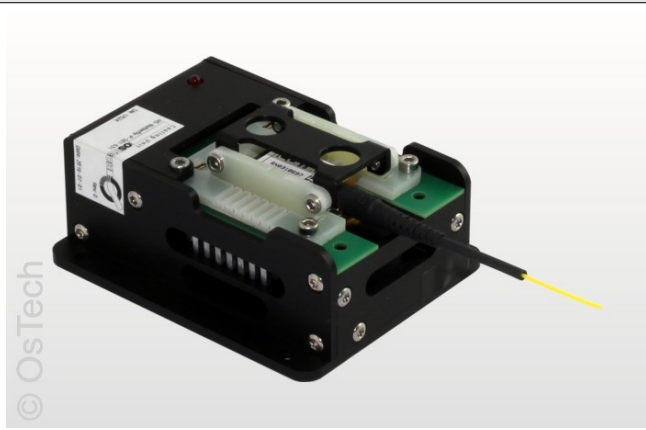


butterfly cooler blocks

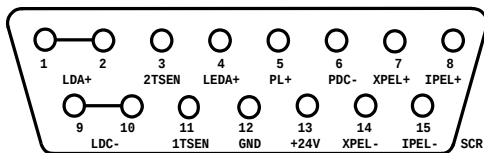
Types: hsp-06-btf-v0-631 / hsp-12-btf-v0-635 / hsa-10-btf-v0-636



- mounting of 14pin butterfly modules, direct mounting of diode lasers to cooling block with integrated TEC modules,
- free butterfly pinouts possible on request, see table btf14 pinouts
- high flexible and durable graphite sheet, thickness 70µm

Type 631: Rth 2.2K/W fan data-12V-0,4W
passive cooler, for lasers with internal TEC
Type 635: Rth 1.2K/W fan data-12V-0,7W
passive cooler, for lasers with internal TEC
Type 636: Qmax 10W fan data-12V-1W
active cooler, with internal TEC but also
with external TEC-stage

SubD15 male connector



| | abbr. | function |
|-------|-------|--|
| 1; 2 | LDA+ | Laser diode Anode (+) |
| 9; 10 | LDC- | Laser diode Cathode (-) |
| 4 | LEDA+ | LaserON-LED-Anode (+) ca. 5mA (vs. GND) |
| 5 | PL+ | Pilot laser (+) (PL- at Pin GND) |
| 6 | PDC- | Photo diode Kathode (-) (Anode at GND) |
| 8 | IPEL+ | TEC (+) internal Butterfly TEC |
| 15 | IPEL- | TEC (-) internal Butterfly TEC |
| 3 | 2TSEN | 2nd external Temperature sensor Input; default NTC10kOhm (vs. GND) |
| 11 | 1TSEN | 1st internal Temperature sensor Input; default NTC10kOhm (vs. GND) |
| 12 | GND | Common Ground - n.c. to screen ! |
| 13 | +24V | 1.2V..24V Supply for fan etc., max. 300mA (vs. GND) |
| 7 | XPEL+ | TEC (+) external TEC (only Type 636) |
| 14 | XPEL- | TEC (-) external TEC (only Type 636) |
| | SCR | Common Screen |

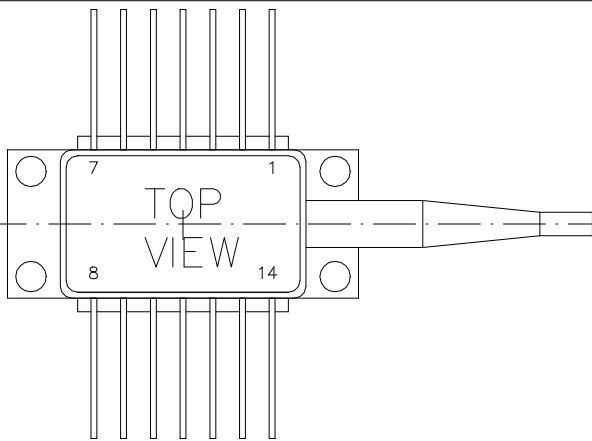
Pinout compatible to Drivers:

- laser max 1.5A and 1TEC stage
tabletop-version type-119
oem-version type-289
- laser max. 4A and 1TEC stage
tabletop-version type-460
oem-version type-30
- all devices optional also with a 2nd TEC stage



butterfly cooler blocks

BTF14 Pinouts (Layouts can be freely preconfigured)



Pinout compatible to Drivers:
 tabletop-version type 119 (laser max. 1.5A and 1TEC stage)
 tabletop-version type 460 (laser max. 4A and 1TEC stage)
 oem-version type 30 (laser max. 4A and 1TEC stage)
 (optional with 2nd TEC stage for Type 636)

Layout-0 most common standard, f.e. lumics, eagleyard
 Layout-1 f.e. gooch&Housego
 Layout-2 f.e. gooch&Housego EM4 (special version, only Type 635)

| | Layout-0 default | Layout-1 | Layout-2 | |
|----|---------------------|----------|----------|--|
| 1 | TEC+ | TEC+ | TEC+ | |
| 2 | NTC | NTC | NTC | |
| 3 | PHD- | KAT | PHD+ | |
| 4 | PHD+ | PHD+ | PHD- | |
| 5 | NTC | PHD- | NTC | |
| 6 | n.c. | TEC+ | PHD- | |
| 7 | n.c. | TEC- | PHD+ | |
| 8 | n.c. | n.c. | n.c. | |
| 9 | ANO | n.c. | KAT | |
| 10 | ANO | n.c. | ANO | |
| 11 | KAT | ANO | KAT | |
| 12 | KAT | KAT | n.c. | |
| 13 | n.c. | ANO | n.c. | |
| 14 | TEC- | n.c. | TEC- | |

butterfly cooler blocks

