

Requirements on water and power supplies for XFEL Photon Beamlines

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Attachment: Photon_Tunnel_components_hs130209.xls (Photon component list)

This memo describes an estimate of water and power requirements for XFEL Photon Beamlines as they are known to us today. Note that 'XFEL Photon Beamlines' here means all X-ray optical components after the undulators. Most of those components are located in XTD 6-10, however some components are also upstream of the shaft/dump buildings directly after the undulators. Some more details and locations of components are describes in the attached Excel list. Only major power consumers were taken into account and the assumption was that all heat of those will be removed by the cooling water. Excludes undulator and electron beamline requirements.

SASE1: XTD2-XS3-XTD9

Power: **106 kW**
Water 18 C: **100 kW**
Water 30 C: **15 kW (could be also non-VE water)**

SASE2: XTD1-XS2-XTD6:

Power: **113 kW**
Water 18 C: **107 kW**
Water 30 C: **15 kW (could be also non-VE water)**

SASE3: XTD2-XSDU2-XTD10:

Power: **87.5 kW**
Water 18 C: **82kW**
Water 30 C: **12 kW (could be also non-VE water)**

U1: XTD3-XS4-XTD8:

Power: **98 kW**
Water 18 C: **92 kW**
Water 30 C: **13.5 kW (could be also non-VE water)**

U2: XTD5-XSDU1-XTD7

Power: **85.5 kW**
Water 18 C: **80 kW**
Water 30 C: **11.5 kW (could be also non-VE water)**