CLAIMS

1. A cooling device (1, 1', 1") for optical fiber (13), comprising two portions (20, 29), each portion (20, 29) comprising at least one receiving surface (204, 294) on which a half-channel (240, 2940) is arranged so that once the two portions (20, 29) are contacted at their receiving surface (204, 294) the two portions (20, 29) form a main through-channel intended to receive the passing of the optical fiber (13), characterized in that wherein each of the portions (20 ,29) is a block of heat-conductive material and in that wherein at least one (20) of the portions comprises a cylindrical secondary channel (209) in fluid connection with a plurality of openings (2046) distributed along the half-channel (2040) of this portion (20) to form a distribution chamber for heat-exchange fluid distributed to the plurality of openings (2046).

2. The device according to claim 1 wherein the secondary channel (209) is connected to the main channel via a plurality of passages (2092), each connected to an opening (2046) of the main channel.

3. The device according to claim 2 wherein the ratio between the diameter of the secondary channel (209) and the diameter of the plurality of openings (2046) is chosen so that the secondary channel (209) forms a distribution chamber allowing the heat-exchange fluid to be injected in parallel into all the openings (2046).

4. The device according to claim 2 or 3 wherein the ratio between the diameter of the secondary channel (209) and the diameter of the plurality of openings (2046) is between 3 and 100.

5. The device according to any of claims 1 to 4 comprising an inlet (208) for heat-exchange fluid in fluid connection with the secondary channel (209).

6. The device according to one of claims 1 to 5 wherein the heat-conductive material comprises aluminum.

7. The device according to one of claims 1 to 6 further comprising a cooling duct (210a, 210b) of the device.

8. The device according to one of claims 1 to 7 wherein the openings (2046) are spaced apart by a distance ranging from 5 mm to 200 mm.

9. The device according to any of claims 1 to 8 comprising at least one seal (207a, 207b) allowing the perimeter of the main channel to be hermetically sealed.

10. The device according to one of claims 1 to 9 wherein the main channel is coated with a radiation absorption layer (2041).

11. The device according to any of claims 1 to 10 wherein the block forming the other (29) of the portions also comprises a secondary channel and cooling ducts that are symmetrical relative the plane of contact of the receiving surfaces (204, 294).

12. A tower (T) for fabricating an optical fiber (13) characterized in that wherein it comprises at least one cooling device (1, 1', 1") according to one of claims 1 to 11.

13. A method for manufacturing a cooling device according to one of claims 1 to 11, characterized in that wherein it comprises the following steps:

a) providing (701) a first block E in heat-conductive material, the first block having at least one receiving surface (204);

b) forming (702) a main half-channel (2040) on the planar surface (204) of the first block (E);

c) forming (703) a cylindrical secondary channel (209) in the first block (E);

d) forming (704) a plurality of passages (2046, 2092) between the secondary channel (209) and the main half-channel (2040) of the first block (E);

e) forming (705) at least one inlet (208) for the secondary channel (209);

f) providing (711) a second block (E') and performing at least step b on the second block (E');

g) contacting (712) the two blocks (E, E') via their receiving surface (204, 294) so that the two half-channels (2040, 2940) form a main channel of the two assembled blocks (E, E').

14. The method according to claim 13 wherein steps b to e are performed on the second block (E').

15. The method according to claim 13 or 14 further comprising the following step:

- piercing (706) two cooling ducts (210a, 210b) in the first block (E) and/or in the second block (E').

16. The method according to any of claims 13 to 15 wherein the secondary channel (209) is bored in block (E).

17. The method according to any of claims 13 to 16 further comprising a black anodizing step to form a radiation-absorbing layer (2041).