# Mastercooler SMART

**The air-mist nozzle for every slab caster**

The Mastercooler SMART is the state of the art flat fan air-mist nozzle type combining high cooling efficiency with high flexibility in terms of water turn down ratio, spray angle, nozzle arrangement and connection methods. Mastercooler SMART nozzles cover a flow rate range from 0.3 to 70 l/min.
They are equipped with a plate bolted vertically onto adaptor plates. Small diameter fluid feed pipes are no longer necessary. All nozzles are mounted outside of the framework at the rear side of the segment with only the nozzle pipe, carrying the spray tip, reaching down to the spray position. A very rigid header pipe and a nozzle self alignment is the result.
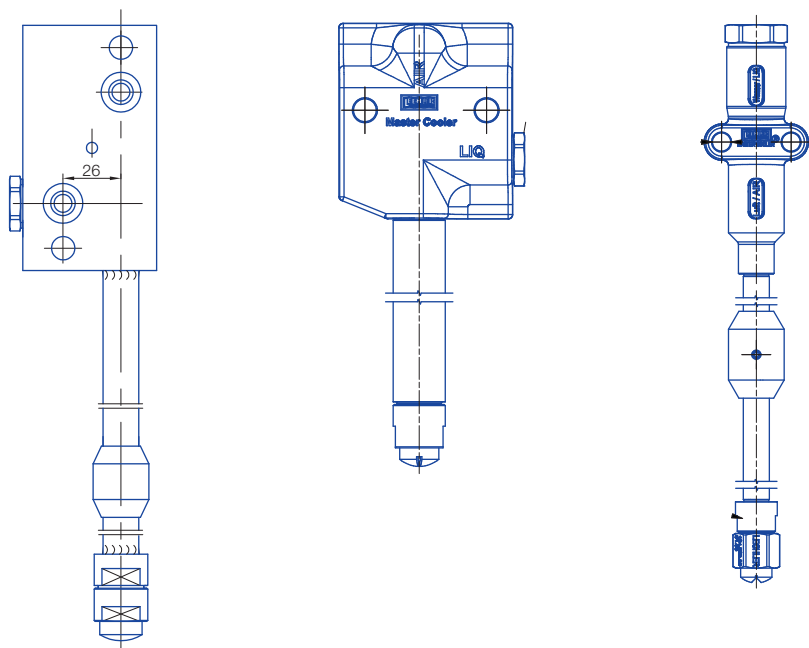
Mastercooler SMART technology is available for all slab casting machine types as the design can be adapted to match the individual requirements in terms of nozzle geometry and connection design. Nozzle parameters such as water and air flow rates, spray angle, extension pipe length and connection plate details are customized to the requirements of each individual project.
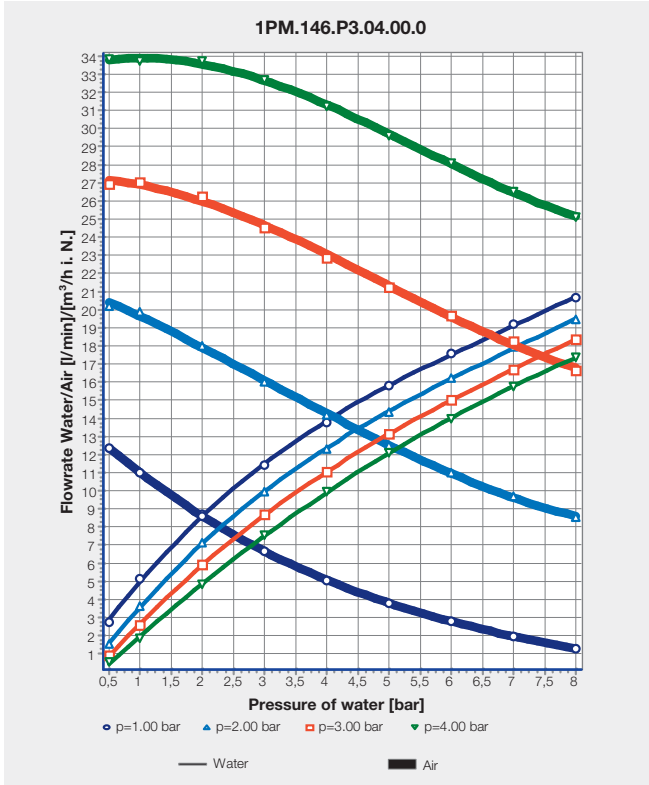
The nozzles are fine tuned to match the spray height and nozzle pitch in each segment to provide an even liquid distribution for the whole slab width in all nozzle operating conditions. Multi nozzle measurements in the Lechler laboratories ensure the highest quality for each individually designed Mastercooler SMART nozzle type.
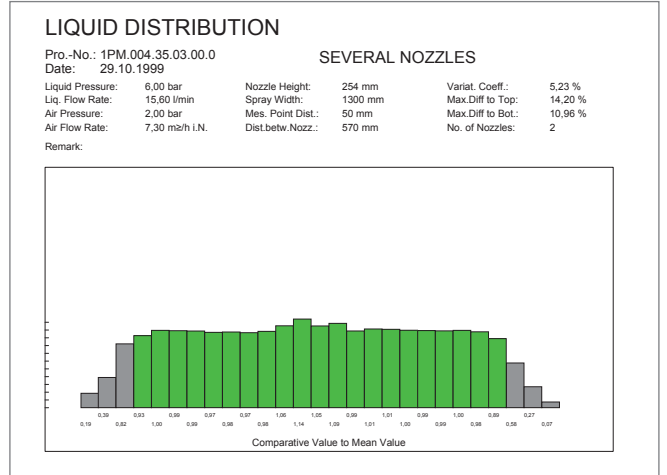


| Nozzle type | Max. water flow rate | Operating water pressure | Max. air flow rates | Operating air pressure | Spray angle |
|---|---|---|---|---|---|
| **Mastercooler SMART** | 70 l/min | 0.5 – 10 bar | 70 m³/h | 1 – 4 bar | 30 – 130° |

Benchmark data only, individual nozzle data to be specified

**1PM.146.P3.04.00.0**



Typical Mastercooler SMART pressure-flow diagram

## LIQUID DISTRIBUTION

| | | | SEVERAL NOZZLES | |
|---|---|---|---|---|
| Pro.-No.: | 1PM.004.35.03.00.0 | | | |
| Date: | 29.10.1999 | | | |
| Liquid Pressure: | 6,00 bar | Nozzle Height: | 254 mm | Variat. Coeff.: | 5,23 % |
| Liq. Flow Rate: | 15,60 l/min | Spray Width: | 1300 mm | Max.Diff to Top: | 14,20 % |
| Air Pressure: | 2,00 bar | Mes. Point Dist.: | 50 mm | Max.Diff to Bot.: | 10,96 % |
| Air Flow Rate: | 7,30 m²/h i.N. | Dist.betw.Nozz.: | 570 mm | No. of Nozzles: | 2 |

Remark:



Typical twin nozzle arrangement liquid distribution measurement documentation
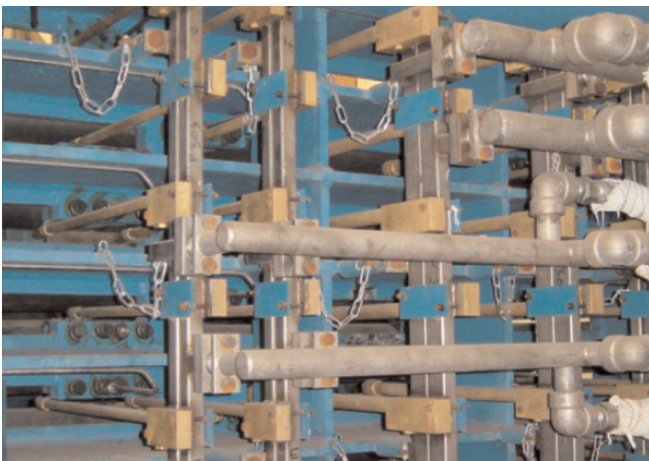


Slab caster segment with Mastercooler SMART nozzles



Horizontal segments with Mastercooler SMART nozzles

**LECHLER**