

HRB-20

Metal Half-Ring Burner for MCVD



Introduction & Application

Optacore oxyhydrogen HRB-20 metal half-ring burner with water cooling is ideally suited for manufacturing of standard and special optical fiber preforms by MCVD method.

Description & Characteristics

This half-ring burner is made of stainless steel and has a radius of 68 mm between the tube center and burner surface. It is a surface mix burner with water-cooling, and it is equipped by a N₂ gas curtain (both sides), created by a specially designed nozzle system. Burner assembly consists of support to be installed onto the preform lathe carriage, with connections for burner gases (H₂, O₂) curtain (N₂ suggested), gases and cooling water.

Burner is designed according to long experience in preform manufacturing experience and has excellent references. It provides clean, even and stable flame (from 25 slm H₂ up) with reduced influence on preform geometry and fiber



strength due to moderate flame pressure. It does not require any setting of individual tips, characteristic for multi-tip type of burners. Matrix for gas delivery and mixing is available as spare part and can be exchanged easily. High outer edge may require installation at a small inclination angle in the horizontal plane, to provide proper visibility of the

HRB-20 Specifications:

Type	surface mix matrix burner, water cooled
Materials	stainless steel body
Height	200 mm
Length	450 mm
Depth	50 mm
Half-ring radius	Standard: 68 mm; Large: 88 mm
Hydrogen consumption	max. 200 (H ₂) slm (MFC not included – see options)
Oxygen consumption	max. 100 (O ₂) slm (MFC not included – see options)
Substrate tube outer diameter	16 – 40 mm (50 mm for exhaust tube)

hot zone to pyrometer without influence on preform geometry. Burner is available in 2 sizes: standard with 68 mm radius, and large with 88 mm radius (for larger outer diameter substrate tubes).

Options

Options available with HRB-20 H₂/O₂ burners include:

- complete burner gas control panels,
- analog or digital MFC for H₂/O₂ with different flow ranges,
- flow setting devices for gas curtains (MFC or rotameter),
- full circle, auxiliary, hand and ribbon burners,
- IR pyrometers, IR scanners and camera vision system,
- safety features (IR flame detector and interlock button panel),
- closed-loop cooling water systems for burner, pyrometer and camera cooling.



Configurations

HRB-20 half-ring burner can be retrofitted to most MCVD preform lathes as an upgrade or replacement of other type of H₂/O₂ burner. Due to its narrow flame profile, HRB-20 burner with integrated gas curtain can be used in FCVD systems, installed on the same or separate carriage, in parallel to furnace as a secondary heat source, for hybrid manufacturing process with fast collapse. HRB-20 can be implemented on preform lathes where selective etching by ribbon burner is required, with simple interchange of burners and with IR scanner temperature control. This burner is often used in manufacturing of highly-doped preforms and boron stress rods for PM Panda-type optical fibers.

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Note: Optacore reserves the right to change construction and/or specification of this product without notice.