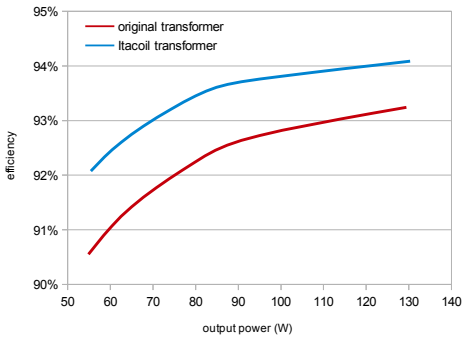
STMicroelectronics® EVL130W-SL-EU 130 W SMPS for LED street lighting applications based on L6599AT-L6562AT

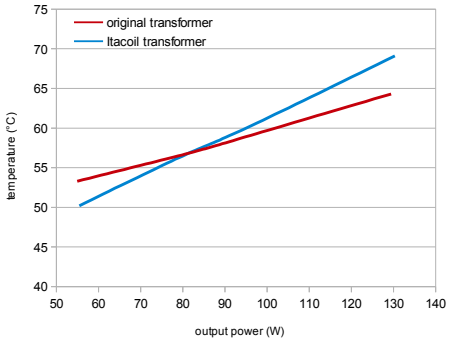
Original Vs TRLEV2501 comparative test

	Full load, 230Vac IN		
	Original Transformer	Itacoil TRLEV2501	
Vac IN	229,83	230,01	V
Active power IN	138,8	138,5	W
Power factor	0,967	0,967	-
Vdc OUT	47,92	47,96	V
Adc OUT	2,701	2,717	A
Power OUT	129,4	130,3	W
Switching frequency	92,5	95,1	kHz
Efficiency	**93,24%**	**94,08%** (+0,84%)	%
Total power loss		-1,26 (-13%)	W
Temperatures			
Ambient	27,3	18,5	°C
Transf. Primary T_{rise}	41,9	44,4	°C
Transf. Secondary T_{rise}	44,3	49,1	°C
Transf. Core T_{rise}	38,1	36,5	°C
PFC inductor winding	N/A	N/A	°C
Transformer			
L x W x H	3,9x3,9x2,9	2,6x2,7x2,6	cm
overall footprint	15,2	7,02 (-53%)	cm^2
overall volume	44,1	15,6 (-65%)	cm^3
weight	59,3	36,6 (-38%)	gr

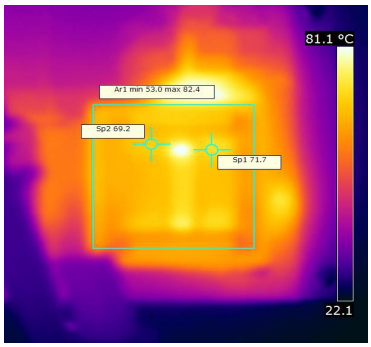
Overall board efficiency



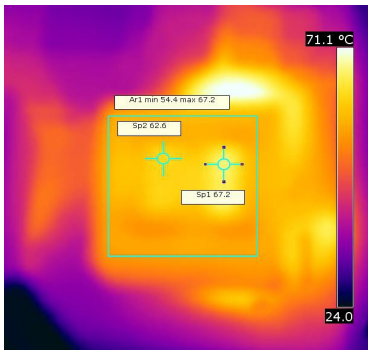
Transformer surface hot-spot (Ta=20°C)



original transformer – ta28,6°C



Itacoil transformer – ta18,5°C



Efficiency and dimensions of Itacoil TRLEV2501 transformer (30-48V 130W) are much better than original.
We can provide an PFC inductor
- with the same characteristics as the original
- optimized and smaller version (dimensions 2,34x2,33xh1,85 cm, cost -40% about, 93,8% board efficiency)
- standard PFC inductor, usually in stock.

Available every other inductive component.

TEST CONDITIONS

Test performed on STMicroelectronics® EVL130W-SL-EU demo-board, LLC resonant converter with PFC based on L6599AT-L6562AT. (demo-board user guide)
Original transformer replaced with Itacoil demo transformer TRLEV2501, mounted slightly raised from the PCB due to different pin layout.

A window on PCB, under the transformer, is suggested to avoid cooling and creepage worsening.

BENEFITS OF TRANSFORMER DESIGN BY ITACOIL® PROPRIETARY SOFTWARE
- smaller and lighter components
- power loss and costs improvement
- best LLC stage efficiency
- **first time success of your project**

Rev. 02a – 04 Jun 2015