



Specifications sheet: Copper cathode

Introduction

The copper cathode is used in the DrX photogun as the cathode material. When an UV laser pulse hits the cathode electrons are freed which are subsequently accelerated towards the anode.

Applications

- Photogun

Features

- High purity copper
- Easy alignment
- Ultra high vacuum compatible
- Seamless integration with DrX photogun

General

Material	: High purity oxygen-free copper (> 99.99%)
Work function	: 4.31 – 4.91 eV
Central wavelength	: 267 nm (4.65 eV)
Damage Threshold	: 100 J/m ² for 100 fs pulse
Reflectivity	: 43% (Theoretical)
Emission area	: flat circular area in center (1 mm in diameter)
Damage emission	: 10 ³ – 10 ⁴ electrons per μm ²
Efficiency	: 10 ⁻⁵ electrons / photon

In combination with DrX Photogun + Laser incoupler
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Angle of incidence	: ~ 3°
Polarization effects	: Negligible due to head-on irradiation
Cathode training	: 1 day - using DrX training software

Dimensions

Size	: 23 × 23 × 7 mm
Weight	: Unknown