



# 300HF High Frequency Accessory

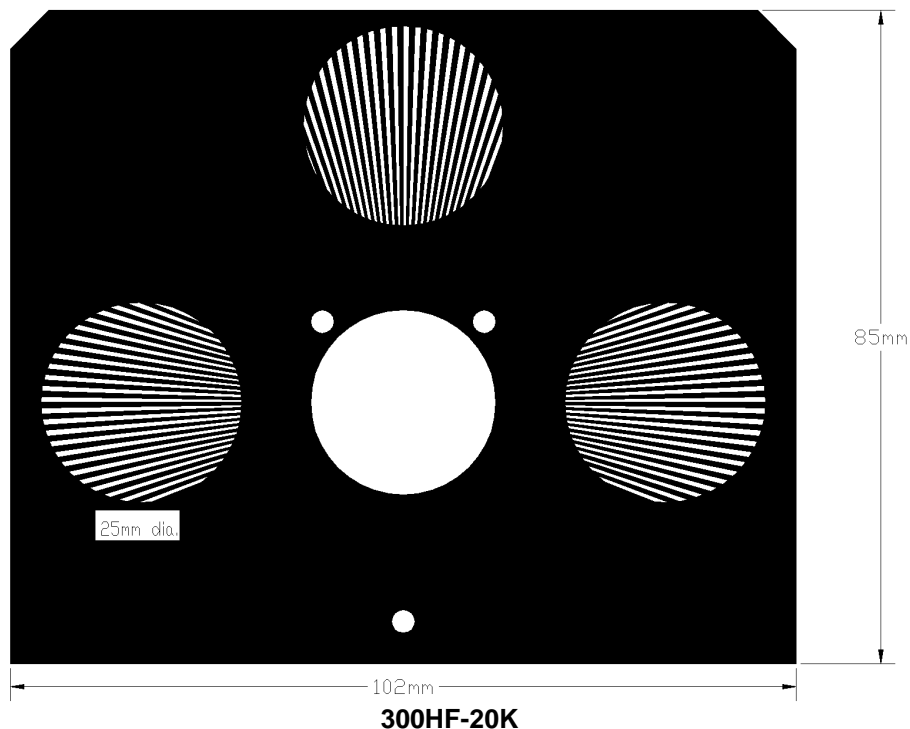
## DESCRIPTION

The **Model 300HF** high frequency accessory uses the Moiré fringe effect to enable light beams of wider diameters to be chopped at high frequencies. For the 300HF-20K, beams of up to 25mm (1 inch) diameter can be chopped at frequencies of up to 20kHz; for the 300HF-44K, beams of up to 10mm diameter can be chopped at frequencies of up to 44.5kHz.

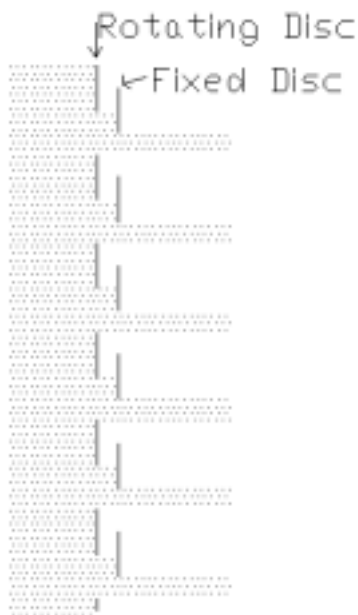
The 300HF high frequency accessory consists of a fixed disc (200 or 445 slot) on a mounting plate which bolts onto the standard 300H chopping head. A second disc (200 or 445 slot) is also provided and this is mounted onto the motor boss in the usual way.

When the moving disc and the fixed disc are in phase, a maximum of 50% of the incident light is transmitted. When the two discs are out of phase, almost the entire beam is blocked. As alignment and manufacture of the two blades is not 100%, the actual amount of transmitted light will vary from approximately 5% to 45%.

Please note that the 300HF comes with a corresponding normal blade and this 200 slot or 445 slot disc does not need to be ordered separately. The 300HF is not recommended for use with the 320 chopper systems.



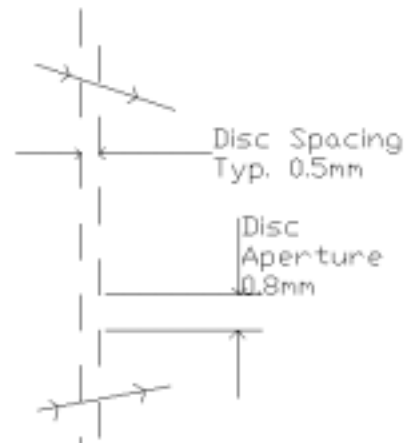
## HOW IT WORKS



**Principle of Operation**

Two discs, both 200-slot or 445-slot (customer option), are mounted concentrically. One is fixed on a backplate. The second disc rotates in the normal way. For a wide beam of light, the light beam (entering on the left in the illustration) is always 50% blocked by the fixed disc, and the rotating disc occults or reveals the rest of the beam.

Because the rotating blade is not mounted flush with the fixed blade, non-parallel beams may pass through the discs even when the overlap is complete. The space between the discs is kept at a minimum, typically about 0.5mm, to minimize this transmission.



**Effect of Non-Parallel Beam (300H-20K)**

Beams of small diameters, such as 0.75mm or less for the 300HF-20K or 0.35mm or less for the 300HF-44K, can be aligned so that they pass through the slots on the backplate. In such a situation, transmittance will vary between approximately 100% and 0%. As the beam diameter increases, maximum transmittance approaches 50%.

Intensity of Unchopped Beam

