



***EMC, Power Quality and Energy solutions***

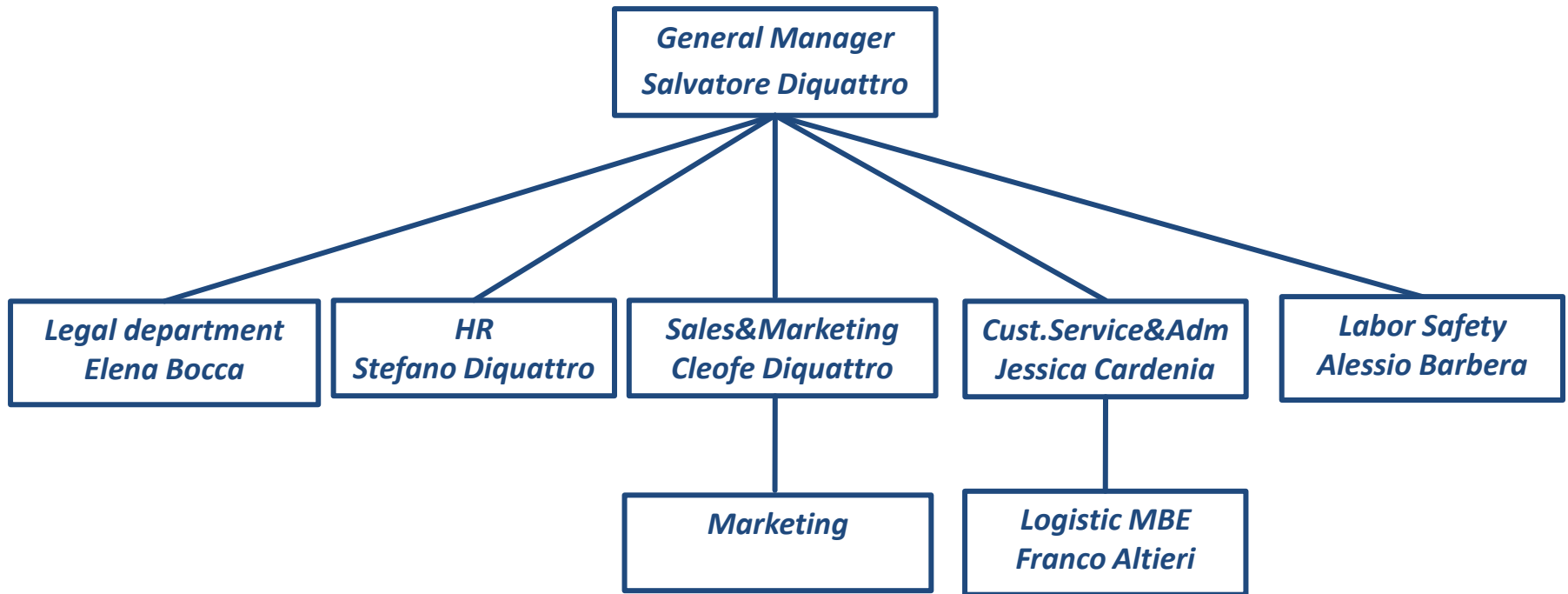
***Company Profile***



*Safe Energy :  
EMC, Power Quality and Energy optimization*



# Organization



*People, Products, competence and service  
are the fundamentals of our Company*

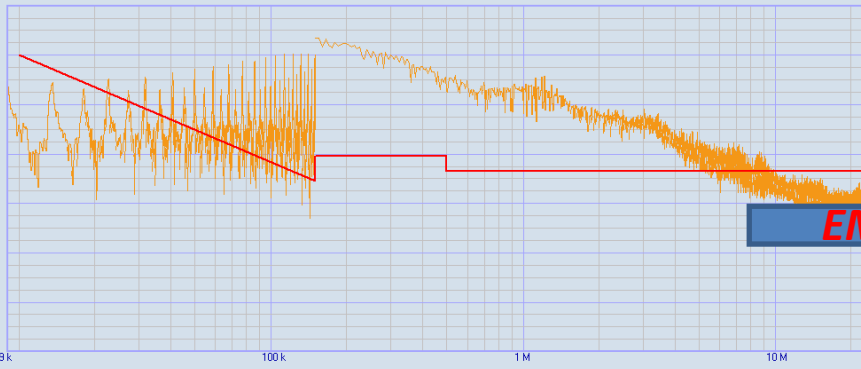


## Mission

*Safe Energy supports all the Companies that want to solve their Power Quality and EMC issues through competitive and innovative solutions*

<i>category</i>	<i>disturbance type</i>
<b>EMC</b>	<b>Elettrostatic discharge</b>
	<b>radiated radiofrequency</b>
	<b>Fast Voltage Transient</b>
	<b>Lightning</b>
	<b>Conducted disturbances</b>
	<b>Electrostatic Field</b>
	<b>Elettromagnetici field</b>
<b>PQ</b>	<b>Magnetici field</b>
	<b>Harmonic on Power Line</b>
	<b>Voltage Swell and Dip</b>
	<b>Voltage interruptions</b>
	<b>Voltage transient</b>
	<b>Voltage variation</b>
	<b>Frequency variation</b>
<b>Flickers</b>	

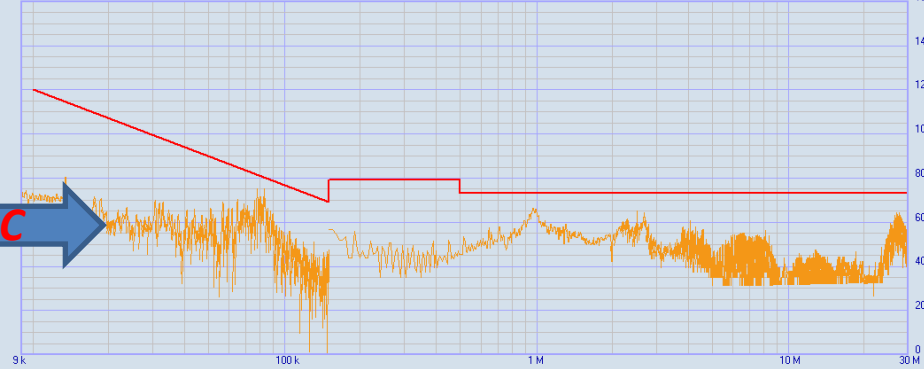
# Result after analysis and solution



CMC SE 9KW 3Ph 230V ac Pinne AL CENTRO

Start [MHz]	Stop [MHz]	Step	Detector	Hold Time	RBW	Min Alt	Pre Amp	Pre Sel	Prompt start	Ancillary			
1	0.009	0.15	AUTO (50 Hz)	P	60945 for pwr distr	Margin 0 dB	Lowest	200 Hz	20	OFF	DN	...	L1
2	0.15	30	AUTO (5 kHz)	P	60945 for pwr distr	Margin 0 dB	1.9 ms	9 kHz	20	OFF	DN	...	L1

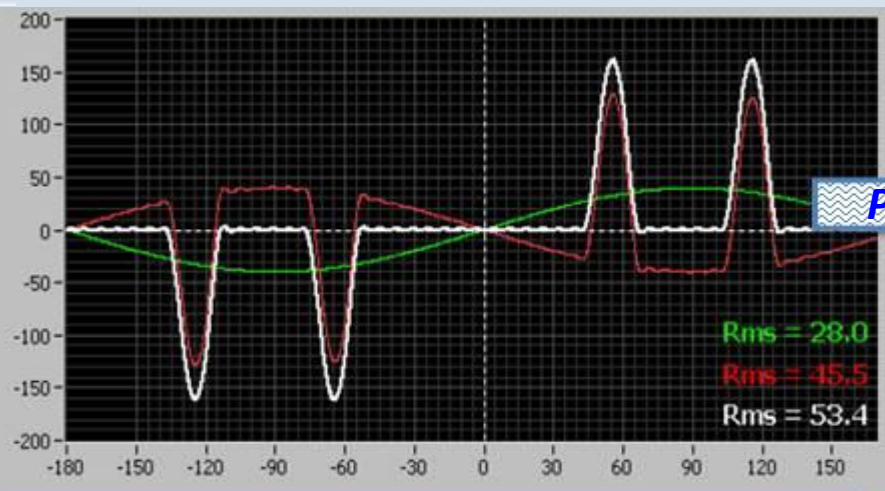
Pulse Limiter ON  
Ancillary = L3 PMM  
Limits: 60945 for pwr distr



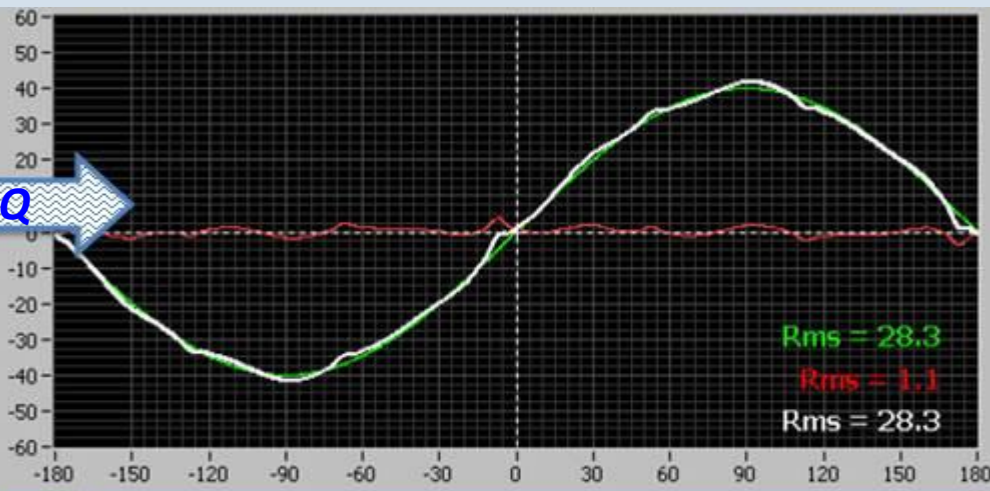
DM6 b84143a I2

Start [MHz]	Stop [MHz]	Step	Detector	Hold Time	RBW	Min Alt	Pre Amp	Pre Sel	Prompt start	Ancillary				
1	0.009	0.15	AUTO (50 Hz)	S P A	60945 for pwr distr	Margin 0 dB	Scan 1000 ms	Peak 0 ms	200 Hz	10	OFF	DN	...	L2
2	0.15	30	AUTO (5 kHz)	S P A	60945 for pwr distr	Margin 0 dB	Scan 1000 ms	Peak 1.3 ms	9 kHz	10	OFF	DN	...	L2

Pulse Limiter ON  
Ancillary = L3 PMM  
Limits: 60945 for pwr distr

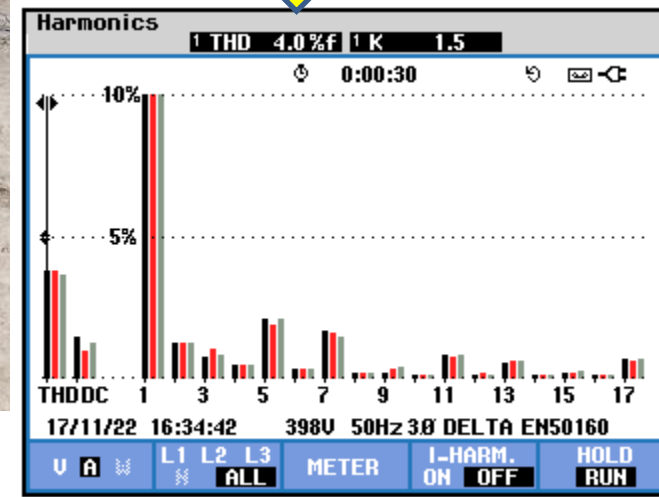
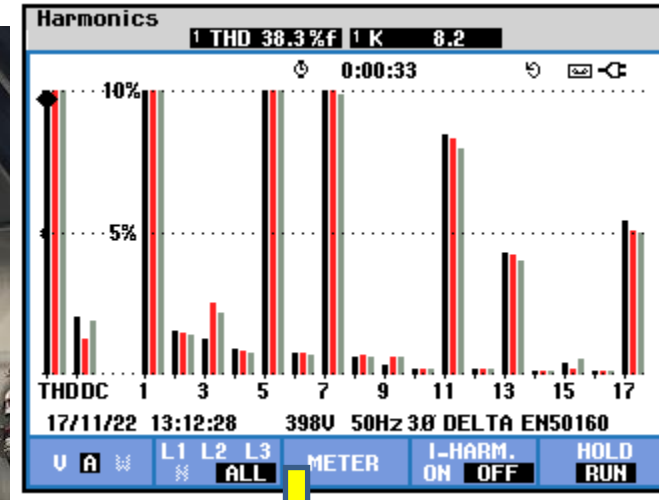


PQ



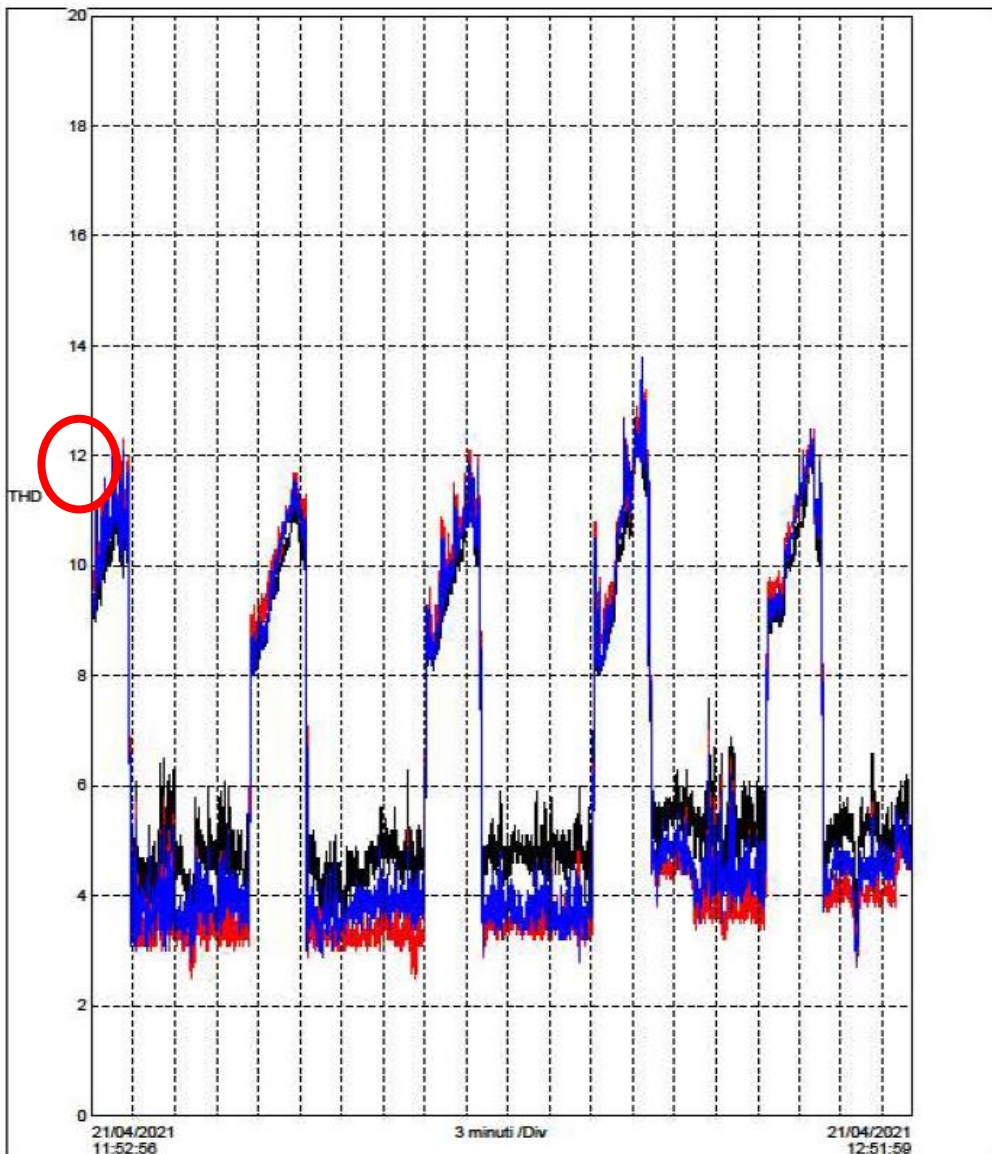
- HVAC
- Naval
- Renewable Energies
- Industrial
- Medical





Result after Harmonic mitigation

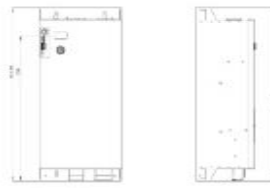
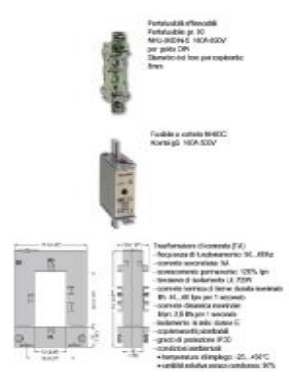
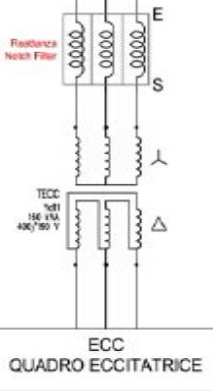
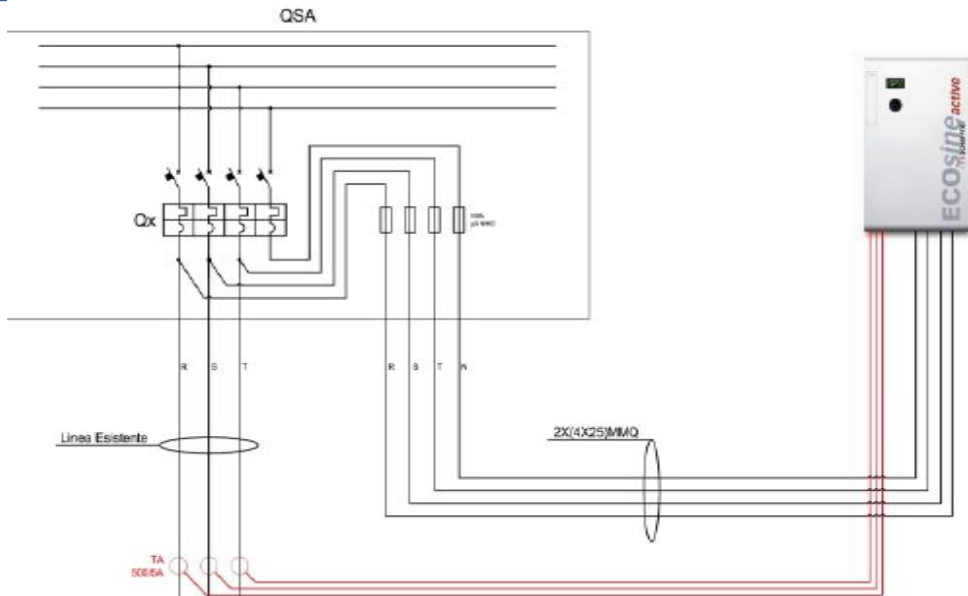
V1 THD	MED = 6,523 %	MIN = 3,200 %	MAX = 13,40 %
V2 THD	MED = 5,888 %	MIN = 2,500 %	MAX = 13,60 %
V3 THD	MED = 6,044 %	MIN = 2,800 %	MAX = 13,80 %



	Voltage(V)	Fre.(Hz)	THDU(%)
L1	393.4	50.2	6.6
L2	392.1	50.2	5.9
L3	392.4	50.2	6.3

	Grid Current		Load Current	
	THDI	RMS	THDI	RMS
Main	7.0%	248.8A	42.1%	265.4A
Data	8.3%	246.0A	39.8%	258.3A
Settings	7.2%	252.4A	39.0%	264.2A

Result after Harmonic mitigation

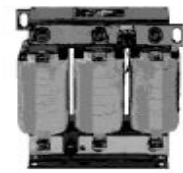


ECOsine Active  
 PN 5000-08-000-4  
 Dimensioni (mm): 415x160x100 mm  
 Fase: 3/4/5

Tab. 14 Dimensioni di attacco (mm) (vedi anche 40000-00-0)

Sez.	Sezione	Sezione	Sezione
TA, L1, L2, L3	30 mm	30 mm	30 mm
Sezione per cavo	30 mm	30 mm	30 mm
Letto cavo	30 mm	30 mm	30 mm

## DATI TECNICI REATTANZA - NOCTH FILTER



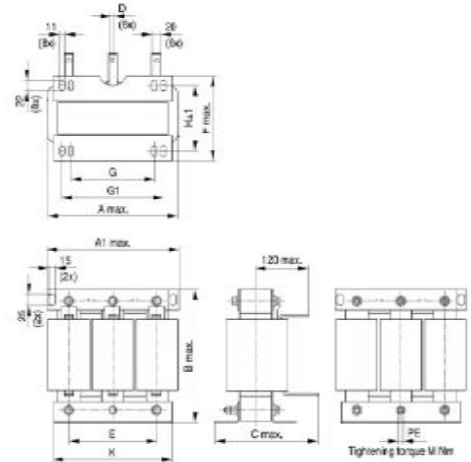
Technical data and measuring conditions

Rated voltage $V_N$	530 V AC (50/60 Hz)
Rated current $I_N$	Refered to 40 °C rated temperature
Test voltage $V_{test}$	1150 V AC, 2 s (line/line) 2500 V AC, 2 s (line/earth)
Relative voltage drop $u_r$ in %	At L: 50 Hz and 400 V AC
Insulation class	F (155 °C)
Overload capability (thermal)	3 · $I_N$ , 1 < t < 3 s in 300 s
Climatic category (IEC 60068-1)	25T021 (-25 °C/+100 °C) 21 days damp heat test
Approvals	Insulation system class 155 (F); T-E-S-CF1 UL 1446

Characteristics and ordering codes

$L_N^1$ A	$I_N^2$ %	$R_{eq}^{(3)}$ mΩ	$L_N^{(3)}$ mH	$P_N^3$ W	Approx. weight kg	Ordering code
$V_N = 530$ V AC						
250	4,7	0,9	0,15	340	32,0	B85X0L0230SC09

<sup>1</sup> Higher current values upon request  
<sup>2</sup> Typical value at 30 °C, tolerance ±10%  
<sup>3</sup> Values at 50 °C  
<sup>4</sup> At L: 50 Hz, 25 °C



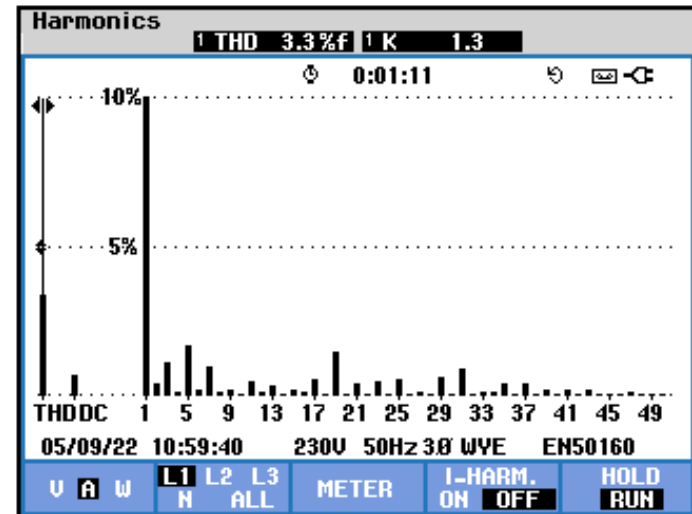
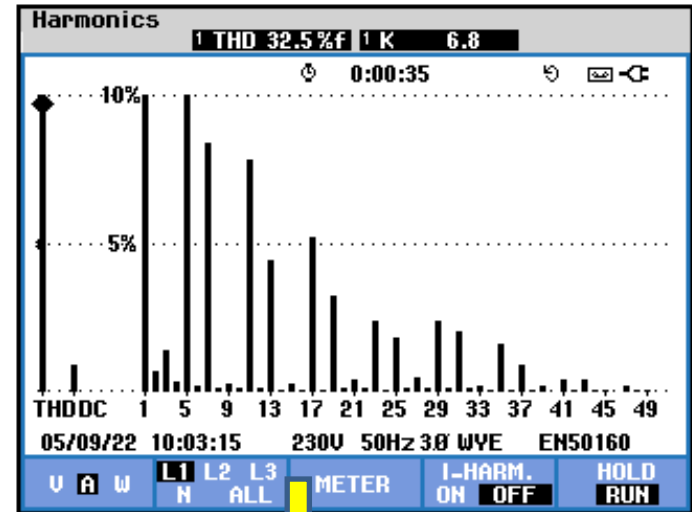
A	A1	B	C	D	E	F	G	G1	H	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
320	300	200	285	8,6	200	186	100	250	142	220	110	100	100	100	100	100	100	100	100	100	100	100	100	100	100

General tolerances according to ISO 2768-mL  
 Dimensione in mm

Sezione cavi		
Utenza	Sezione	Tipo cavo
Notch Filter	Uguale alle linee del primario del TE	FG7M1 - FG7R
ECOsine Active	2x(4x25) + 1G35 [mmq]	FG7OR
TA Lovato DM1TA 0500	2x2,5 mmq	FG7OR

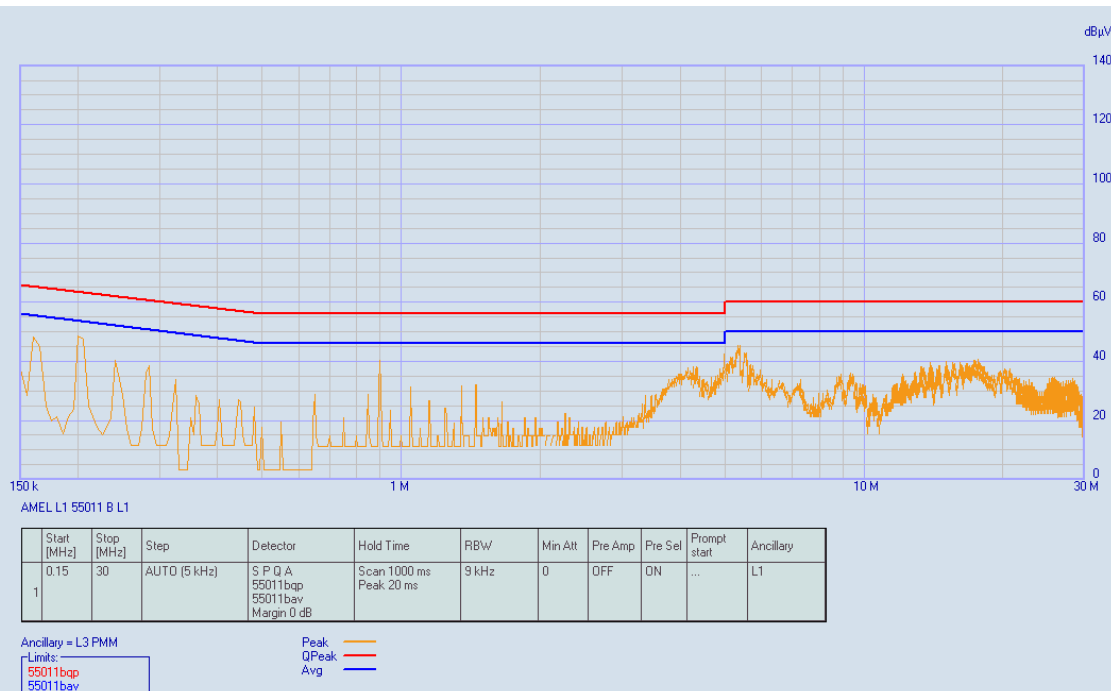
Result after Harmonic mitigation





Result after Harmonic mitigation

## Conducted emission after analysis and solution





Thank you !