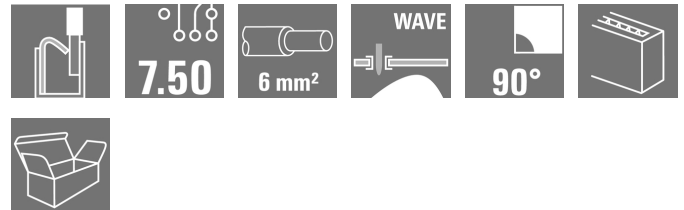


## OMNIMATE Power - series LL LLF 7.50/12/90V 5.0SN BK BX

**Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 26  
D-32758 Detmold  
Germany  
Fon: +49 5231 14-0  
Fax: +49 5231 14-292083  
www.weidmueller.com



similar to illustration

**The sturdy, direct connection for extreme current and voltage requirements in all power electronics applications such as solar inverters, frequency converters, servo-controllers and power supplies.**

### General ordering data

Type	LLF 7.50/12/90V 5.0SN BK BX
Order No.	<a href="#">2472 180000</a>
Version	Printed circuit board terminals, 7.50 mm, Number of poles: 12, 90°, Solder pin length (l): 5 mm, tinned, black, PUSH IN with actuator, Clamping range, max.: 6 mm², Box
GTIN (EAN)	4050118550047
Qty.	20 pc(s).
Product data	IEC: 1000 V / 41 A / 0.5 - 6 mm² UL: 600 V / 35 A / AWG 24 - AWG 8
Packaging	Box

Creation date May 2, 2020 12:33:28 PM CEST

**OMNIMATE Power - series LL**  
**LLF 7.50/12/90V 5.0SN BK BX**

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**Technical data****Dimensions and weights**

Width	91 mm	Width (inches)	3.583 inch
Height	36.55 mm	Height (inches)	1.439 inch
Height of lowest version	31.55 mm	Depth	22.07 mm
Depth (inches)	0.869 inch	Net weight	0.049 g

**System parameters**

Product family	OMNIMATE Power - series LL	Wire connection method	PUSH IN with actuator
Mounting onto the PCB	THT solder connection	Conductor outlet direction	90°
Pitch in mm (P)	7.5 mm	Pitch in inches (P)	0.295 inch
Number of poles	12	Fitted by customer	No
Solder pin length (l)	5 mm	Solder pin dimensions	d = 1.5 mm
Solder eyelet hole diameter (D)	2 mm	Solder eyelet hole diameter tolerance (D)+	0,1 mm
Number of solder pins per pole	1	Stripping length	12 mm
L1 in mm	82.5 mm	L1 in inches	3.245 inch
Touch-safe protection acc. to DIN VDE 0470	IP 20	Touch-safe protection acc. to DIN VDE 57 106	Safe from finger touch

**Material data**

Insulating material	Wemid (PA)	Colour	black
Colour of operational elements	orange	Material of operational elements	PA4T GF
Colour chart (similar)	RAL 9011	Insulating material group	I
Insulation strength	$\geq 10^8 \Omega$	UL 94 flammability rating	V-0
Contact material	E-Cu	Contact surface	tinned
Layer structure of solder connection	4-10 $\mu$ Sn matt	Storage temperature, min.	-40 °C
Storage temperature, max.	50 °C	Max. relative humidity during storage	70 %
Operating temperature, min.	-40 °C	Operating temperature, max.	120 °C

**Conductors suitable for connection**

Clamping range, min.	0.25 mm <sup>2</sup>
Clamping range, max.	6 mm <sup>2</sup>
Wire connection cross section AWG, min.	AWG 24
Wire connection cross section AWG, max.	AWG 8
Solid, min. H05(07) V-U	0.5 mm <sup>2</sup>
Solid, max. H05(07) V-U	6 mm <sup>2</sup>
Flexible, min. H05(07) V-K	0.5 mm <sup>2</sup>
Flexible, max. H05(07) V-K	6 mm <sup>2</sup>
w. plastic collar ferrule, DIN 46228 pt 4, 0.25 mm <sup>2</sup> min.	
w. plastic collar ferrule, DIN 46228 pt 4, 6 mm <sup>2</sup> max.	
w. wire end ferrule, DIN 46228 pt 1, min.	0.25 mm <sup>2</sup>
w. wire end ferrule, DIN 46228 pt 1, max.	6 mm <sup>2</sup>

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**Technical data**

Clampable conductor	Cross-section for conductor connection	Type	fine-wired
		nominal	0.5 mm <sup>2</sup>
wire end ferrule	Stripping length	nominal	14 mm
	Recommended wire-end ferrule	<a href="#">H0.5/18 OR</a>	
Cross-section for conductor connection	Type	fine-wired	
	nominal	1 mm <sup>2</sup>	
wire end ferrule	Stripping length	nominal	15 mm
	Recommended wire-end ferrule	<a href="#">H1.0/18 GE</a>	
Cross-section for conductor connection	Type	fine-wired	
	nominal	1.5 mm <sup>2</sup>	
wire end ferrule	Stripping length	nominal	15 mm
	Recommended wire-end ferrule	<a href="#">H1.5/18D SW</a>	
	Stripping length	nominal	12 mm
	Recommended wire-end ferrule	<a href="#">H1.5/12</a>	
Cross-section for conductor connection	Type	fine-wired	
	nominal	0.75 mm <sup>2</sup>	
wire end ferrule	Stripping length	nominal	14 mm
	Recommended wire-end ferrule	<a href="#">H0.75/18 W</a>	
Cross-section for conductor connection	Type	fine-wired	
	nominal	2.5 mm <sup>2</sup>	
wire end ferrule	Stripping length	nominal	14 mm
	Recommended wire-end ferrule	<a href="#">H2.5/19D BL</a>	
	Stripping length	nominal	12 mm
	Recommended wire-end ferrule	<a href="#">H2.5/12</a>	
Cross-section for conductor connection	Type	fine-wired	
	nominal	4 mm <sup>2</sup>	
wire end ferrule	Stripping length	nominal	12 mm
	Recommended wire-end ferrule	<a href="#">H4.0/12</a>	
	Stripping length	nominal	14 mm
	Recommended wire-end ferrule	<a href="#">H4.0/20D GR</a>	
Cross-section for conductor connection	Type	fine-wired	
	nominal	6 mm <sup>2</sup>	
wire end ferrule	Stripping length	nominal	14 mm
	Recommended wire-end ferrule	<a href="#">H6.0/20 SW</a>	
	Stripping length	nominal	12 mm
	Recommended wire-end ferrule	<a href="#">H6.0/12</a>	
Cross-section for conductor connection	Type	fine-wired	
	nominal	10 mm <sup>2</sup>	
wire end ferrule	Stripping length	nominal	12 mm
	Recommended wire-end ferrule	<a href="#">H10.0/12</a>	
Reference text	Length of ferrules is to be chosen depending on the product and the rated voltage., The outside diameter of the plastic collar should not be larger than the pitch (P)		
Max. clamping range	6 mm <sup>2</sup>		

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**Technical data**


**Rated data acc. to IEC**

tested acc. to standard	In accordance with IEC 60947-7-1	Rated current, min. number of poles (Tu=20°C)	41 A
Rated current, max. number of poles (Tu=20°C)	35 A	Rated current, min. number of poles (Tu=40°C)	41 A
Rated current, max. number of poles (Tu=40°C)	30 A	Rated voltage for surge voltage class / pollution degree II/2	1,000 V
Rated voltage for surge voltage class / pollution degree III/2	1,000 V	Rated voltage for surge voltage class / pollution degree III/3	1,000 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	8 kV	Rated impulse voltage for surge voltage class/ pollution degree III/2	8 kV
Rated impulse voltage for surge voltage class/ contamination degree III/3	8 kV		

**Rated data acc. to CSA**

Rated voltage (Use group B / CSA)	600 V	Rated voltage (Use group C / CSA)	600 V
Rated voltage (Use group D / CSA)	600 V	Rated current (Use group B / CSA)	35 A
Rated current (Use group C / CSA)	35 A	Rated current (Use group D / CSA)	5 A
Wire cross-section, AWG, min.	AWG 24	Wire cross-section, AWG, max.	AWG 8

**Rated data acc. to UL 1059**

Institute (cURus)		Certificate No. (cURus)	E60693
Rated voltage (Use group B / UL 1059)	600 V	Rated voltage (Use group C / UL 1059)	600 V
Rated voltage (Use group D / UL 1059)	600 V	Rated current (Use group B / UL 1059)	35 A
Rated current (Use group C / UL 1059)	35 A	Rated current (Use group D / UL 1059)	5 A
Wire cross-section, AWG, min.	AWG 24	Wire cross-section, AWG, max.	AWG 8
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

**Packing**

Packaging	Box	VPE length	220 mm
VPE width	210 mm	VPE height	50 mm

**Classifications**

ETIM 6.0	EC002643	ETIM 7.0	EC002643
eClass 9.0	27-44-04-01	eClass 9.1	27-44-04-01
eClass 10.0	27-44-04-01		

**Data sheet**

**OMNIMATE Power - series LL  
LLF 7.50/12/90V 5.0SN BK BX**

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**Technical data**

**Notes**

- |       |  |
|-------|--|
| Notes | <ul style="list-style-type: none"> <li>• Additional colours on request</li> <br/> <li>• Rated current related to rated cross-section &amp; min. No. of poles.</li> <br/> <li>• Wire end ferrule without plastic collar to DIN 46228/1</li> <br/> <li>• Wire end ferrule with plastic collar to DIN 46228/4</li> <br/> <li>• P on drawing = pitch</li> <br/> <li>• Rated data refer only to the component itself. Clearance and creepage distances to other components are to be designed in accordance with the relevant application standards.</li> <br/> <li>• The test point can only be used as potential-pickup point.</li> </ul> |
|-------|--|

IPC conformity	Conformity: The products are developed, manufactured and delivered according international recognized standards and norms and comply with the assured properties in the data sheet resp. fulfill decorative properties in accordance with IPC-A-610 "Class 2". Further claims on the products can be evaluated on request.
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**Approvals**

Approvals



**Downloads**

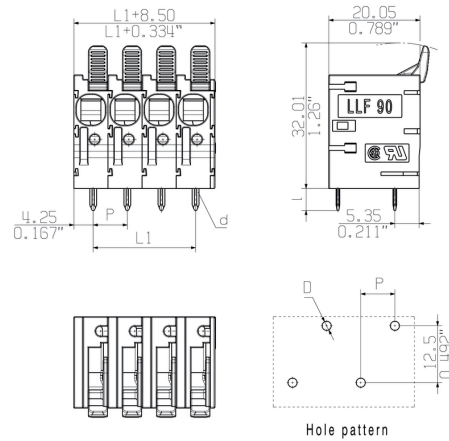
Approval/Certificate/Document of Conformity	<a href="#">Declaration of the Manufacturer</a>
Engineering Data	<a href="#">STEP</a>
White paper power electronics connected correctly	<a href="#">Download Whitepaper</a>
User Documentation	<a href="#">QR-Code product handling video</a>
White paper UL 600 V	<a href="#">Download Whitepaper</a>

**OMNIMATE Power - series LL  
LLF 7.50/12/90V 5.0SN BK BX**

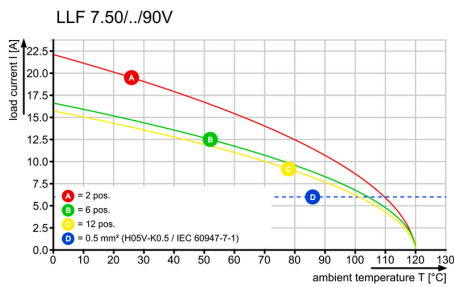
**Weidmüller Interface GmbH & Co. KG**  
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**Drawings**

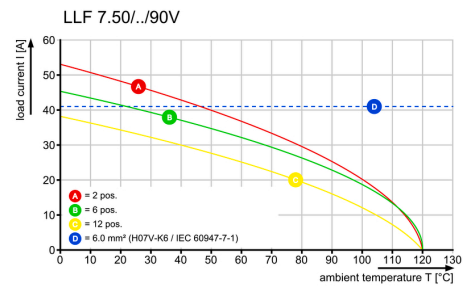
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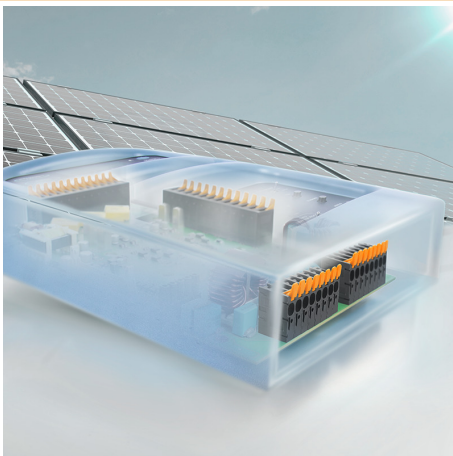
**Derating curve**



**Derating curve**

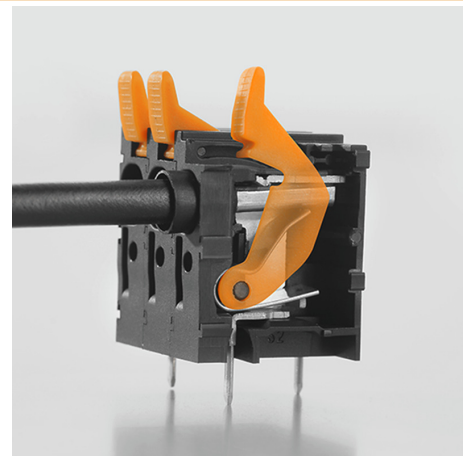


**Product benefits**



Power up to UL 600 V  
Offset solder pins

**Product benefits**



Tool-free wiring  
Top contact security

**Data sheet**

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**Accessories**

**Tools**



- Stripping tools with automatic self-adjustment
- For flexible and solid conductors
- Ideally suitable for mechanical and plant engineering, railway and rail traffic, wind energy, robot technology, explosion protection as well as marine, offshore and ship building sectors
- Stripping length adjustable via end stop
- Automatic opening of clamping jaws after stripping
- No fanning-out of individual conductors
- Adjustable to diverse insulation thicknesses
- Double-insulated cables in two process steps without special adjustment
- No play in self-adjusting cutting unit
- Long service life
- Optimised ergonomic design

**General ordering data**

Type	STRIPAX	Version
Order No.	<a href="#">9005000000</a>	Tools, Stripping and cutting tool, Flexible and solid conductors with
GTIN (EAN)	4008190072506	PVC insulation, 10mm², 25mm
Qty.	1 pc(s).	

**Slotted screwdriver**

Slotted screwdriver with rounded blade SD DIN 5265, ISO 2380/2, output to DIN 5264, ISO 2380/1. ChromTop tip, SoftFinish grip



**General ordering data**

Type	SDS 0.5X3.0X80	Version
Order No.	<a href="#">9008320000</a>	Screwdriver, Blade width (B): 3 mm, Blade length: 80 mm, Blade
GTIN (EAN)	4032248056262	thickness (A): 0.5 mm
Qty.	1 pc(s).	

## OMNIMATE Power - series LL LLF 7.50/12/90V 5.0SN BK BX

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# Accessories

### Additional accessories



#### No task is too small when creating the perfect solution.

Connections form just one part of the overall process. Small details are often the key to the perfect solution in applications where potentials are tested, grouped or even isolated.

A system is not a system without small but essential details:

- Test plugs ensure reliable pick-up from diagnostic sockets

In tandem with the manufacturing process and application.

### General ordering data

Type	PS 2.0 MC	Version	Product data	Packaging
Order No.	<a href="#">031000000</a>	PCB plug-in connector, Accessories, Test plug, red, Number of poles: 1		Box
GTIN (EAN)	4008190000059			
Qty.	20 pc(s).			

### Slotted screwdriver



VDE insulated slot-head screwdriver, SDI DIN 7437, ISO 2380/2, drive output acc. to DIN 5264, ISO 2380/1. SoftFinish grip

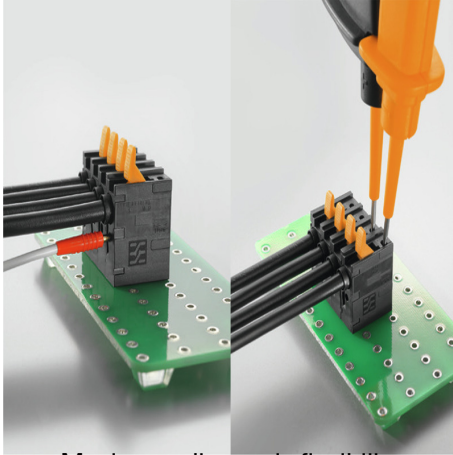
### General ordering data

Type	SDIS 0.5X3.0X100	Version
Order No.	<a href="#">900838000</a>	Screwdriver, Blade width (B): 3 mm, Blade length: 100 mm, Blade
GTIN (EAN)	4032248056347	thickness (A): 0.5 mm
Qty.	1 pc(s).	



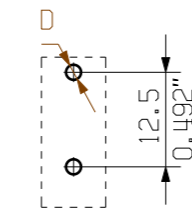
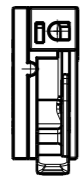
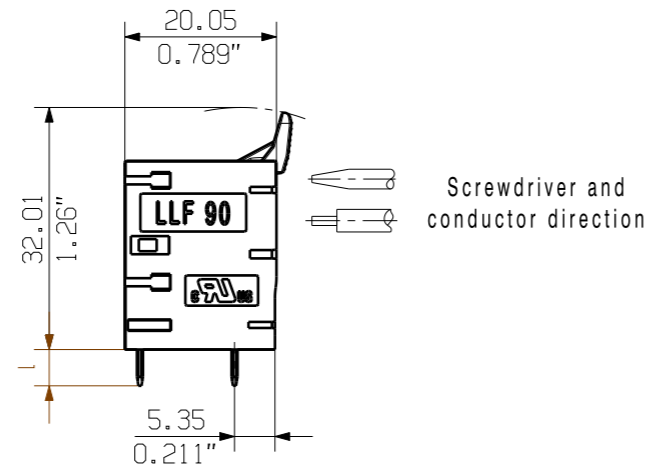
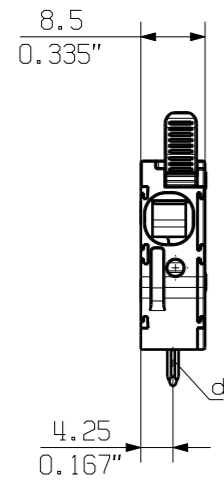
**Data sheet****OMNIMATE Power - series LL  
LLF 7.50/12/90V 5.0SN BK BX**

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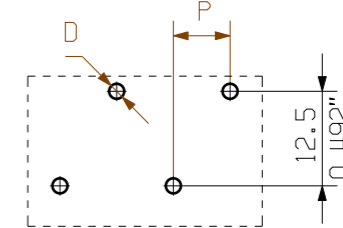
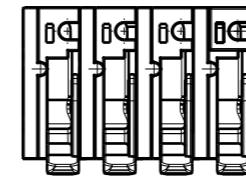
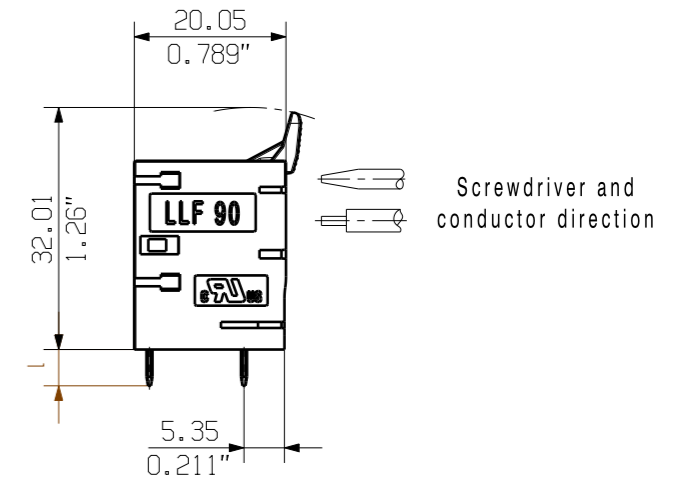
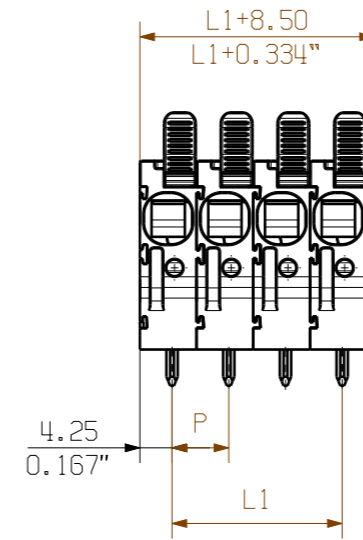
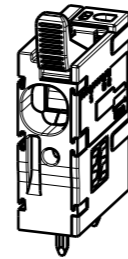
**Drawings****Product benefits**

Maximum diagnosis flexibility  
Easily accessible test point

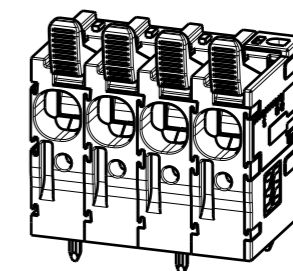
General customer drawing, topical version only if required



Hole pattern



Hole pattern



P = 7.50  
0.295" (Pitch)  
D = Ø2 +0.1  
0.079"  
d = 1.5x0.8  
0.059"x0.031"  
l = 5.0 +0.2 -0.6  
0.197"

12	82.50	3.248
11	75.00	2.953
10	67.50	2.657
9	60.00	2.362
8	52.50	2.067
7	45.00	1.772
6	37.50	1.476
5	30.00	1.181
4	22.50	0.886
3	15.00	0.591
2	7.50	0.295
n Poles	L1 [mm]	L1 [inch]

For the mounting of PCBs, it should be noted that the rated data relates only to the PCB components alone.

The necessary creepage and clearance paths must be observed in connection with the respective applicant in accordance to IEC 664 / VDE 0110.

The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3 very fine.

Weidmüller PCB components are tested to the DIN EN 61984 standard, and are valid for its field of application. Provided that the components are used to the intended purpose, all requirements with respect to the occurring of electrical, mechanical, thermic and corrosive stress will be satisfied.

General tolerance: DIN ISO 2768-mK 	96880/3 02.08.17 DAMERIUS_A		Cat.no.: .	
	Modification		<b>3 61339</b> <b>06</b> Drawing no. Issue no.	
	Drawn	Date	Name	
	Responsible	04.07.2016	KRECHT_M	
	Checked	02.08.2017	WRIGHT_ST	
Scale: 1/1	Supersedes: .	Approved	02.08.2017	HELIS_MA
Product file: LLF 7.50			7416	

**LLF 7.50/.../90...**  
LEITERPLATTENKLEMME  
PCB TERMINAL

## Recommended wave soldering profiles

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 Germany  
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### Single Wave:



### Double Wave:



### Wave soldering profiles

Wired connection elements should be processed in accordance with the DIN EN 61760-1 standard. We have included two recommendations for practical wave soldering profiles, with which Weidmüller PCB terminals and connectors are qualified.

When choosing a suitable profile for your application, the following factors also need to be considered:

- PCB thickness
- Proportion of Cu in the layers
- Single/double-sided assembly
- Product range
- Heating and cooling rates

The single and double wave profiles each indicate the recommended operating range, including the maximum soldering temperature of 260°C. In practice, the maximum soldering temperature is quite often well below the above maximum profile.