area and ensure that the UVC robot is a safe distance away from people. Please check with the manufacturer on the safe distance for the specific UVC device. |  |
| In the case of upper room UV germicidal irradiation (UVGI) lamps, the lamp fixtures must be carefully installed to minimise exposure of UVC to occupants in the room. The limits for exposure to UV incident radiation on unprotected skin or eyes apply to exposure within any 8-hour period. The exposure limit for effective radiant exposure is 30 J/m2. This limit is specified under the ICNIRP guidelines on limits of exposure to UV radiation of wavelengths between 180nm and 400nm (incoherent optical radiation) and the International Electrotechnical Commission (IEC) 62471:2006 Photobiological safety of lamps and lamp systems. |  |
| 4.  | When any mobile UVC disinfection device is not in use, ensure that it is stored or kept in a manner so as to prevent unauthorised access.  |  |
| **Hazard Warning Labels** |
| 5. | There should be warning labels on all UVC disinfection devices to indicate the presence of a UVC hazard. Warning labels should include the following:* A UVC warning symbol (below is an example of a symbol in accordance with the IEC 61549-310-1)

* A warning sign that eyes and the skin must be protected
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| 6. | Warning lights should be used to indicate that the device is energised. |  |
| 7. | In the case of upper room UVGI lamps, warning signs should be placed near the lamps and on AHU access panels where the internal UVGI lamps are installed. Activation switches should be clearly labelled and protected with switch guards to prevent accidental activation by unauthorised persons. |  |
| **Personal Protective Equipment (PPE)** |
| 8.  | Anyone working on a UVC device should wear appropriate PPE when operating or servicing the device at all times. Examples of PPE include the following:* UV-resistant eyewear (goggles/face shields/safety glasses)
* Protective wear/clothing, which covers exposed skin
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| **Others** |
| 9. | Some UVC devices may emit ozone. The use of such UVC devices should be avoided for those who have respiratory sensitivity. Checks should be done with the manufacturer to verify whether the device emits ozone. |  |