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22210-1



PERFORMANCES TESTS

MODEL

WHIRLPOOL-NEEASAE

DD300 - N° 00000008

DD300 - N° 00000008 - Class T

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WHIRLPOOL EUROPE

CABINET MODEL : DD 300 (N°00000008) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	31/05/99		Compressor : GL 80 AN
Ambient temperature	[°C]	43	Condenser : wires and tubes
Refrigerant R 134a	[gr]	150	

Thermostat setting			7 / 7	1.5 / 7		1 / 7	
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-15.2	+3.4	-14.8	+3.3	-13.6
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+8.8	+12.5	+11.6	+12.7	+12.1
4	T 2 refrigerator temp.	[°C]	+5.2	+9.6	+8.5	+10.0	+9.3
5	T 3 refrigerator temp.	[°C]	+3.1	+8.2	+6.3	+8.6	+7.0
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-18.5	-12.3	-16.1	-12.3	-15.3
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	85.8	74.8	84.1	73.6	82.1
10	Condenser in temp.	[°C]	98.6	45.7	98.6	45.4	96.9
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	57.0	41.9	57.1	37.9	58.1
13	Oil cooler in temp.	[°C]	59.2	49.0	59.9	48.8	60.2
14	Oil cooler out temp.	[°C]	71.9	54.8	70.4	54.5	68.6
15	Suction pipe temp.	[°C]	24.9	45.5	25.9	45.3	26.1
	Refrig. temp. (Avr)	[°C]	+5.7	+9.4		+9.9	
	Freezer temp. (Avr)	[°C]	-18.5	-14.2		-13.8	
	Test Time	[h]	24	24		24	
	Running Time	[%]	100	77.2		76.8	
	Energy consumption	[Kwh/24h]		3.692		3.645	
	Voltage	[Volt]	220	220		220	
	Current	[A]	1.67	1.88	1.70	1.83	1.72
	Power	[Watt]	183	259	188	251	190

NOTE :



appliances engineering

DD300-43°C-Vuoto-Pos1.5(0000008).dat

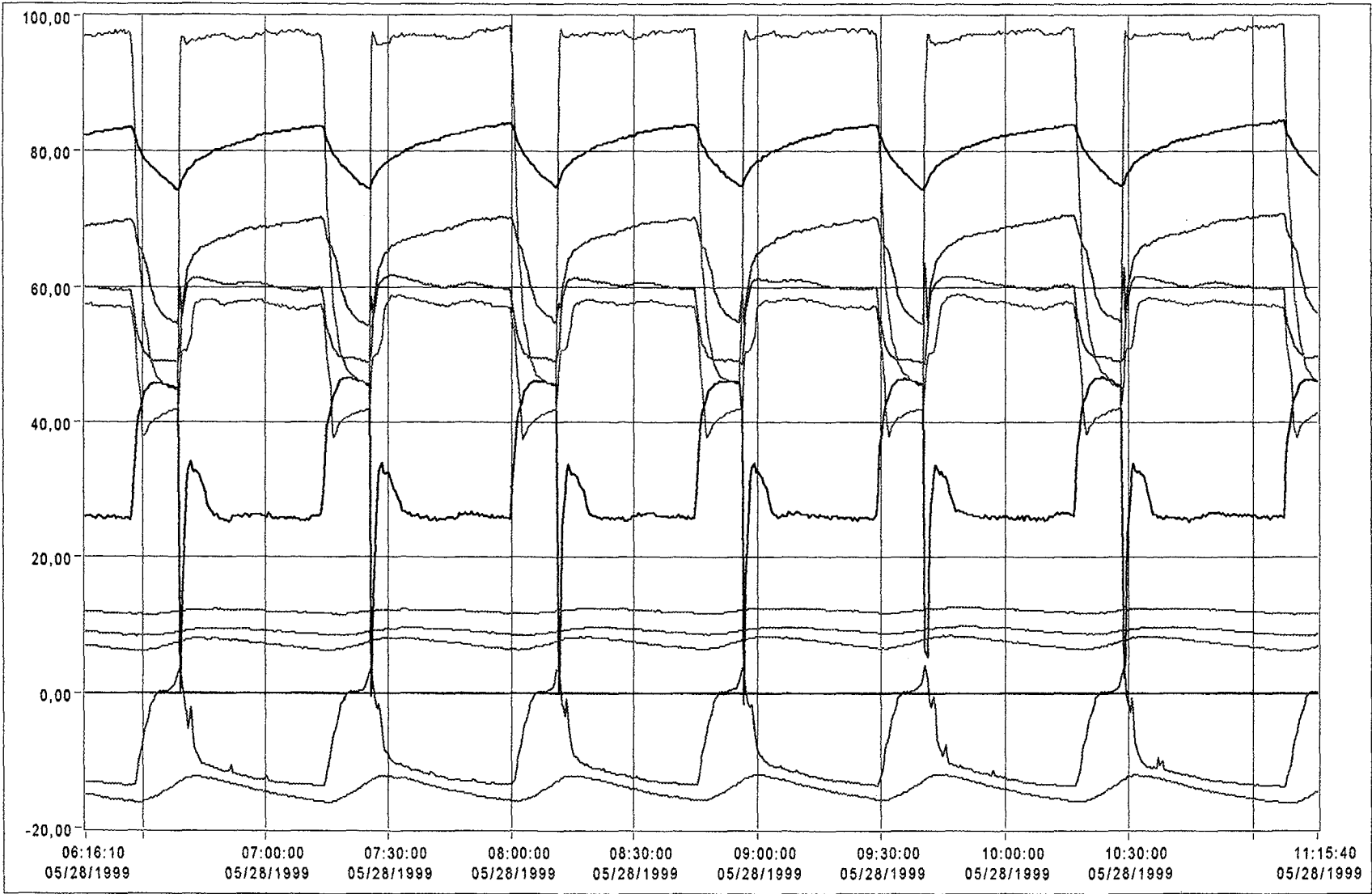
Descrizione DD300-43°C-Thermostat control-Pos1.5(0000008)

ID Posizione: CAMERA 2 POSIZIONE B

Sampling Time: 30

Inizio test: 28/05/1999 18.16.10

Fine test: 29/05/1999 08.13.55



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DD300-43°C-Vuoto-Pos1(00000008).dat

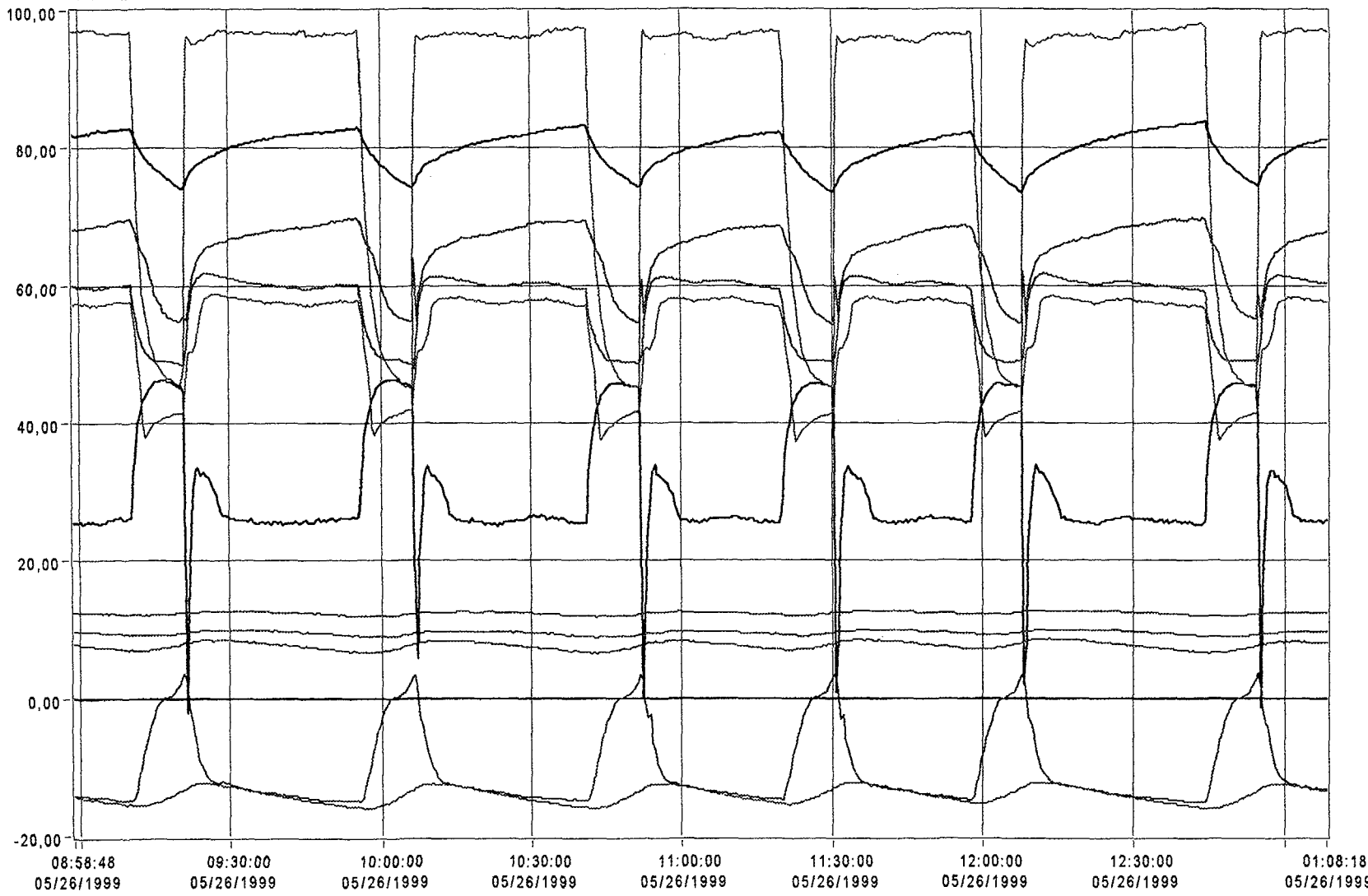
Descrizione DD300-43°C-Thermostat control-Pos1(00000008)

ID Posizione: CAMERA 2 POSIZIONE B

Sampling Time: 30

Inizio test: 26/05/1999 08.58.48

Fine test: 27/05/1999 08.38.43



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL : DD 300 (N°00000008) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	03/06/99		Compressor : GL 80 AN	
Ambient temperature	[°C]	38	Condenser : wires and tubes	
Refrigerant R 134a	[gr]	150		

Thermostat setting			7 / 7	3 / 7		2.5 / 7	
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-17.5	+3.5	-17.1	+3.4	-16.3
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+5.6	+9.6	+8.8	+10.4	+9.7
4	T 2 refrigerator temp.	[°C]	+1.8	+7.1	+5.6	+8.0	+7.0
5	T 3 refrigerator temp.	[°C]	-0.2	+5.8	+3.4	+6.8	+4.9
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-20.7	-13.8	-18.4	-13.4	-16.7
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	81.8	67.1	76.7	66.4	75.4
10	Condenser in temp.	[°C]	93.7	40.6	89.1	40.7	86.8
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	52.6	37.4	51.3	36.8	51.5
13	Oil cooler in temp.	[°C]	55.0	43.8	54.2	44.1	54.8
14	Oil cooler out temp.	[°C]	68.4	48.9	63.3	48.7	62.0
15	Suction pipe temp.	[°C]	23.5	40.2	23.6	40.5	24.1
	Refrig. temp. (Avr)	[°C]	+2.4	+6.7		+7.8	
	Freezer temp. (Avr)	[°C]	-20.7	-16.1		-15.0	
	Test Time	[h]	24	24		24	
	Running Time	[%]	100	73.3		65.1	
	Energy consumption	[Kwh/24h]		3.267		2.970	
	Voltage	[Volt]	220	220		220	
	Current	[A]	1.69	1.79	1.65	1.84	1.69
	Power	[Watt]	174	228	174	246	179

NOTE :



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DD300-38°C-Vuoto-Pos3(00000008).dat

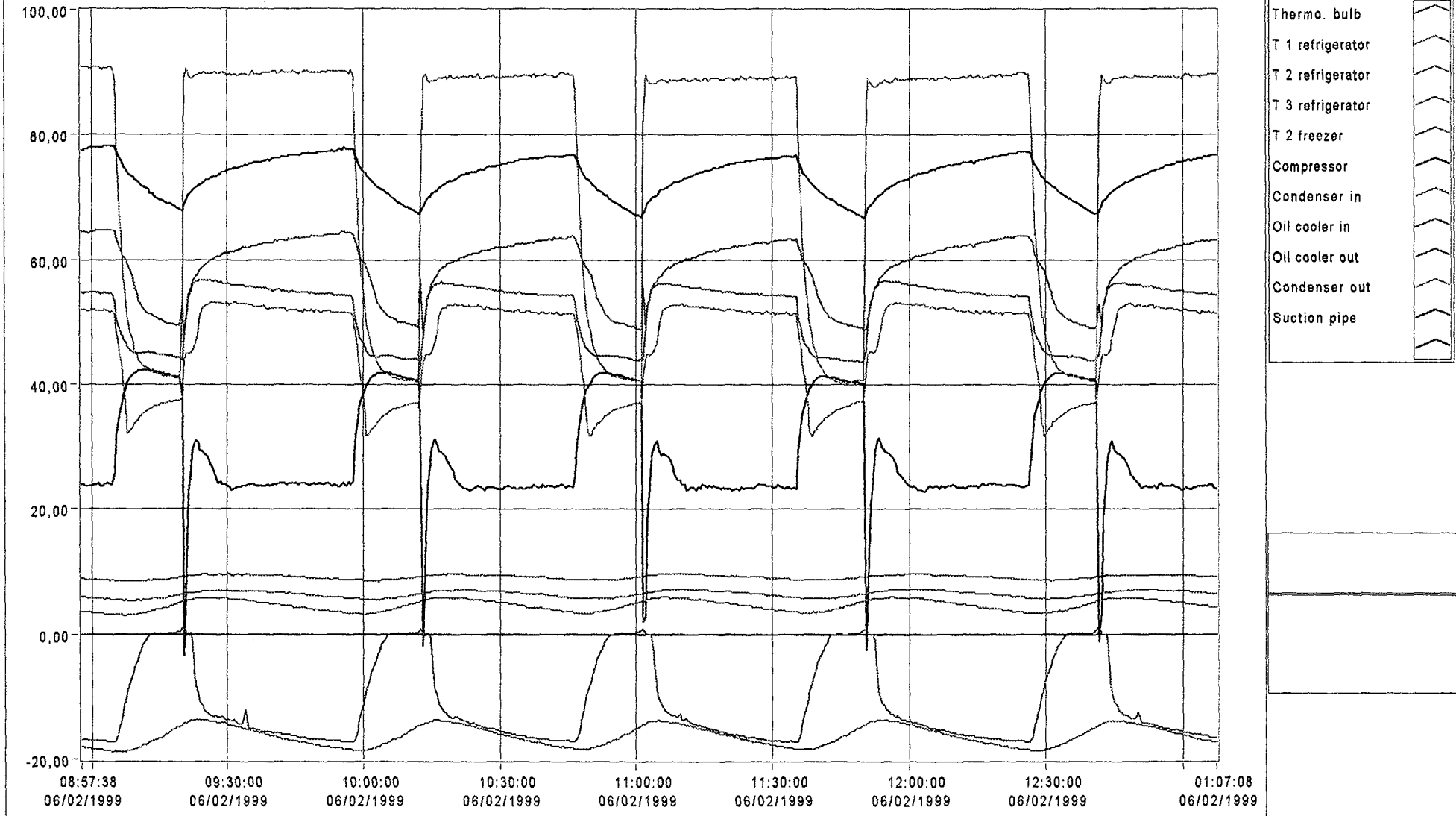
Descrizione DD300-38°C-Thermostat control-Pos3(00000008)

ID Posizione: CAMERA 2 POSIZIONE B

Sampling Time: 30

Inizio test: 02/06/1999 08.57.38

Fine test: 03/06/1999 08.45.35



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DD300-38°C-Vuoto-Pos2.5(00000008).dat

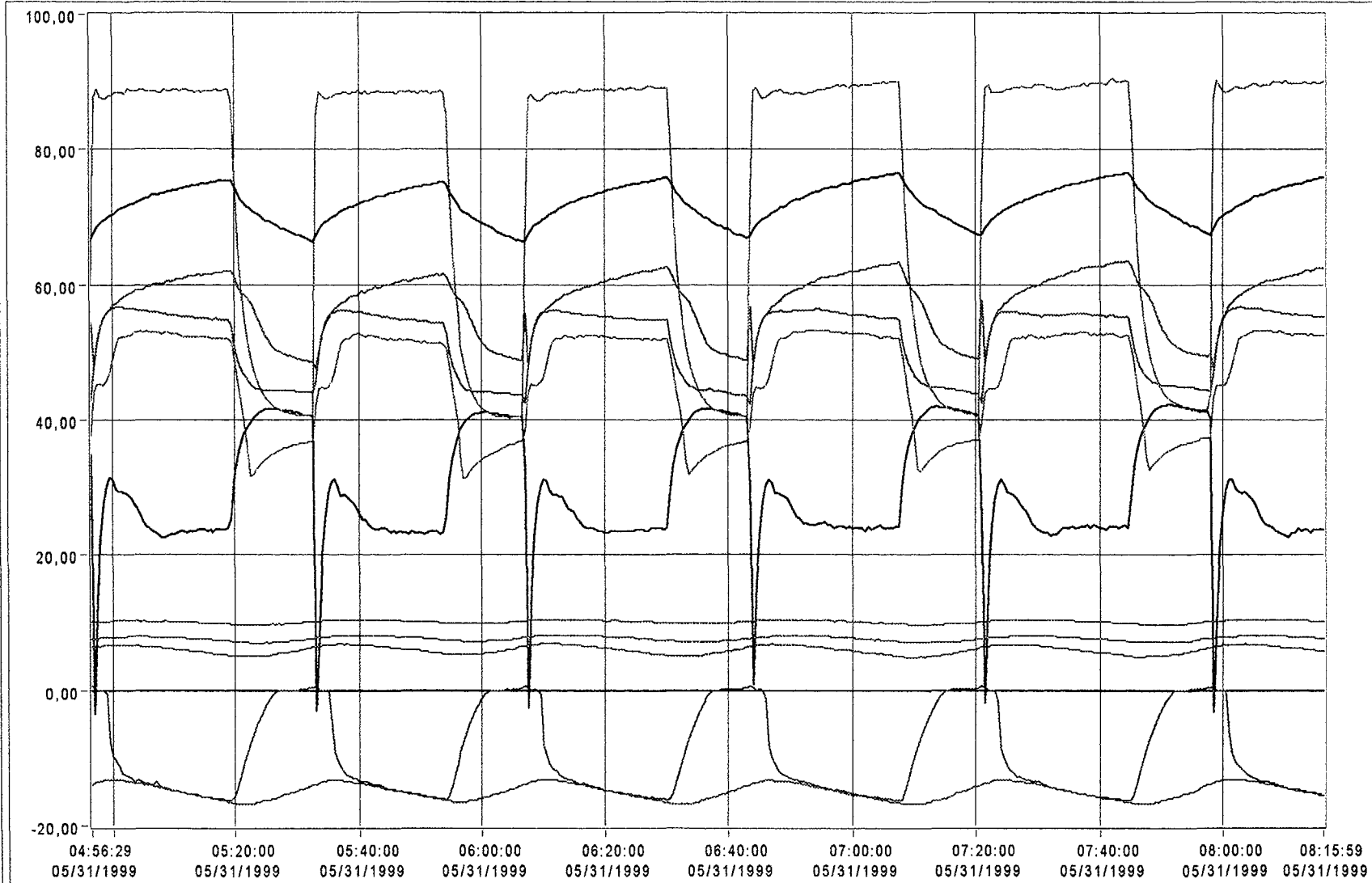
Descrizione DD300-38°C-Thermostat control-Pos2.5(00000008)

ID Posizione: CAMERA 2 POSIZIONE B

Sampling Time: 30

Inizio test: 31/05/1999 16.56.29

Fine test: 01/06/1999 08.45.45



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL : DD 300 (N°00000008) Class T

TYPE of TEST : LOADLESS RUNNING

Date	04/06/99	Compressor : GL 80 AN
Ambient temperature	[°C] 32	Condenser : wires and tubes
Refrigerant R 134a	[gr] 150	

Thermostat setting		7 / 7					
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-21.7				
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+0.9				
4	T 2 refrigerator temp.	[°C]	-2.7				
5	T 3 refrigerator temp.	[°C]	-4.7				
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-23.9				
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	75.9				
10	Condenser in temp.	[°C]	85.3				
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	45.6				
13	Oil cooler in temp.	[°C]	48.3				
14	Oil cooler out temp.	[°C]	62.0				
15	Suction pipe temp.	[°C]	20.2				
	Refrig. temp. (Avr)	[°C]	-2.2				
	Freezer temp. (Avr)	[°C]	-23.9				
	Test Time	[h]	24				
	Running Time	[%]	100				
	Energy consumption	[Kwh/24h]					
	Voltage	[Volt]	220				
	Current	[A]	1.66				
	Power	[Watt]	160				

NOTE :



WHIRLPOOL EUROPE

CABINET MODEL : DD 300 (N°00000008) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	14/06/99	Compressor : GL 80 AN
Ambient temperature	[°C] 25	Condenser : wires and tubes
Refrigerant R 134a	[gr] 150	

Thermostat setting			5 / 7		4 / 7			
T.C.			ON	OFF	ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	+3.4	-21.5	+3.4	-19.2		
2	Damper bulb temp.	[°C]						
3	T 1 refrigerator temp.	[°C]	+5.4	+4.0	+6.8	+6.0		
4	T 2 refrigerator temp.	[°C]	+4.1	+2.1	+5.6	+4.5		
5	T 3 refrigerator temp.	[°C]	+3.6	+0.1	+5.0	+2.9		
6	T 1 freezer temp.	[°C]						
7	T 2 freezer temp.	[°C]	-14.4	-20.5	-13.9	-17.7		
8	T 3 freezer temp.	[°C]						
9	Compressor temp.	[°C]	48.5	59.8	49.2	58.5		
10	Condenser in temp.	[°C]	29.0	67.9	28.6	67.4		
11	Condenser m.p. temp.	[°C]						
12	Condenser out temp.	[°C]	26.5	38.2	26.0	39.8		
13	Oil cooler in temp.	[°C]	31.5	41.7	31.4	43.4		
14	Oil cooler out temp.	[°C]	35.1	46.5	35.2	44.4		
15	Suction pipe temp.	[°C]	26.4	14.8	28.8	17.0		
	Refrig. temp. (Avr)	[°C]	+3.2		+5.1			
	Freezer temp. (Avr)	[°C]	-17.4		-15.8			
	Test Time	[h]	24		24			
	Running Time	[%]	47		39.7			
	Energy consumption	[Kwh/24h]	1.968		1.747			
	Voltage	[Volt]	220		220			
	Current	[A]	1.78	1.66	1.77	1.70		
	Power	[Watt]	230	162	211	170		

NOTE :



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DD300-25°C-Vuoto-Pos5(00000008).dat

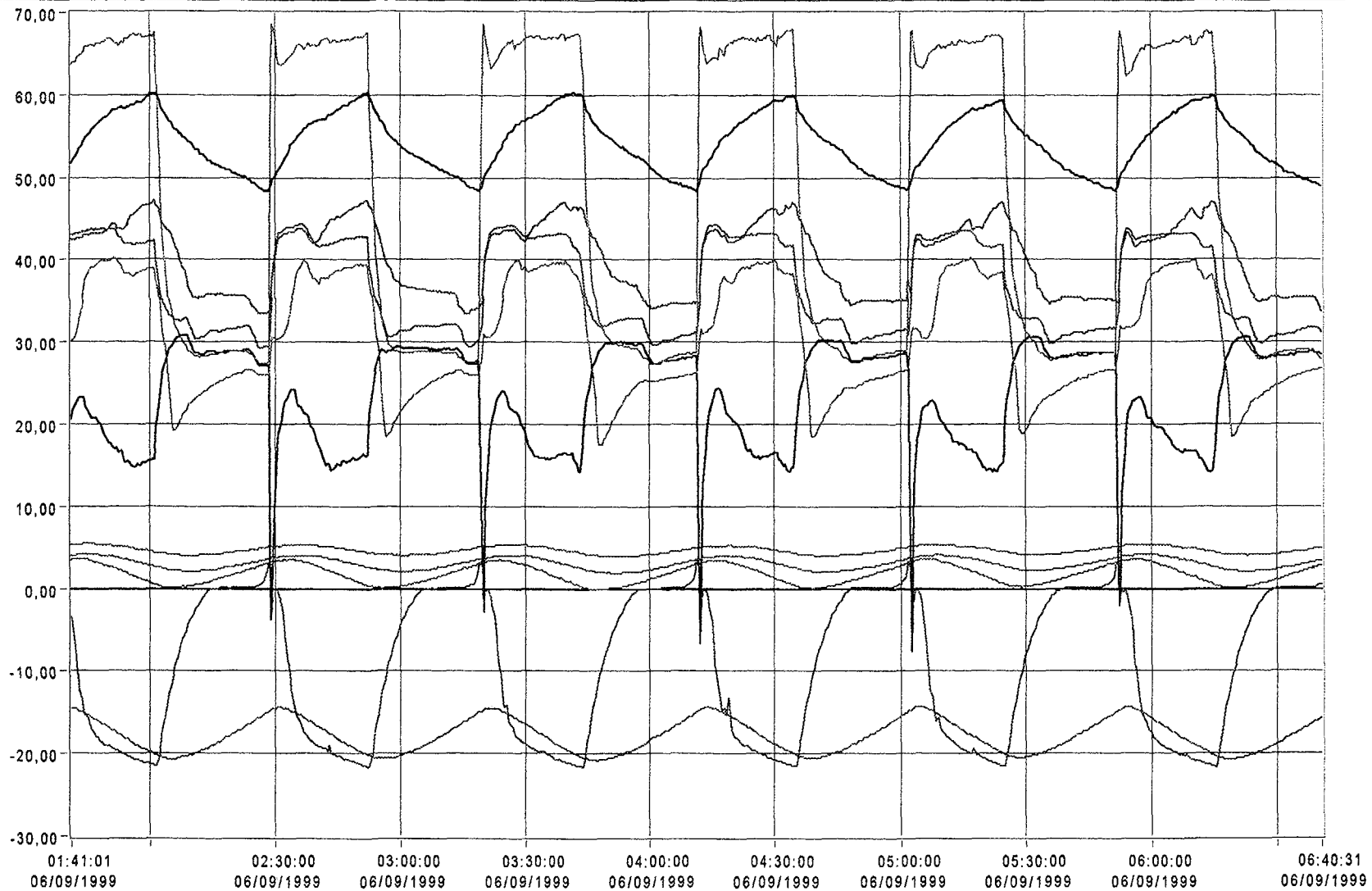
Descrizione DD300-25°C-Thermostat control-Pos5(00000008)

ID Posizione: CAMERA 2 POSIZIONE B

Sampling Time: 30

Inizio test: 09/06/1999 13.41.01

Fine test: 10/06/1999 08.44.53



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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DD300-25°C-Vuoto-Pos4(00000008).dat

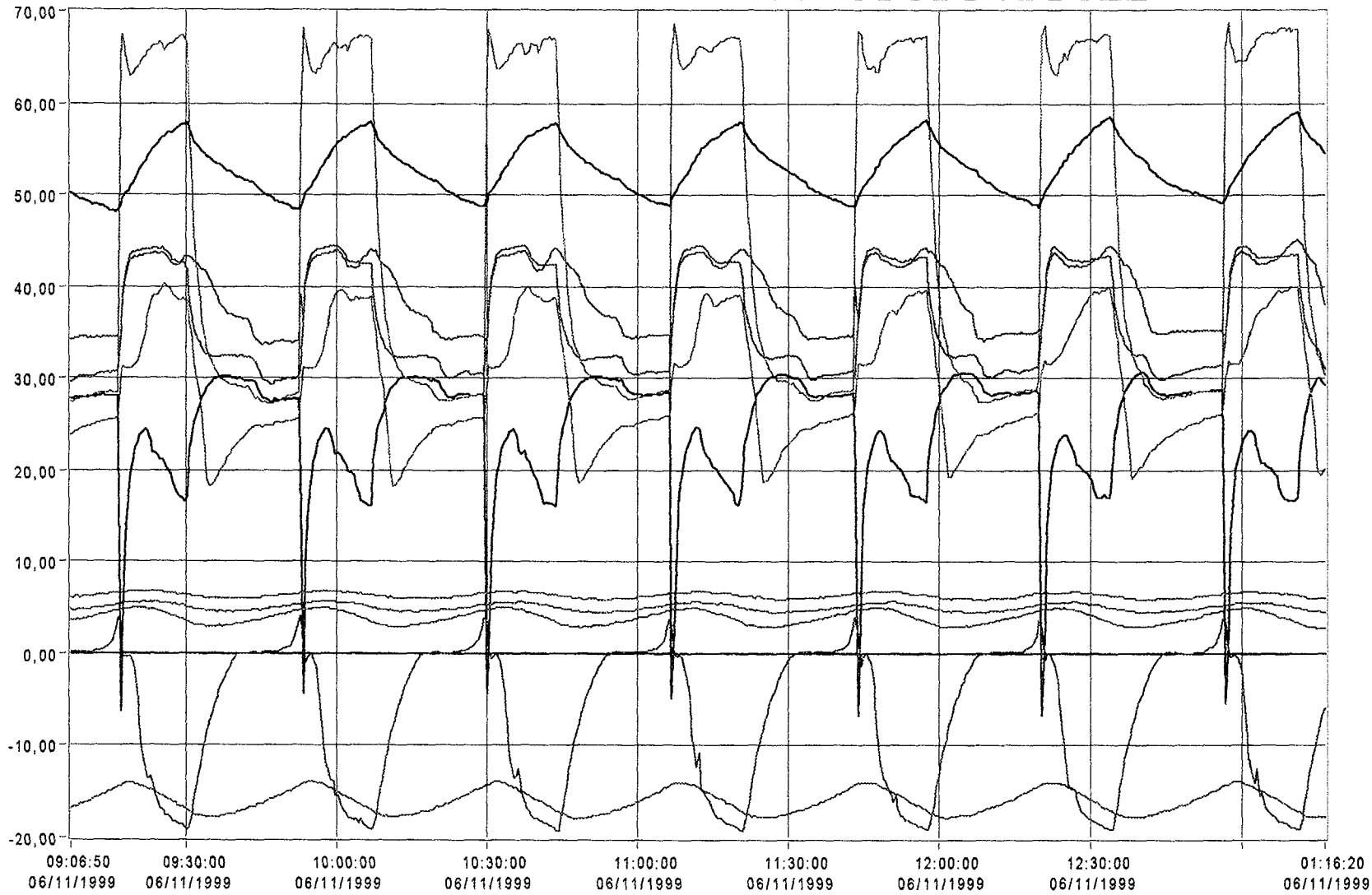
Descrizione DD300-25°C-Thermostat control-Pos4(00000008)

ID Posizione: CAMERA 2 POSIZIONE B

Sampling Time: 30

Inizio test: 11/06/1999 09.06.50

Fine test: 11/06/1999 17.29.29



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL : DD 300 (N°00000008) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	16/06/99	Compressor : GL 80 AN
Ambient temperature	[°C] 18	Condenser : wires and tubes
Refrigerant R 134a	[gr] 150	

T.C.	Thermostat setting		6 / 7		4 / 7		ON	OFF
			ON	OFF	ON	OFF		
1	Thermostat bulb temp.	[°C]	+3.5	-24.4	+3.8	-18.9		
2	Damper bulb temp.	[°C]						
3	T 1 refrigerator temp.	[°C]	+3.5	+1.6	+5.3	+4.8		
4	T 2 refrigerator temp.	[°C]	+3.1	+0.1	+5.0	+4.3		
5	T 3 refrigerator temp.	[°C]	+2.9	-1.9	+4.6	+3.3		
6	T 1 freezer temp.	[°C]						
7	T 2 freezer temp.	[°C]	-12.8	-22.4	-14.4	-17.6		
8	T 3 freezer temp.	[°C]						
9	Compressor temp.	[°C]	37.1	50.1	37.4	44.2		
10	Condenser in temp.	[°C]	20.4	56.2	21.0	54.5		
11	Condenser m.p. temp.	[°C]						
12	Condenser out temp.	[°C]	19.0	30.7	18.6	25.7		
13	Oil cooler in temp.	[°C]	21.3	35.0	22.0	35.1		
14	Oil cooler out temp.	[°C]	24.9	38.3	25.3	34.4		
15	Suction pipe temp.	[°C]	20.0	12.4	20.8	18.0		
	Refrig. temp. (Avr)	[°C]	+1.5		+3.7			
	Freezer temp. (Avr)	[°C]	-17.6		-16.0			
	Test Time	[h]	24		24			
	Running Time	[%]	35.6		27.5			
	Energy consumption	[Kwh/24h]	1.449		1.168			
	Voltage	[Volt]	220		220			
	Current	[A]	1.80	1.66	1.80	1.69		
	Power	[Watt]	230	157	224	169		

NOTE :



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DD300-18°C-Vuoto-Pos6(00000008).dat

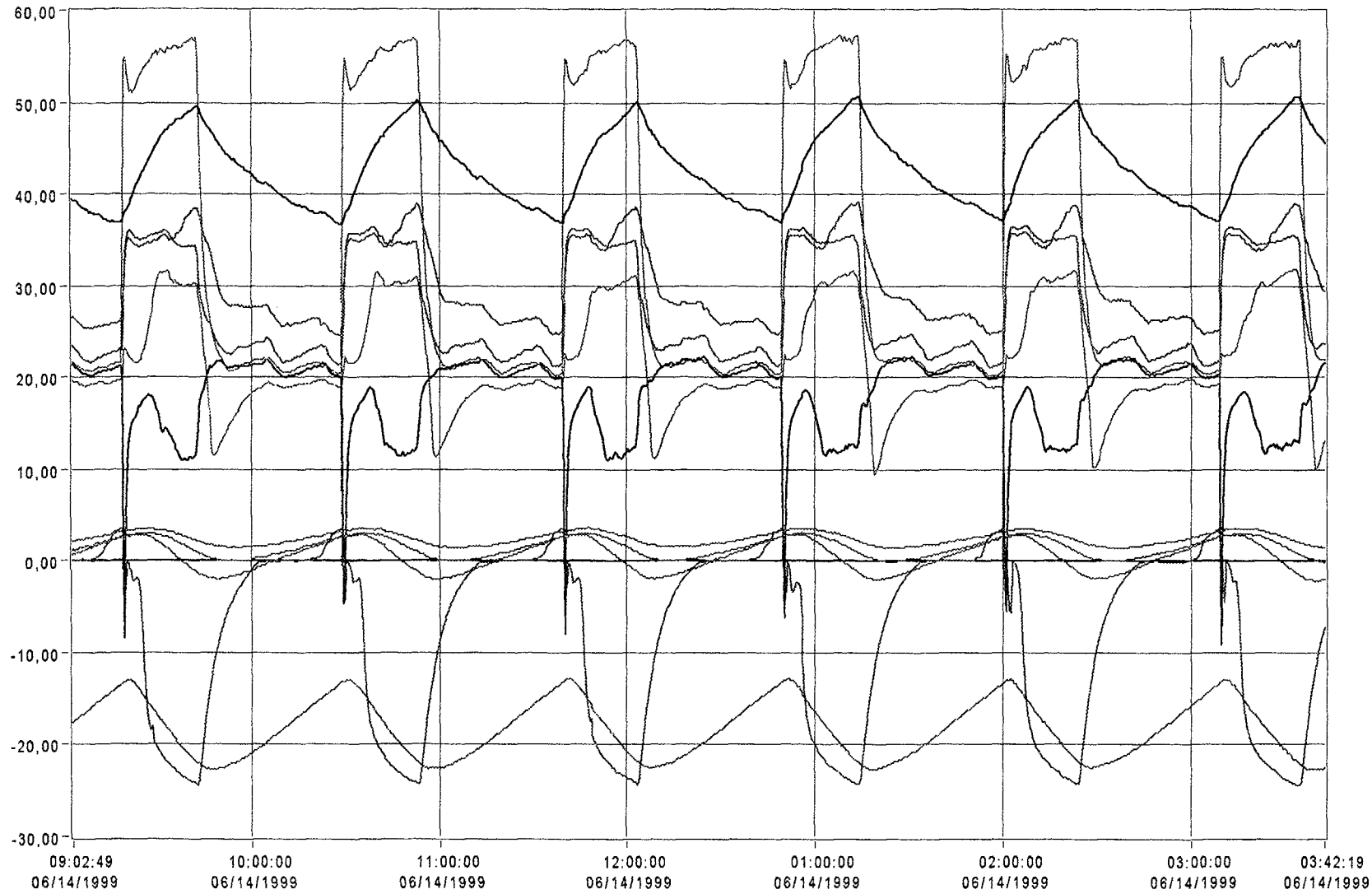
Descrizione DD300-18°C-Thermostat control -Pos6(00000008)

ID Posizione: CAMERA 2 POSIZIONE B

Sampling Time: 30

Inizio test: 14/06/1999 09.02.49

Fine test: 15/06/1999 08.33.19



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DD300-18°C-Vuoto-Pos4(00000008).dat

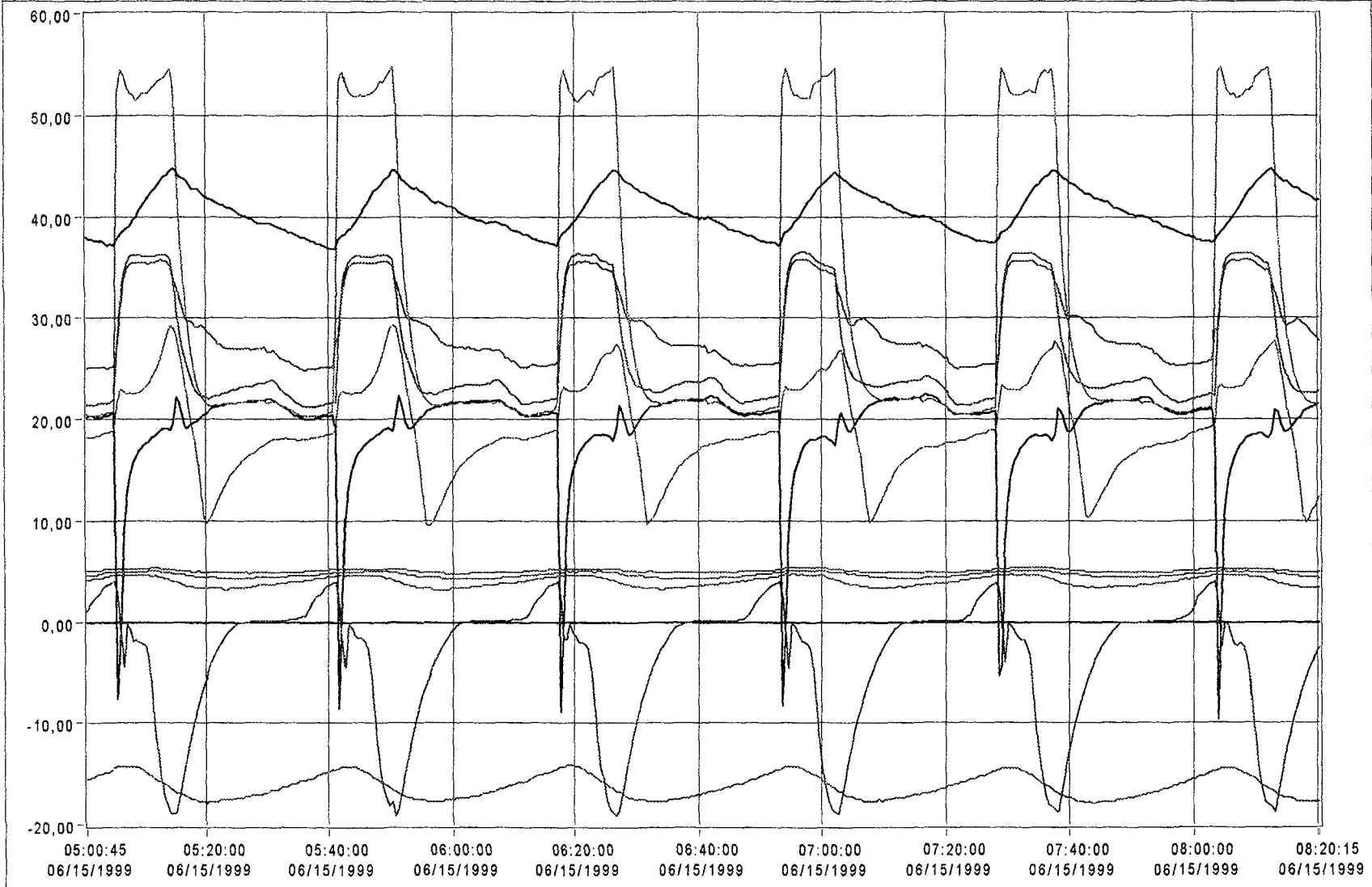
Descrizione DD300-18°C-Thermostat control-Pos4(00000008)

ID Posizione: CAMERA 2 POSIZIONE B

Sampling Time: 30

Inizio test: 15/06/1999 17.00.45

Fine test: 16/06/1999 08.39.35



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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CABINET MODEL :	DD 300 (N°00000008) Class T
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TYPE of TEST :	PULL DOWN
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Date	22/06/99	Compressor : GL 80 AN
Refrigerant R 134a	[gr] 150	Condenser : wires and tubes

Ambient temperature	[°C]	43	38
Thermostat setting		7 / 7	7 / 7
T.C.			
1 Thermostat bulb temp.	[°C]	-14.1	-16.8
2 Damper bulb temp.	[°C]		
3 T 1 refrigerator temp.	[°C]	+10.2	+6.0
4 T 2 refrigerator temp.	[°C]	+7.3	+2.1
5 T 3 refrigerator temp.	[°C]	+5.2	+1.1
6 T 1 freezer temp.	[°C]		
7 T 2 freezer temp.	[°C]	-18.2	-20.3
8 T 3 freezer temp.	[°C]		
9 Compressor temp.	[°C]	86.0	82.3
10 Condenser in temp.	[°C]	96.6	93.8
11 Condenser m.p. temp.	[°C]		
12 Condenser out temp.	[°C]	58.5	55.1
13 Oil cooler in temp.	[°C]	59.0	58.2
14 Oil cooler out temp.	[°C]	70.3	72.4
15 Suction pipe temp.	[°C]	24.0	23.8
Refrig. temp. (Avr)	[°C]	+7.6	+3.1
Freezer temp. (Avr)	[°C]	-18.2	-20.3
Test Time	[h]	6	6
Running Time	[%]	100	100
Energy consumption	[Kwh/24h]		
Voltage	[Volt]	220	220
Current	[A]	1.70	1.71
Power	[Watt]	186	184

NOTE :



WHIRLPOOL EUROPE

CABINET MODEL : DD 300 (N°00000008) Class T

TYPE of TEST : STORAGE TEST

Date	18/06/99		Compressor : GL 80 AN					
Storage load	[Kg]	24		Condenser : wires and tubes				
Refrigerant R 134a	[gr]	150						
Ambient temperature	[°C]	43		38		18		
Thermostat setting		2 / 7		3.5 / 7		4 / 7		
T.C.		ON	OFF	ON	OFF	ON	OFF	
1	Thermostat bulb temp.	[°C]	+4.5	-16.1	+4.3	-19.6	+4.0	-20.1
2	Damper bulb temp.	[°C]						
3	T 1 refrigerator temp.	[°C]	+11.3	+10.1	+9.0	+6.0	+5.1	+4.6
4	T 2 refrigerator temp.	[°C]	+7.8	+6.0	+5.5	+2.0	+4.9	+4.2
5	T 3 refrigerator temp.	[°C]	+5.7	+2.7	+4.7	+0.1	+4.5	+3.2
6	T package 1	[°C]	-15.7	-15.9	-18.3	-18.8	-23.0	-23.5
7	T package 2	[°C]	-14.9	-15.3	-17.2	-18.0	-22.3	-23.2
8	T package 3	[°C]	-17.5	-17.8	-20.1	-20.9	-25.0	-25.9
9	T package 4	[°C]	-17.8	-18.3	-20.6	-21.6	-25.6	-26.8
10	T package 5	[°C]						
11	T package 6	[°C]						
12	Compressor temp.	[°C]	76.8	85.2	67.2	79.4	37.4	44.6
13	Condenser in temp.	[°C]	46.2	99.1	41.0	91.0	22.1	55.2
14	Condenser out temp.	[°C]	44.7	55.4	42.4	48.5	20.0	26.2
15	Suction pipe temp.	[°C]	45.7	33.1	40.8	23.9	20.9	18.3
	Refrig. temp. (Avr)	[°C]	+7.3		+4.5		+4.4	
	Warmer package	[°C]	-14.9		-17.2		-22.3	
	Average of packages	[°C]	-16.6		-19.4		-24.4	
	Test Time	[h]	24		24		24	
	Running Time	[%]	83.2		81.4		39.3	
	Energy consumption	[Kwh/24h]	3.924		3.485		1.690	
	Voltage	[Volt]	220		220		220	
	Current	[A]	1.86	1.74	1.79	1.65	1.81	1.70
	Power	[Watt]	255	195	235	177	224	169

NOTE :



WHIRLPOOL EUROPE

CABINET MODEL : DD 300 (N°00000008) Class T

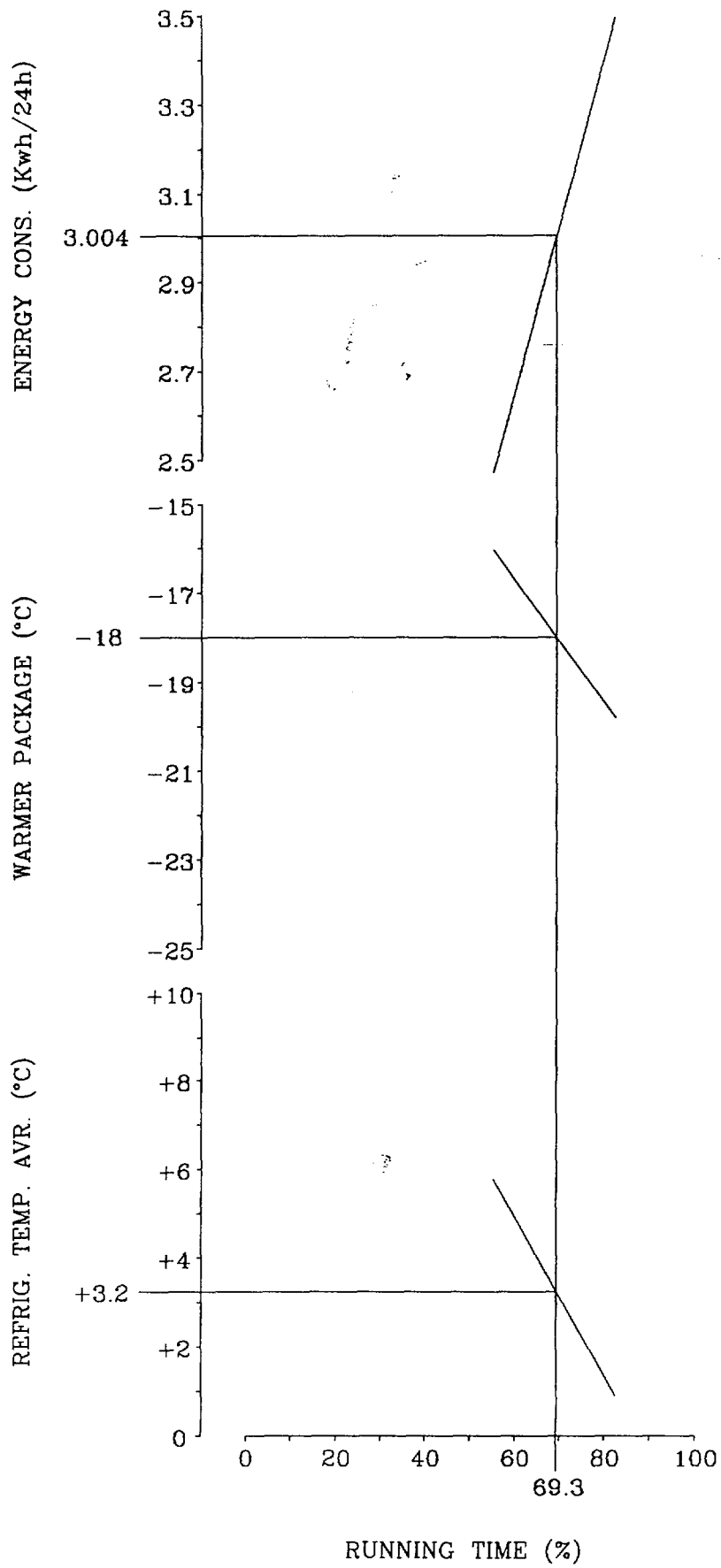
TYPE of TEST : ENERGY CONSUMPTION

Date	21/06/99		Compressor : GL 80 AN
Ambient temperature	[°C]	32	Condenser : wires and tubes
Storage load	[Kg]	24	
Refrigerant R 134a	[gr]	150	

Thermostat setting		5 / 7		4 / 7		
T.C.		ON	OFF	ON	OFF	
1	Thermostat bulb temp. [°C]	+4.2	-21.8	+4.3	-20.1	
2	Damper bulb temp. [°C]					
3	T 1 refrigerator temp. [°C]	+5.6	+1.8	+7.8	+6.8	
4	T 2 refrigerator temp. [°C]	+3.2	-2.0	+6.0	+4.6	
5	T 3 refrigerator temp. [°C]	+1.9	-5.1	+4.7	+1.6	
6	T package 1 [°C]	-20.2	-21.4	-17.2	-17.4	
7	T package 2 [°C]	-19.8	-21.1	-16.5	-17.0	
8	T package 3 [°C]	-23.5	-23.7	-19.8	-20.0	
9	T package 4 [°C]	-23.1	-24.3	-20.1	-20.7	
10	T package 5 [°C]					
11	T package 6 [°C]					
12	Compressor temp. [°C]	61.8	73.8	59.5	67.1	
13	Condenser in temp. [°C]	36.1	86.9	57.4	82.2	
14	Condenser out temp. [°C]	34.9	38.8	32.9	39.5	
15	Suction pipe temp. [°C]	35.0	22.9	35.6	24.7	Interpolated
						at -18 [°C]
	Refrig. temp. (Avr) [°C]	+0.9		+5.2		+3.2
	Warmer package [°C]	-19.8		-16.5		-18.0
	Average of packages [°C]	-22.1		-18.6		
	Test Time [h]	24		24		
	Running Time [%]	82.4		58.3		69.3
	Energy consumption [Kwh/24h]	3.495		2.595		3.004
	Voltage [Volt]	220		220		
	Current [A]	1.80	1.66	1.80	1.68	
	Power [Watt]	221	172	238	179	

NOTE :

DD 300
ENERGY CONSUMPTION (with load) AT 32°C





WHIRLPOOL EUROPE

CABINET MODEL : DD 300 (N°00000008) Class T

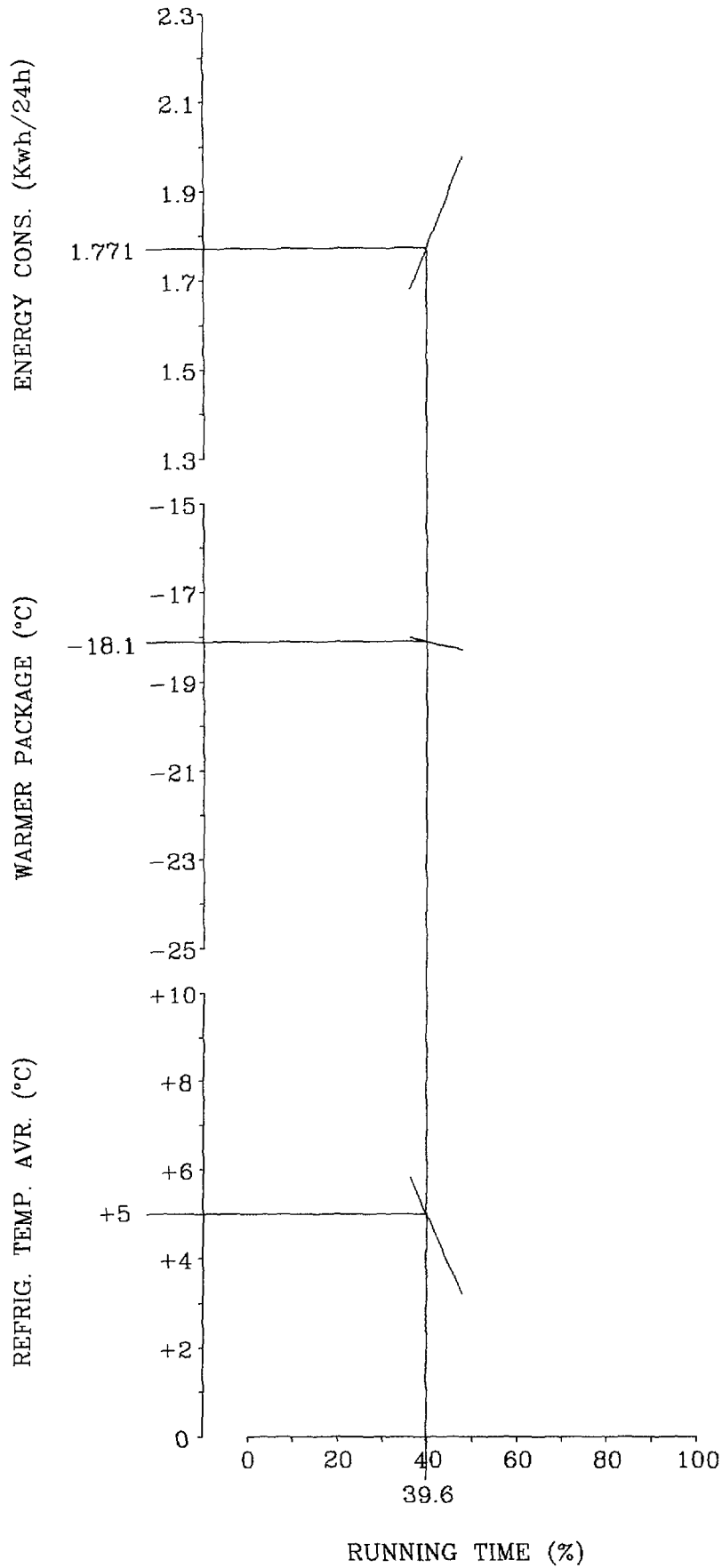
TYPE of TEST : ENERGY CONSUMPTION

Date	21/06/99		Compressor : GL 80 AN
Ambient temperature	[°C]	25	Condenser : wires and tubes
Storage load	[Kg]	24	
Refrigerant R 134a	[gr]	150	

Thermostat setting		5 / 7		4 / 7		
T.C.		ON	OFF	ON	OFF	
1	Thermostat bulb temp. [°C]	+4.1	-21.5	+4.0	-19.2	
2	Damper bulb temp. [°C]					
3	T 1 refrigerator temp. [°C]	+5.4	+4.4	+6.8	+6.0	
4	T 2 refrigerator temp. [°C]	+4.1	+2.1	+5.6	+4.5	
5	T 3 refrigerator temp. [°C]	+3.6	+0.1	+5.0	+2.9	
6	T package 1 [°C]	-19.2	-19.4	-19.0	-19.1	
7	T package 2 [°C]	-18.3	-18.9	-18.1	-18.7	
8	T package 3 [°C]	-21.6	-22.2	-21.5	-21.8	
9	T package 4 [°C]	-22.0	-22.6	-22.1	-22.4	
10	T package 5 [°C]					
11	T package 6 [°C]					
12	Compressor temp. [°C]	49.3	60.5	49.6	58.3	
13	Condenser in temp. [°C]	29.5	68.0	28.9	67.8	
14	Condenser out temp. [°C]	26.7	38.4	26.1	40.0	
15	Suction pipe temp. [°C]	25.8	15.4	27.9	17.3	Interpolated
						at +5[°C]
	Refrig. temp. (Avr) [°C]	+3.2		+5.1		+5.0
	Warmer package [°C]	-18.3		-18.1		-18.1
	Average of packages [°C]	-20.5		-20.3		
	Test Time [h]	24		24		
	Running Time [%]	47.5		39.2		39.6
	Energy consumption [Kwh/24h]	1.975		1.760		1.771
	Voltage [Volt]	220		220		
	Current [A]	1.76	1.68	1.77	1.71	
	Power [Watt]	224	163	214	165	

NOTE :

DD 300
ENERGY CONSUMPTION (with load) AT 25°C





WHIRLPOOL EUROPE

CABINET MODEL : DD 300 (N°00000008) Class T

TYPE of TEST : ELECTRICAL TEST (low starting voltage)

Date	23/06/99	
Ambient temperature	[°C]	43
Refrigerant R 134a	[gr]	150
Compressor : GL 80 AN		
Condenser : wires and tubes		

		Pull down min	
1	Thermostat bulb temp.	[°C]	-15.2
2	T 1 refrigerator temp.	[°C]	+9.6
3	T 2 refrigerator temp.	[°C]	+5.8
4	T 3 refrigerator temp.	[°C]	+0.2
5	T 1 freezer temp.	[°C]	
6	T 2 freezer temp.	[°C]	-19.7
7	T 3 freezer temp.	[°C]	
8	Compressor temp.	[°C]	80.0
9	Condenser in temp.	[°C]	91.3
10	Condenser out temp.	[°C]	53.9
11	Oil cooler in temp.	[°C]	59.1
12	Oil cooler out temp.	[°C]	68.2
13	Suction pipe temp.	[°C]	27.2
Refrig. temp. (Avr)		[°C]	+5.2
Freezer temp. (Avr)		[°C]	-19.7
Test Time		[h]	6
Voltage		[Volt]	187
Frequency		[Hz]	50
Current		[A]	1.53
Power		[Watt]	169

Lower starting voltage test at 43°C : 142 Volts

NOTE :



WHIRLPOOL EUROPE

CABINET MODEL :	DD 300 (N°00000008) Class T
-----------------	-----------------------------

TYPE of TEST :	ELECTRICAL TEST (low starting voltage)
----------------	--

Date	23/06/99	
Ambient temperature	[°C]	38
Refrigerant R 134a	[gr]	150
Compressor : GL 80 AN		
Condenser : wires and tubes		

			Pull down min	
1	Thermostat bulb temp.	[°C]	-16.6	
2	T 1 refrigerator temp.	[°C]	+5.6	
3	T 2 refrigerator temp.	[°C]	+1.5	
4	T 3 refrigerator temp.	[°C]	+1.0	
5	T 1 freezer temp.	[°C]		
6	T 2 freezer temp.	[°C]	-20.0	
7	T 3 freezer temp.	[°C]		
8	Compressor temp.	[°C]	77.8	
9	Condenser in temp.	[°C]	86.9	
10	Condenser out temp.	[°C]	53.8	
11	Oil cooler in temp.	[°C]	58.1	
12	Oil cooler out temp.	[°C]	65.4	
13	Suction pipe temp.	[°C]	24.0	
	Refrig. temp. (Avr)	[°C]	+2.7	
	Freezer temp. (Avr)	[°C]	-20.0	
	Test Time	[h]	6	
	Voltage	[Volt]	187	
	Frequency	[Hz]	50	
	Current	[A]	1.67	
	Power	[Watt]	182	

Lower starting voltage test at 38°C : 162 Volts

NOTE :

22210-2



PERFORMANCES TESTS

MODEL

WHIRLPOOL-NEEASAE

DD300 - N° 00000009

DD300 - N° 00000009 - Class T

TABLES CONTAINS

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LOADLESS RUNNING AT 32°C	Page 4
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ELECTRICAL TESTS AT 43°C :	Page 11
PULL DOWN MIN (187V)	
LOW STARTING VOLTAGE	
ELECTRICAL TESTS AT 38°C :	Page 12
PULL DOWN MIN (187V)	
LOW STARTING VOLTAGE	



WHIRLPOOL EUROPE

APPLIANCE: DD300		UNITS	R 12	R 134a
REFRIGERANT	Charge	[gr]	140	150
STRUCTURE	H x W x D	[mm]	1510x550x600	1510x550x600
	Ref.gross volume	[litres]	221(aluminium inner liner)	221(aluminium inner liner)
	frz.gross volume	[litres]	50(aluminium inner liner)	50(aluminium inner liner)
	TOTAL GROSS	[litres]	271	271
	Ref.net volume	[litres]	209	209
	frz.net volume	[litres]	50	50
	TOTAL NET	[litres]	259	259
	ADJUSTED	[litres]		
COMPRESSOR	Model	name	Embraco B3116B	Zanussi GL 80 AN
	Capacity Ashrae	[kcal/h]	147	182
	C.O.P.	[kcal/Wh]		0.989
DISCHARGE	Lenght of pipe	[mm]		
	Diam.(e)/Diam.(i)	[mm]		
CONDENSER	Type	name	Wires and tubes(double)	Wires and tubes(double)
	Width	[mm]	460-460	460-460
	Height	[mm]	390-740	390-740
	Area (1 face)	[m ²]		
	Number of pipe		7-16	7-16
	Lenght of pipe	[m]		
	Diam.(e)/Diam.(i)	[mm]	4.76/3.36	4.76/3.36
	Volume	[litres]		
FILTER	Weight	[grams]	9	9
CAPILLARY	N2 flow rate	[l/min]	6.9	6.0
	Lenght	[mm]	2600	3500
	Inside diameter	[mm]	0.70	0.70
REFRIGERATOR EVAPORATOR	Type	name	Foamed in(aluminium coil)	Foamed in(aluminium coil)
	Width	[mm]	350	350
	Height	[mm]	400	400
	Area (1 face)	[m ²]		
	Number of pipe		9	9
	Lenght of pipe	[m]		
	Diam.(e)/Diam.(i)	[mm]	7.4/6(pressed 10.5)	7.4/6(pressed 10.5)
	Volume	[litres]		
FREEZER EVAPORATOR	Type	name	Foamed in(alum.coil 5 faces)	Foamed in(alum.coil 5 faces)
	Width	[mm]	Rear445-sides372.5-upper400-lower400	Rear445-sides372.5-upper400-lower400
	Height	[mm]	263.5-250/150-300-250	263.5-250/150-300-250
	Area (1 face)	[m ²]		
	Number of pipe		4-5-7-5	4-5-7-5
	Lenght of pipe	[m]		
	Diam.(e)/Diam.(i)	[mm]	7.4/6(pressed 10.5)	7.4/6(pressed 10.5)
	Volume	[litres]		
THERMOSTAT	Type		Atea A13 0057 (-13/+4.5 -26/+4.5)	Atea A13 0057 (-13/+4.5 -26/+4.5)
TYPE CIRCUIT			C13	C13



WHIRLPOOL EUROPE

CABINET MODEL : **DD 300 (N°00000009) Class T**

TYPE of TEST : **CHARGE DETERMINATION**

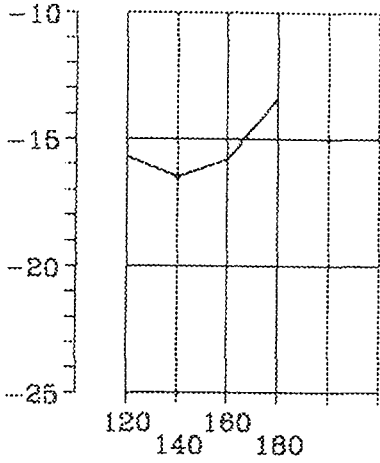
Date	18/02/99	Compressor : GL 80 AN
Ambient temperature	[°C] 43	Condenser : wires and tubes
Refrigerant R 134a	[gr] 150	

T.C.	Charge	[gr]	120	140	160	180
	Thermostat setting		MAX			
1	Thermostat bulb temp.	[°C]	-15.7	-16.5	-15.8	-13.4
2	Damper bulb temp.	[°C]				
3	T 1 refrigerator temp.	[°C]	+10.9	+9.8	+10.0	+10.7
4	T 2 refrigerator temp.	[°C]	+8.2	+5.8	+5.9	+6.7
5	T 3 refrigerator temp.	[°C]	+5.8	+2.6	+2.9	+3.8
6	T 1 freezer temp.	[°C]				
7	T 2 freezer temp.	[°C]	-19.3	-18.0	-17.3	-16.0
8	T 3 freezer temp.	[°C]				
9	Compressor temp.	[°C]	91.5	90.3	88.8	86.2
10	Condenser in temp.	[°C]	106.6	105.4	104.9	104.3
11	Condenser m.p. temp.	[°C]				
12	Condenser out temp.	[°C]	59.0	59.9	60.1	60.6
13	Oil cooler in temp.	[°C]	61.4	62.6	62.6	62.2
14	Oil cooler out temp.	[°C]	81.6	80.5	79.2	76.5
15	Suction pipe temp.	[°C]	42.7	38.7	32.9	22.3
	Refrig. temp. (Avr)	[°C]	+8.3	+6.1	+6.3	+7.1
	Freezer temp. (Avr)	[°C]	-19.3	-18.0	-17.3	-16.0
	Test Time	[h]	24	24	24	24
	Running Time	[%]	100	100	100	100
	Voltage	[Volt]	220	220	220	220
	Current	[A]	1.67	1.70	1.71	1.74
	Power	[Watt]	183	191	197	207

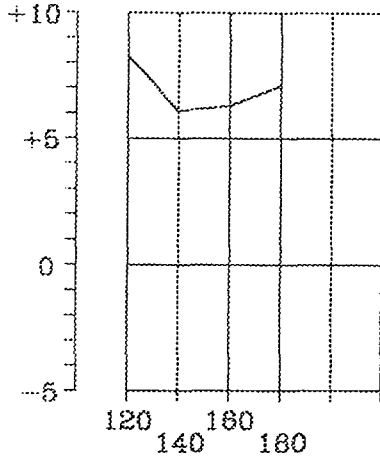
NOTE :

DD 300 Class T
 Charge determination R 134a at 43°C

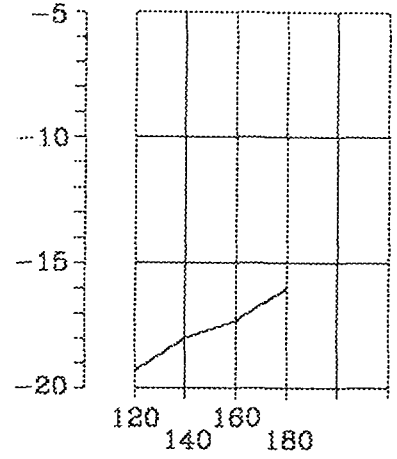
Thermostat



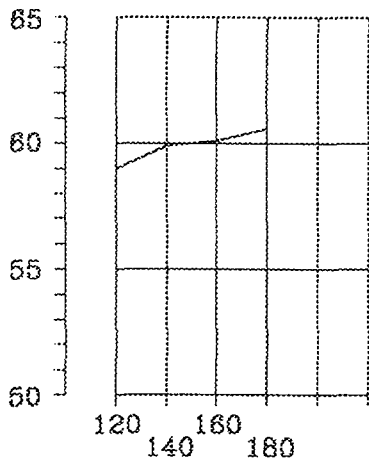
Average refr.



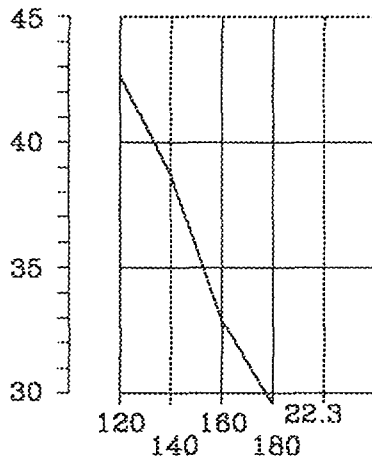
Average freez.



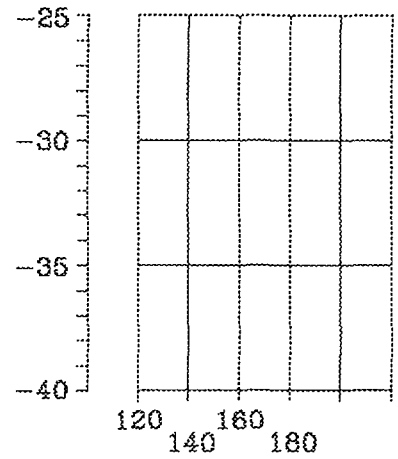
T. condens.



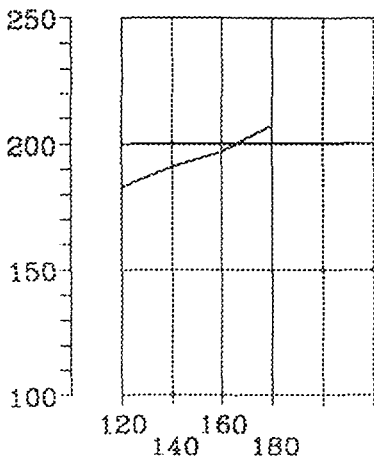
T. suction pipe



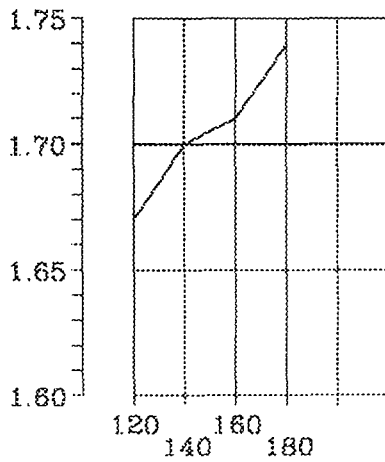
T. suction



Power



Current





WHIRLPOOL EUROPE

CABINET MODEL : **DD 300 (N°00000009) Class T**TYPE of TEST : **THERMOSTAT CONTROL**

Date	18/02/99	Compressor : GL 80 AN
Ambient temperature	[°C] 43	Condenser : wires and tubes
Refrigerant R 134a	[gr] 150	

Thermostat setting			7 / 7	2.5 / 7		1.5 / 7	
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-16.7	+4.5	-16.2	+4.1	-13.9
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+8.9	+11.5	+10.3	+13.9	+13.5
4	T 2 refrigerator temp.	[°C]	+4.6	+7.9	+6.1	+10.8	+10.4
5	T 3 refrigerator temp.	[°C]	+1.4	+5.7	+2.7	+8.6	+7.3
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-17.7	-12.3	-16.9	-10.6	-12.3
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	86.4	76.8	85.7	75.4	79.5
10	Condenser in temp.	[°C]	103.1	48.0	102.1	47.6	97.6
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	58.0	45.7	59.1	44.7	58.2
13	Oil cooler in temp.	[°C]	60.2	54.3	61.3	53.5	61.0
14	Oil cooler out temp.	[°C]	76.1	59.5	75.9	58.3	69.5
15	Suction pipe temp.	[°C]	31.3	46.6	33.0	46.5	32.1
	Refrig. temp. (Avr)	[°C]	+5.0	+7.4		+10.7	
	Freezer temp. (Avr)	[°C]	-17.7	-14.6		-11.4	
	Test Time	[h]	24	24		24	
	Running Time	[%]	100	84.3		64.7	
	Energy consumption	[Kwh/24h]		4.054		3.253	
	Voltage	[Volt]	220	220		220	
	Current	[A]	1.71	1.87	1.74	1.87	1.79
	Power	[Watt]	194	260	197	244	209

NOTE :



CA.GI.

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Whirlpool\Necessae1

Description:
DD300-43°C-Vuoto-Pos2.5(00000009)

ID Chamber: Chamber 1
Position A

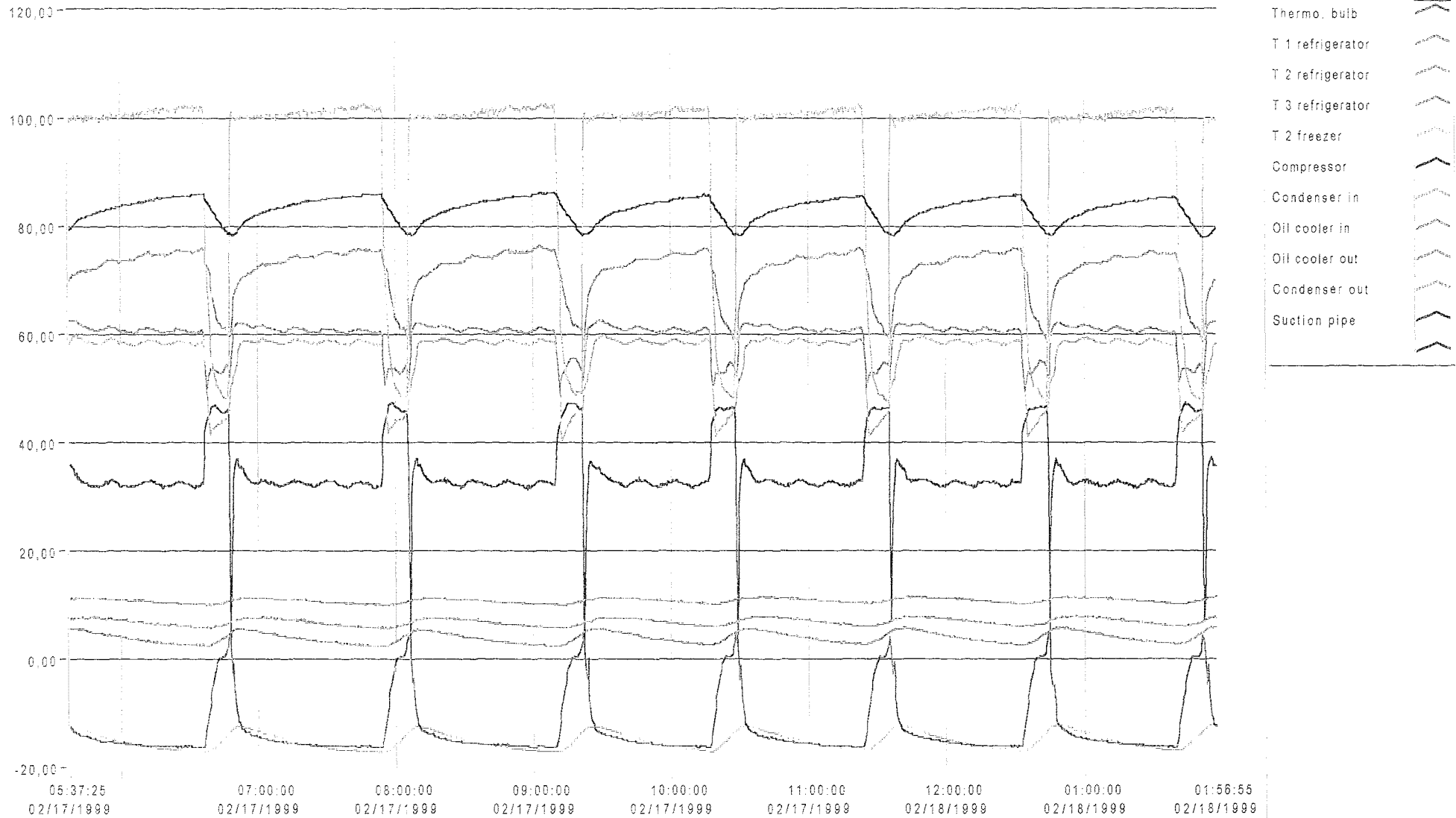
Sampling
Time(sec): 30

Test Start: 17/02/1999
17.37.25

Test Stop: 18/02/1999
08.33.17



appliances engineering





CA.GI.

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Description: DD300-43°C-Vuoto-Pos1.5(00000009)

ID Chamber: Chamber 1
Position A

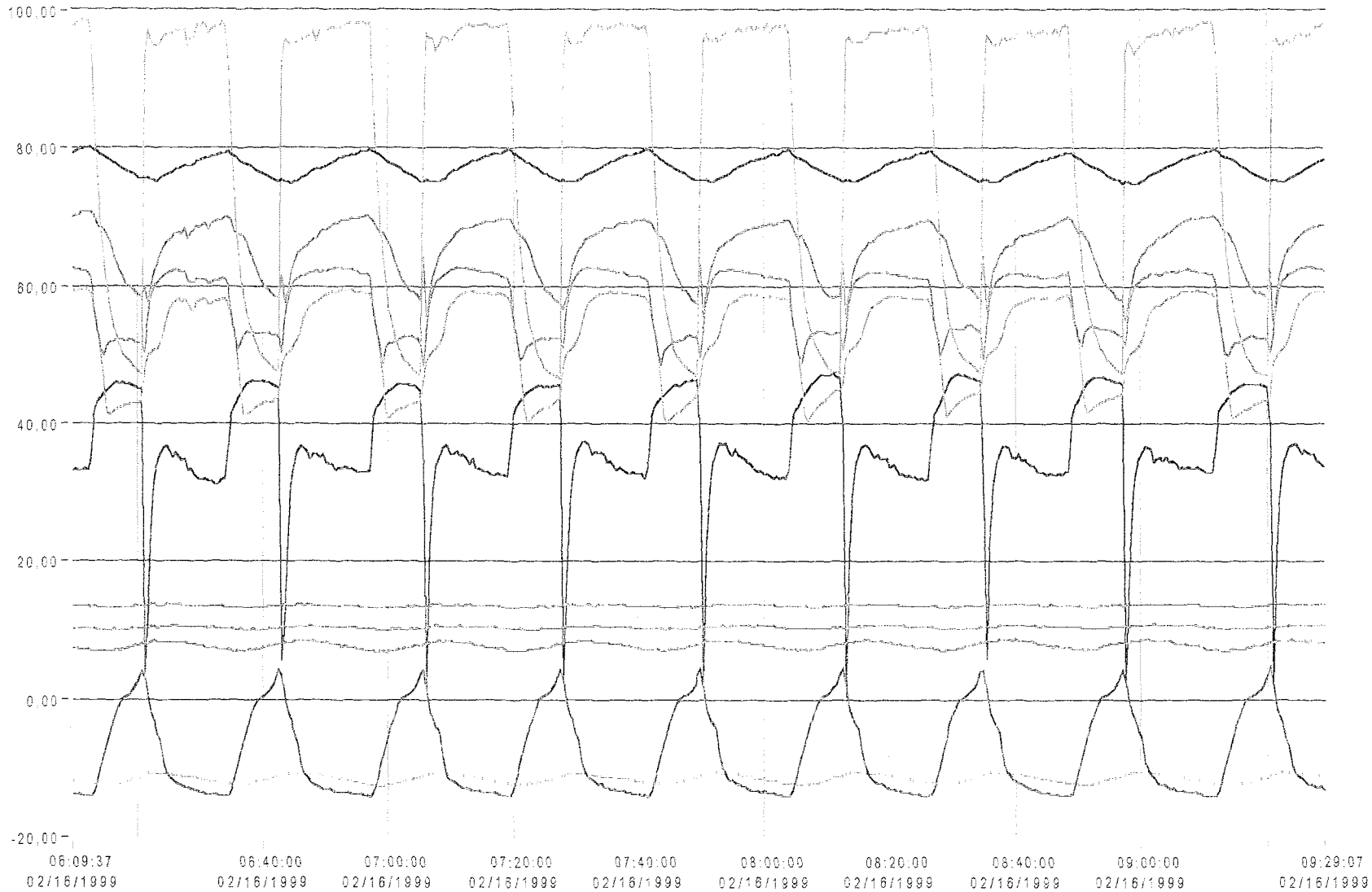
Sampling
Time(sec): 30

Test Start: 16/02/1999
18.09.37

Test Stop: 17/02/1999
08.30.30



appliances engineering





WHIRLPOOL EUROPE

CABINET MODEL : DD 300 (N°00000009) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	10/03/99		Compressor : GL 80 AN
Ambient temperature	[°C]	38	Condenser : wires and tubes
Refrigerant R 134a	[gr]	150	

Thermostat setting			7 / 7	3.5 / 7		3 / 7	
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-18.8	+4.0	-18.5	+4.6	-17.5
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+5.2	+9.4	+7.9	+10.4	+9.5
4	T 2 refrigerator temp.	[°C]	+1.2	+6.4	+4.4	+7.7	+6.3
5	T 3 refrigerator temp.	[°C]	-1.8	+4.9	+1.4	+6.1	+2.9
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-21.3	-14.6	-19.6	-14.5	-18.1
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	81.6	70.1	77.5	70.2	77.4
10	Condenser in temp.	[°C]	96.5	41.8	92.5	41.4	93.6
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	48.2	39.9	46.8	38.3	47.4
13	Oil cooler in temp.	[°C]	56.8	48.5	56.5	47.5	52.7
14	Oil cooler out temp.	[°C]	71.0	53.0	66.7	52.6	66.5
15	Suction pipe temp.	[°C]	28.6	41.3	28.5	40.7	28.8
	Refrig. temp. (Avr)	[°C]	+1.5	+5.7		+7.1	
	Freezer temp. (Avr)	[°C]	-21.3	-17.1		-16.3	
	Test Time	[h]	24	24		24	
	Running Time	[%]	100	75.9		69.1	
	Energy consumption	[Kwh/24h]		3.500		3.265	
	Voltage	[Volt]	220	220		220	
	Current	[A]	1.73	2.23	1.69	1.84	1.71
	Power	[Watt]	185	253	185	246	190

NOTE :



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Whirlpool\Neeasael

Description: DD300-38°C-Thermostat
control-Pos3.5(00000009)



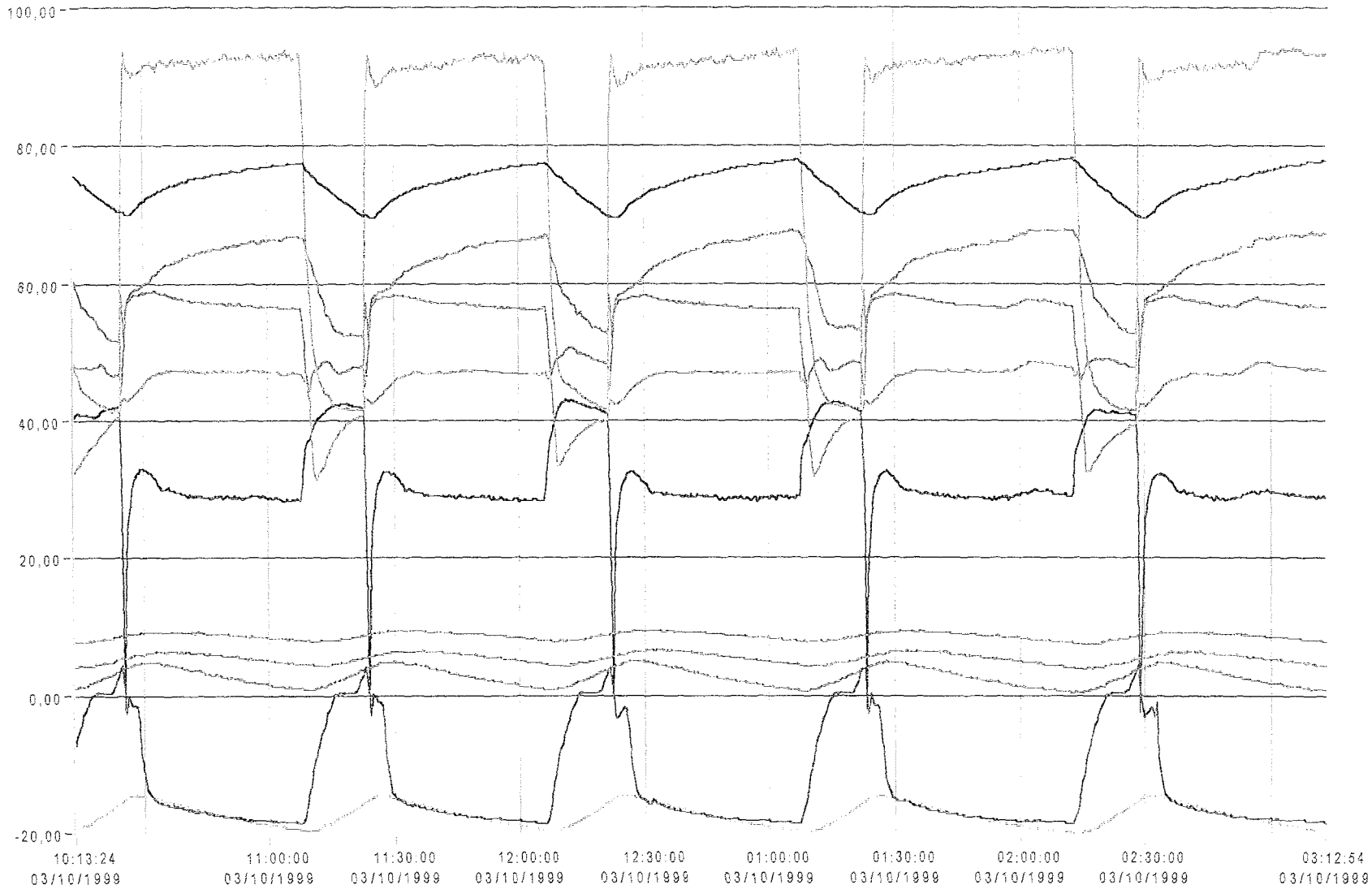
appliances engineering

ID Chamber: Chamber 1
Position A

Sampling
Time(sec): 30

Test Start: 10/03/1999
10.13.24

Test Stop: 10/03/1999
16.06.21



- Thermo bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe



CA.GI.

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Whirlpool\Neeasael

Description: DD300-38°C-Thermostat
control-Pos3(00000009)

ID Chamber: Chamber 1
Position A

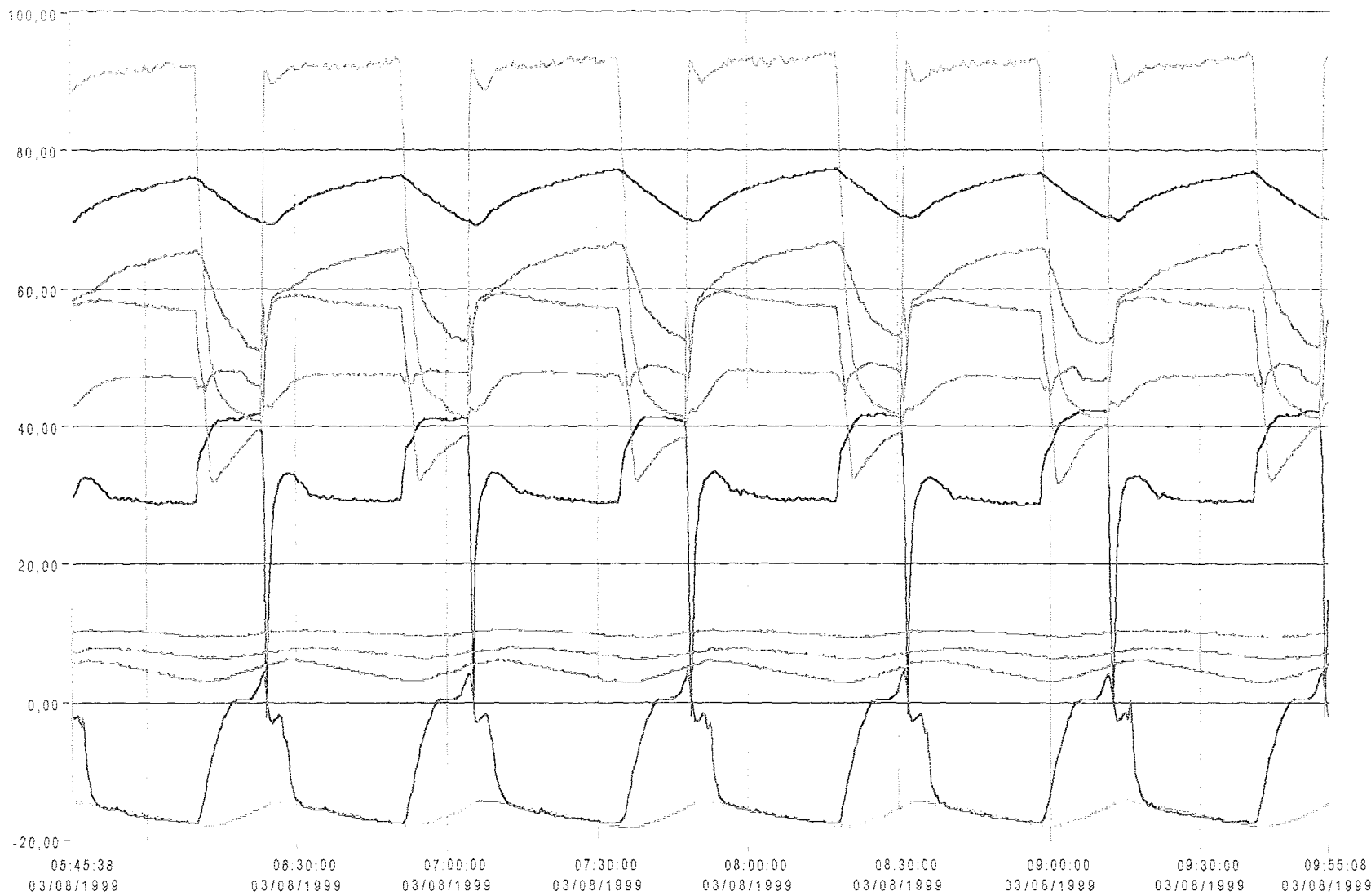
Sampling
Time(sec): 30

Test Start: 08/03/1999
17.45.38

Test Stop: 09/03/1999
08.34.01



appliances engineering



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe



WHIRLPOOL EUROPE

CABINET MODEL :	DD 300 (N°00000009) Class T
-----------------	-----------------------------

TYPE of TEST :	LOADLESS RUNNING
----------------	------------------

Date	15/03/99	Compressor : GL 80 AN
Ambient temperature	[°C] 32	Condenser : wires and tubes
Refrigerant R 134a	[gr] 150	

Thermostat setting		7 / 7					
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-20.9				
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+1.8				
4	T 2 refrigerator temp.	[°C]	-2.0				
5	T 3 refrigerator temp.	[°C]	-5.0				
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-24.3				
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	73.6				
10	Condenser in temp.	[°C]	86.1				
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	41.0				
13	Oil cooler in temp.	[°C]	50.8				
14	Oil cooler out temp.	[°C]	62.6				
15	Suction pipe temp.	[°C]	23.8				
	Refrig. temp. (Avr)	[°C]	-1.7				
	Freezer temp. (Avr)	[°C]	-24.3				
	Test Time	[h]	24				
	Running Time	[%]	100				
	Energy consumption	[Kwh/24h]					
	Voltage	[Volt]	220				
	Current	[A]	1.66				
	Power	[Watt]	170				

NOTE :



WHIRLPOOL EUROPE

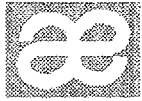
CABINET MODEL : DD 300 (N°00000009) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	18/03/99	Compressor : GL 80 AN
Ambient temperature	[°C] 25	Condenser : wires and tubes
Refrigerant R 134a	[gr] 150	

Thermostat setting		5 / 7		3 / 7			
T.C.		ON	OFF	ON	OFF	ON	OFF
1	Thermostat bulb temp. [°C]	+4.0	-22.3	+4.4	-17.9		
2	Damper bulb temp. [°C]						
3	T 1 refrigerator temp. [°C]	+6.8	+6.3	+8.4	+8.0		
4	T 2 refrigerator temp. [°C]	+5.3	+6.1	+7.8	+7.4		
5	T 3 refrigerator temp. [°C]	+4.9	+3.0	+6.5	+5.7		
6	T 1 freezer temp. [°C]						
7	T 2 freezer temp. [°C]	-18.2	-22.0	-18.3	-20.6		
8	T 3 freezer temp. [°C]						
9	Compressor temp. [°C]	52.4	58.5	52.1	56.6		
10	Condenser in temp. [°C]	28.3	73.2	29.8	69.9		
11	Condenser m.p. temp. [°C]						
12	Condenser out temp. [°C]	27.1	31.6	24.3	30.9		
13	Oil cooler in temp. [°C]	32.6	45.0	34.3	44.7		
14	Oil cooler out temp. [°C]	36.3	45.9	37.4	45.6		
15	Suction pipe temp. [°C]	29.3	22.9	29.9	24.0		
	Refrig. temp. (Avr) [°C]	+5.4		+7.3			
	Freezer temp. (Avr) [°C]	-20.1		-19.4			
	Test Time [h]	24		24			
	Running Time [%]	50.5		47.7			
	Energy consumption [Kwh/24h]	2.100		1.964			
	Voltage [Volt]	220		220			
	Current [A]	2.09	1.73	1.82	1.70		
	Power [Watt]	290	170	234	168		

NOTE :



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DD300-25°C-Vuoto-Pos5(00000009).dat

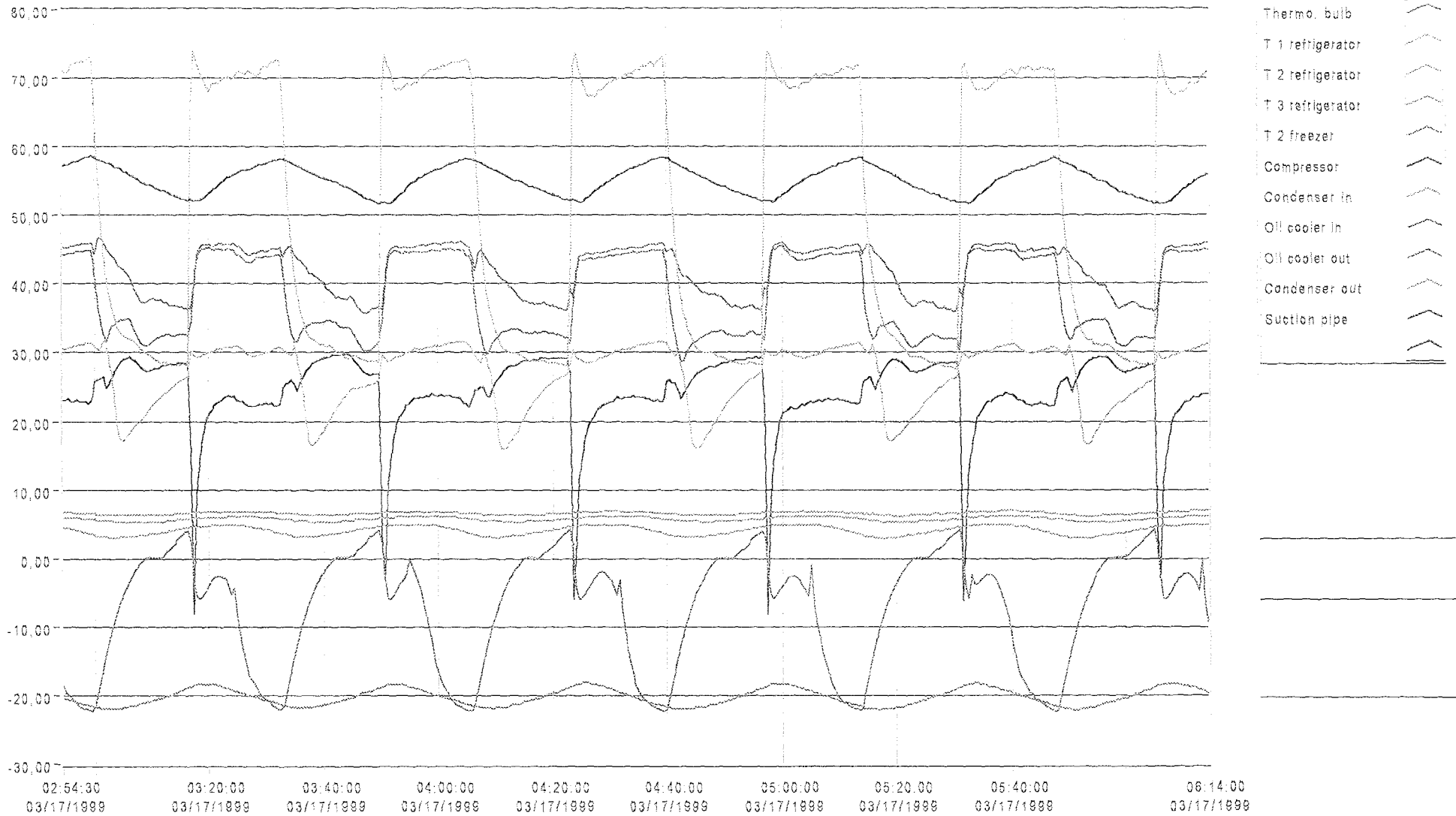
Descrizione DD300-25°C-Thermostat control-Pos5(00000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 17/03/1999 14.54.30

Fine test: 18/03/1999 08.46.02





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DD300-25°C-Vuoto-Pos3(00000009).dat

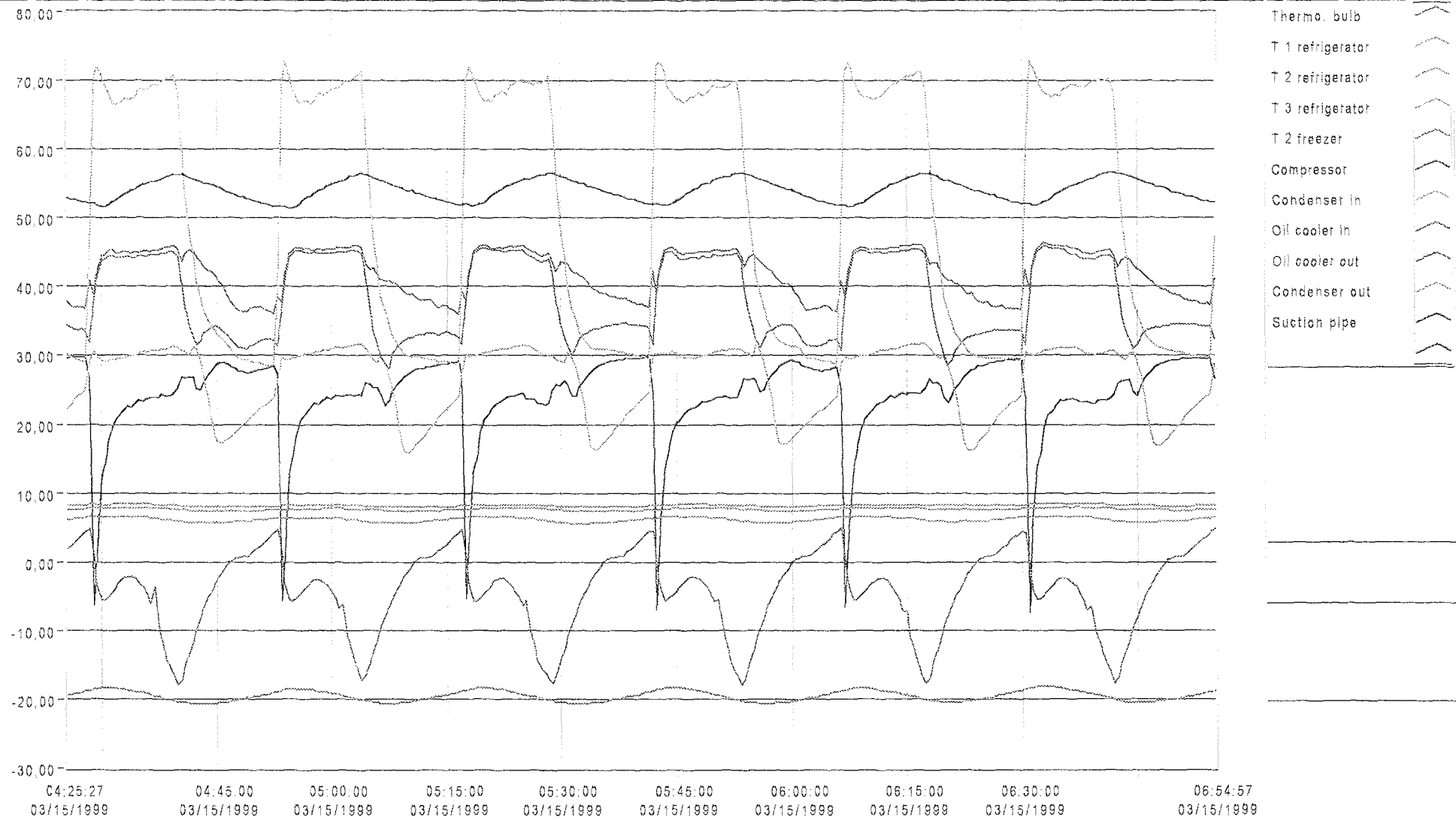
Descrizione DD300-25°C-Thermostat control-Pos3(00000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 15/03/1999 11.26.27

Non rilevata





WHIRLPOOL EUROPE

CABINET MODEL : DD 300 (N°00000009) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	23/03/99	Compressor : GL 80 AN	
Ambient temperature	[°C] 18	Condenser : wires and tubes	
Refrigerant R 134a	[gr] 150		

Thermostat setting			6 / 7		4 / 7		ON	OFF
			ON	OFF	ON	OFF		
T.C.								
1	Thermostat bulb temp.	[°C]	+3.8	-25.7	+3.9	-20.3		
2	Damper bulb temp.	[°C]						
3	T 1 refrigerator temp.	[°C]	+3.7	+1.9	+4.1	+3.1		
4	T 2 refrigerator temp.	[°C]	+3.5	+1.3	+4.0	+2.7		
5	T 3 refrigerator temp.	[°C]	+2.9	-1.0	+3.2	+1.0		
6	T 1 freezer temp.	[°C]						
7	T 2 freezer temp.	[°C]	-18.0	-28.2	-20.3	-26.8		
8	T 3 freezer temp.	[°C]						
9	Compressor temp.	[°C]	40.8	53.1	42.3	52.6		
10	Condenser in temp.	[°C]	21.0	62.8	20.9	62.0		
11	Condenser m.p. temp.	[°C]						
12	Condenser out temp.	[°C]	19.7	23.5	20.0	23.0		
13	Oil cooler in temp.	[°C]	21.7	36.6	23.7	36.4		
14	Oil cooler out temp.	[°C]	25.9	37.8	27.2	37.9		
15	Suction pipe temp.	[°C]	18.8	17.2	21.1	17.2		
	Refrig. temp. (Avr)	[°C]	+2.0		+3.0			
	Freezer temp. (Avr)	[°C]	-23.1		-23.5			
	Test Time	[h]	24		24			
	Running Time	[%]	49.1		46.2			
	Energy consumption	[Kwh/24h]	1.810		1.780			
	Voltage	[Volt]	220		220			
	Current	[A]	1.84	1.68	1.75	1.62		
	Power	[Watt]	220	151	220	150		

NOTE :



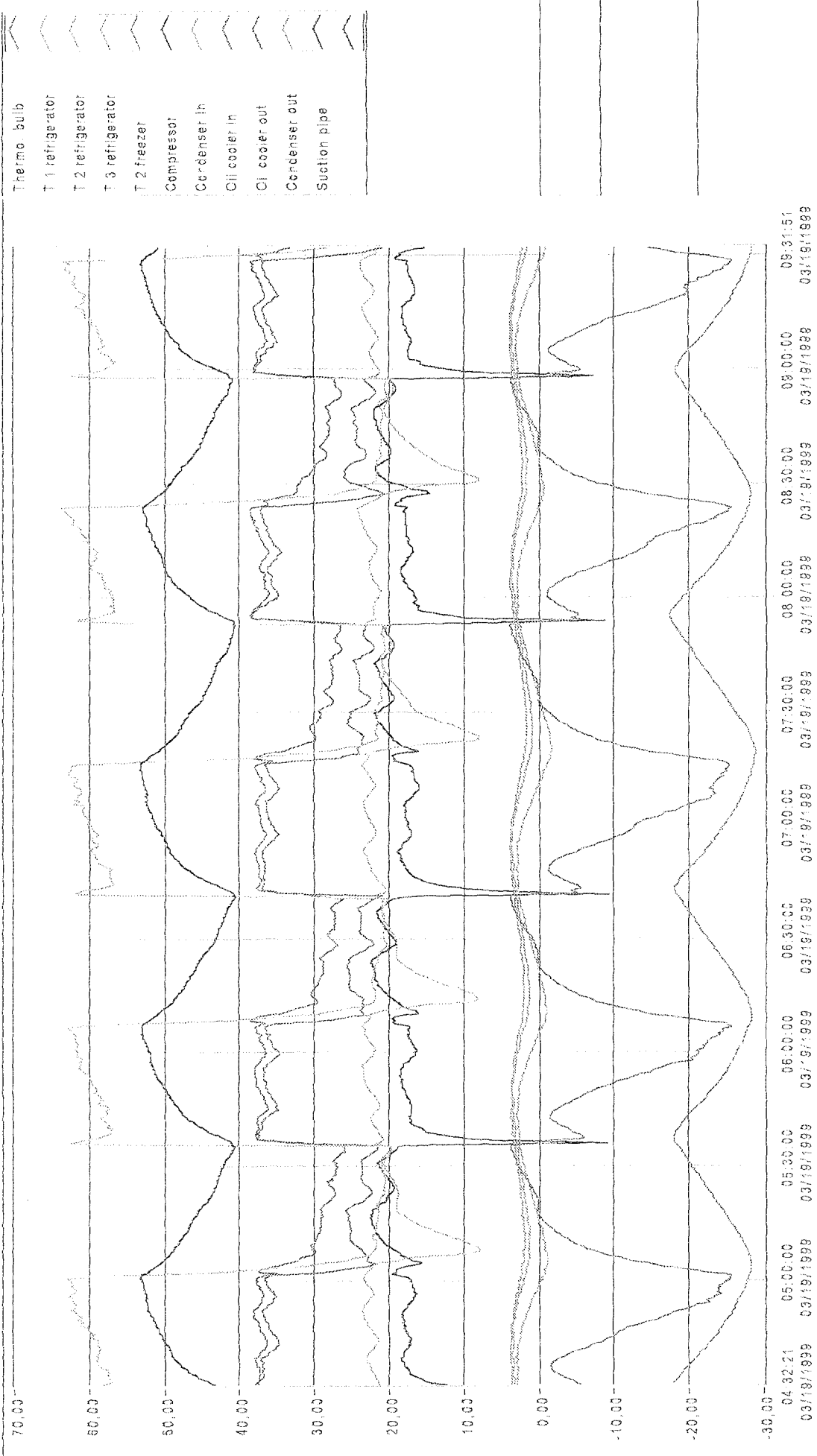
appliances engineering

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Descrizione DD300-18°C-Vuoto-Poss(00000009).dat

Inizio test: 19/03/1999 16.32.21 Fine test: 20/03/1999 08.35.39



Hardware & Software by CA.Gli.



appliances engineering

DD300-18°C-Vuoto-Pos4(00000009).dat

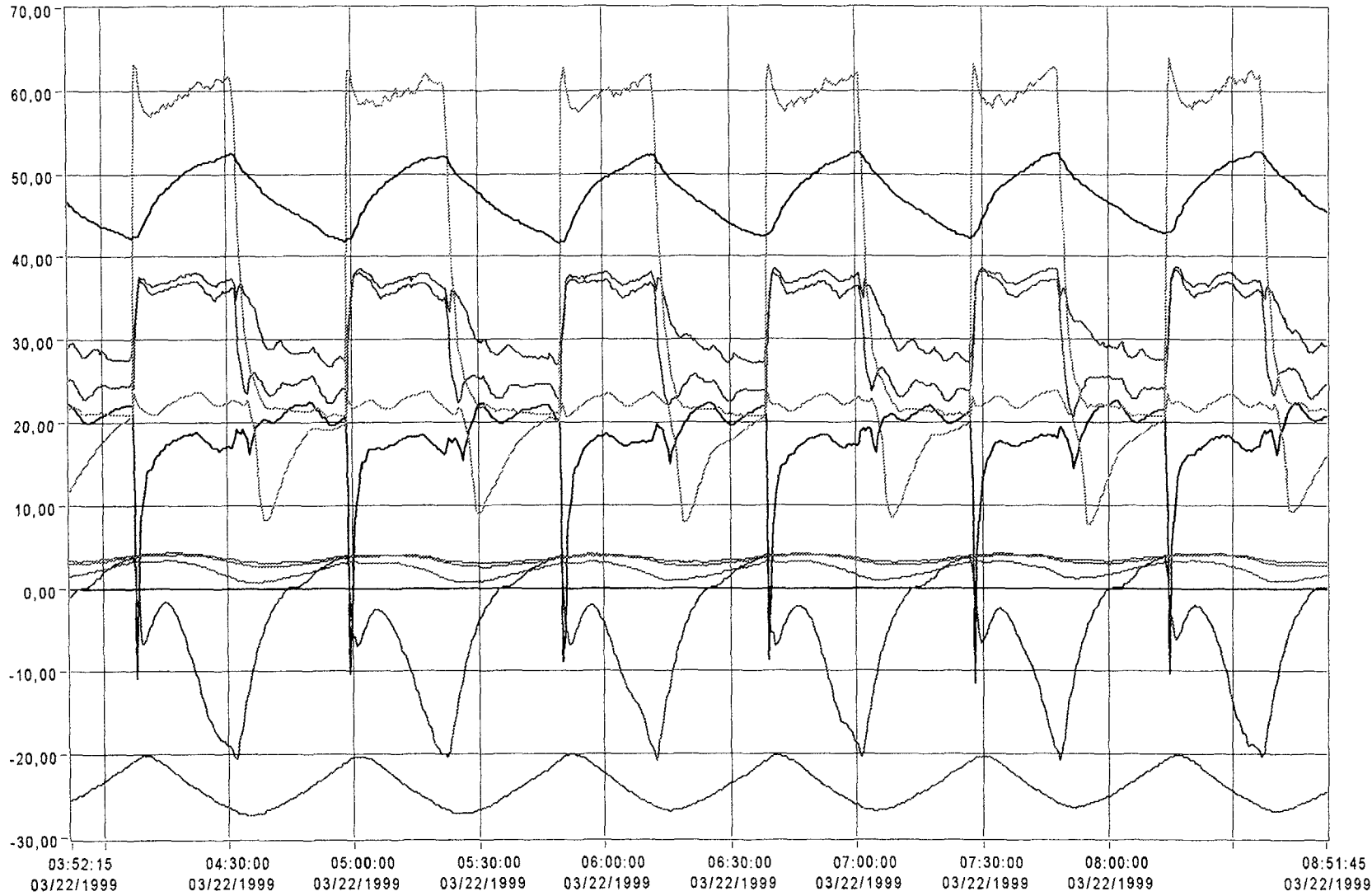
Descrizione DD300-18°C-Thermostat control-Pos4(00000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 22/03/1999 15.52.15

Fine test: 23/03/1999 08.48.06



Hardware & Software by CA.GI.



WHIRLPOOL EUROPE

CABINET MODEL :	DD 300 (N°00000009) Class T
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TYPE of TEST :	PULL DOWN
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Date	03/03/99	Compressor : GL 80 AN
Refrigerant R 134a	[gr] 150	Condenser : wires and tubes

	Ambient temperature	[°C]	43	38	
	Thermostat setting		7 / 7	7 / 7	
T.C.					
1	Thermostat bulb temp.	[°C]	-14.5	-17.6	
2	Damper bulb temp.	[°C]			
3	T 1 refrigerator temp.	[°C]	+11.0	+6.4	
4	T 2 refrigerator temp.	[°C]	+7.3	+2.7	
5	T 3 refrigerator temp.	[°C]	+4.1	-0.6	
6	T 1 freezer temp.	[°C]			
7	T 2 freezer temp.	[°C]	-17.2	-21.0	
8	T 3 freezer temp.	[°C]			
9	Compressor temp.	[°C]	86.0	81.0	
10	Condenser in temp.	[°C]	100.5	96.1	
11	Condenser m.p. temp.	[°C]			
12	Condenser out temp.	[°C]	57.4	48.1	
13	Oil cooler in temp.	[°C]	59.6	56.8	
14	Oil cooler out temp.	[°C]	75.1	70.4	
15	Suction pipe temp.	[°C]	30.5	28.8	
	Refrig. temp. (Avr)	[°C]	+7.5	+2.8	
	Freezer temp. (Avr)	[°C]	-17.2	-21.0	
	Test Time	[h]	6	6	
	Running Time	[%]	100	100	
	Energy consumption	[Kwh/24h]			
	Voltage	[Volt]	220	220	
	Current	[A]	1.75	1.67	
	Power	[Watt]	195	182	

NOTE :



C:\Thermostatic Chamber\Test Files vers 1,1\
Whirlpool\Neeasaet

Description:
DD300-43°C-Pull-down-Pos.max(00000009)



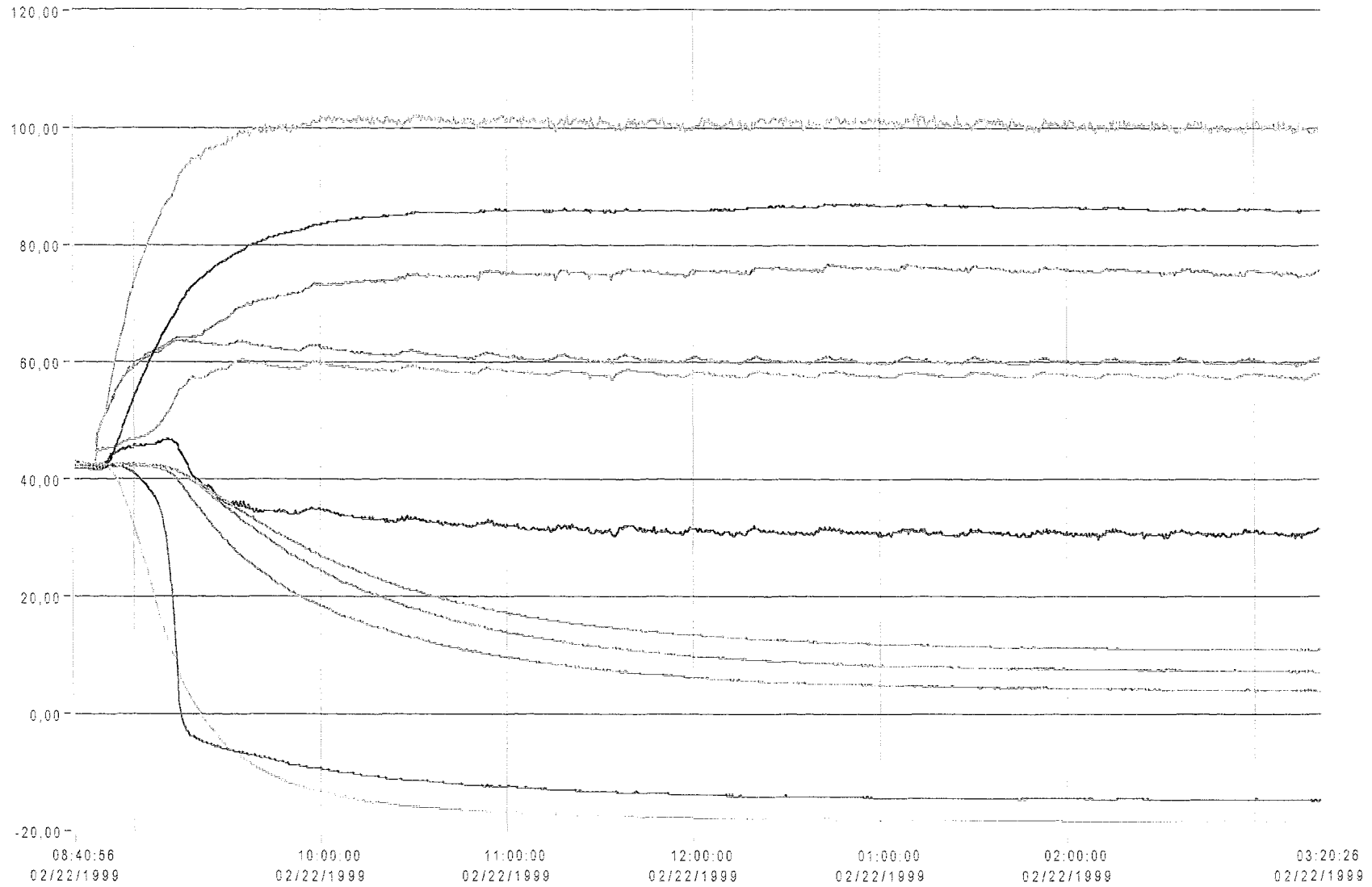
appliances engineering

ID Chamber: Chamber 1
Position A

Sampling
Time(sec): 30

Test Start: 22/02/1999
08.40.56

Not acquired



Thermo. bulb
T 1 refrigerator
T 2 refrigerator
T 3 refrigerator
T 2 freezer
Compressor
Condenser in
Oil cooler in
Oil cooler out
Condenser out
Suction pipe



CA.GI.

C:\Thermostatic Chamber\Test Files vers 1,1
Whirlpool\Neeasae\DD300-38°C-Pull

Description: DD300-38°C-Pull
down(00000009)

ID Chamber: Chamber 1
Position A

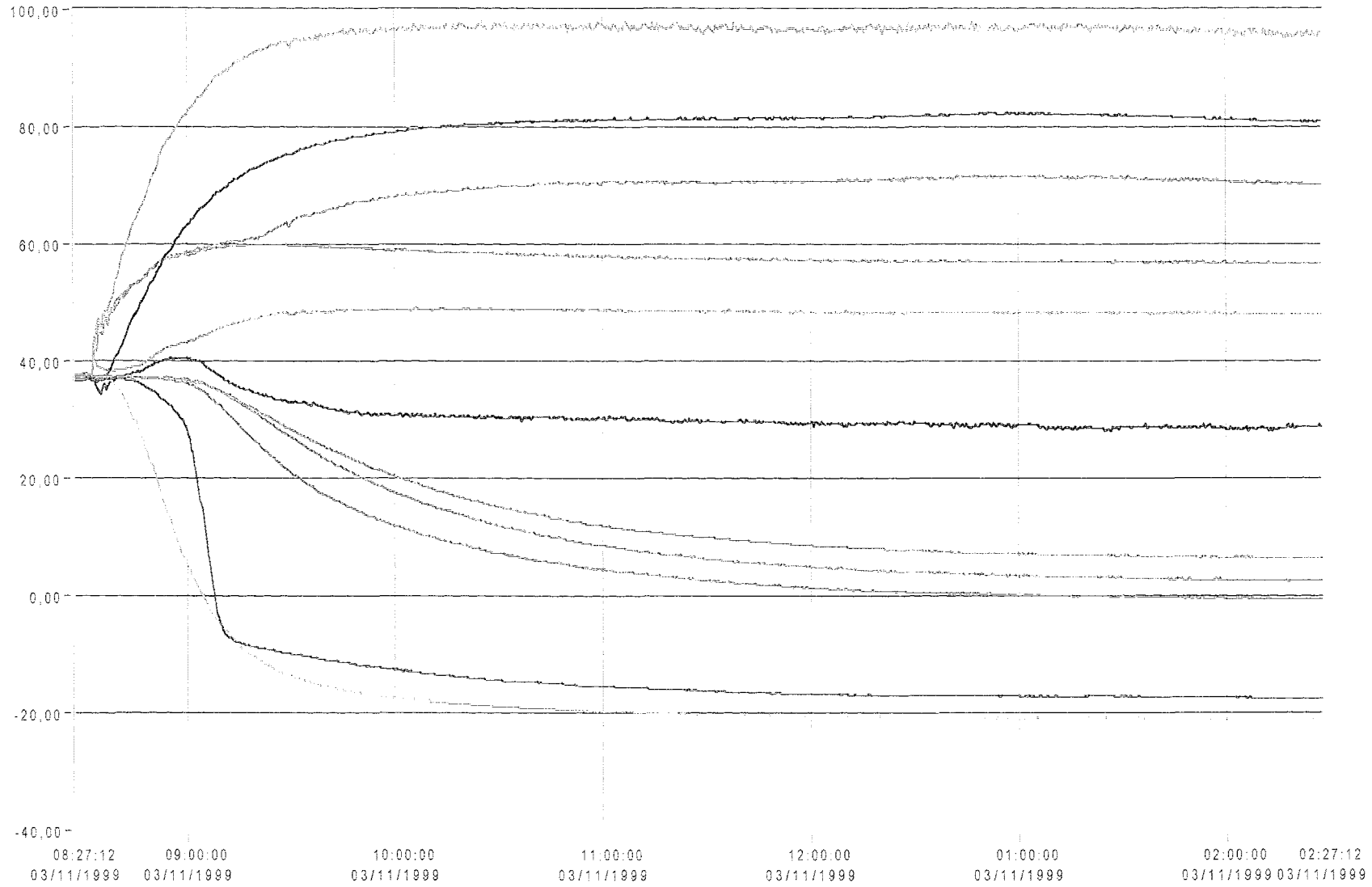
Sampling
Time(sec): 30

Test Start: 11/03/1999
08.27.12

Test Stop: 11/03/1999
14.33.09



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WHIRLPOOL EUROPE

CABINET MODEL : DD 300 (N°00000009) Class T

TYPE of TEST : STORAGE TEST

Date	29/04/99		Compressor : GL 80 AN	
Storage load	[Kg]	24	Condenser : wires and tubes	
Refrigerant R 134a	[gr]	150		

Ambient temperature		[°C]	43		38		18	
Thermostat setting			2 / 7		4 / 7		4 / 7	
T.C.			ON	OFF	ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	+4.5	-15.8	+4.3	-19.4	+3.8	-20.3
2	Damper bulb temp.	[°C]						
3	T 1 refrigerator temp.	[°C]	+11.2	+9.9	+8.0	+5.5	+3.7	+2.3
4	T 2 refrigerator temp.	[°C]	+7.8	+5.9	+5.0	+1.7	+3.4	+1.9
5	T 3 refrigerator temp.	[°C]	+6.0	+2.7	+3.7	-1.6	+2.8	-0.1
6	T package 1	[°C]	-15.6	-15.8	-18.2	-18.9	-23.1	-23.7
7	T package 2	[°C]	-14.8	-15.2	-17.5	-18.4	-22.5	-23.2
8	T package 3	[°C]	-17.3	-17.7	-20.3	-21.0	-25.2	-26.0
9	T package 4	[°C]	-17.8	-18.3	-20.7	-21.6	-26.0	-27.1
10	T package 5	[°C]						
11	T package 6	[°C]						
12	Compressor temp.	[°C]	79.3	87.0	68.9	78.7	42.4	53.2
13	Condenser in temp.	[°C]	48.1	102.2	41.5	93.5	20.9	63.2
14	Condenser out temp.	[°C]	44.6	53.2	40.7	46.6	20.6	23.5
15	Suction pipe temp.	[°C]	46.4	33.2	41.3	28.8	21.5	17.9
	Refrig. temp. (Avr)	[°C]	+7.2		+3.7		+2.3	
	Warmer package	[°C]	-14.8		-17.5		-22.5	
	Average of packages	[°C]	-16.6		-19.6		-24.6	
	Test Time	[h]	24		24		24	
	Running Time	[%]	86.4		84.7		46.7	
	Energy consumption	[Kwh/24h]	4.251		3.800		1.800	
	Voltage	[Volt]	220		220		220	
	Current	[A]	1.83	1.73	1.81	1.68	1.79	1.68
	Power	[Watt]	245	202	244	185	214	154

NOTE :



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DD300-43°C-Cons-Pos2(00000009).dat

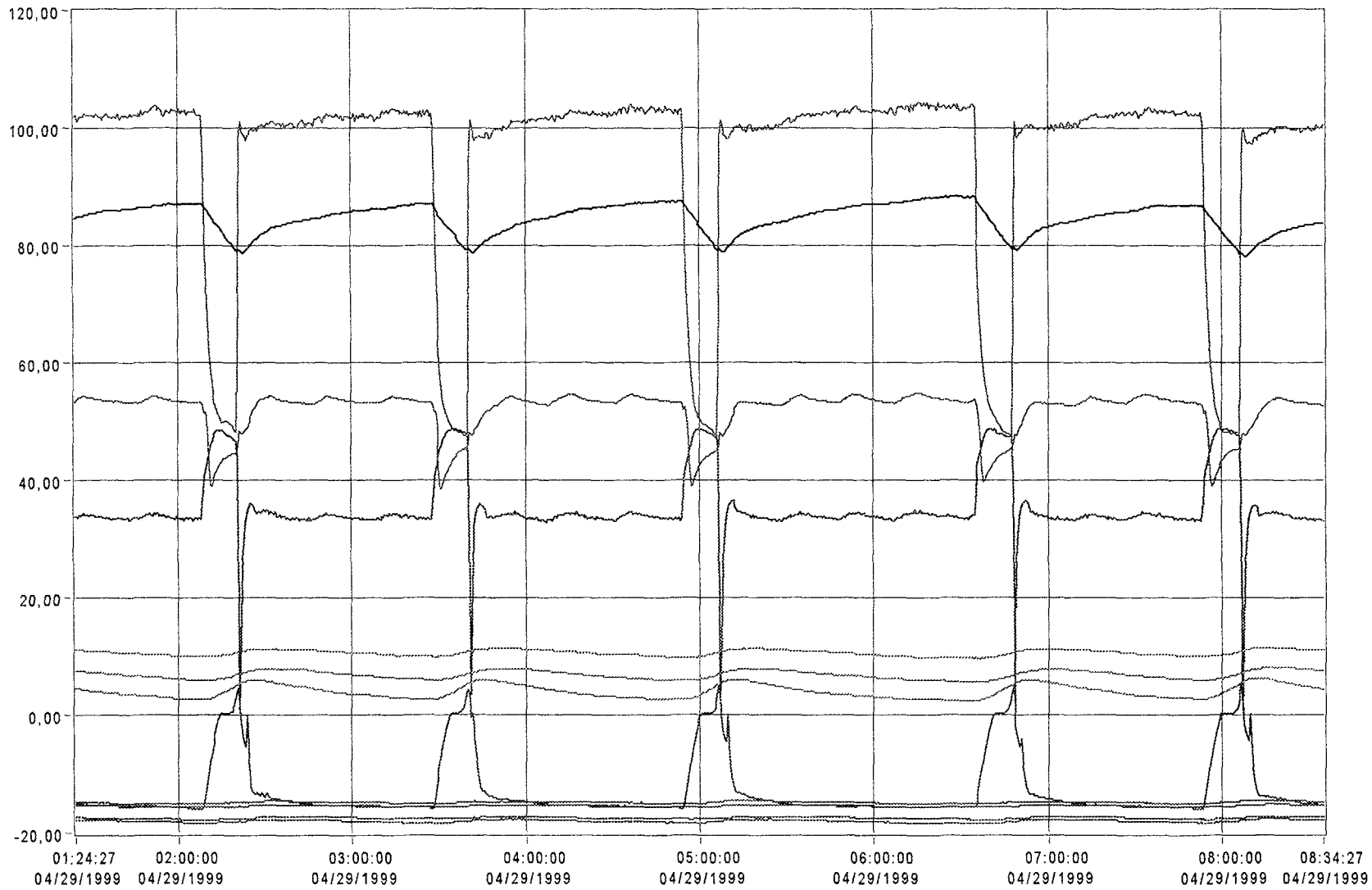
Descrizione DD300-43°C-Storage test-Pos2(00000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 28/04/1999 10.25.27

Fine test: 29/04/1999 08.36.22



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DD300-38°C-Cons-Pos4(00000009).dat

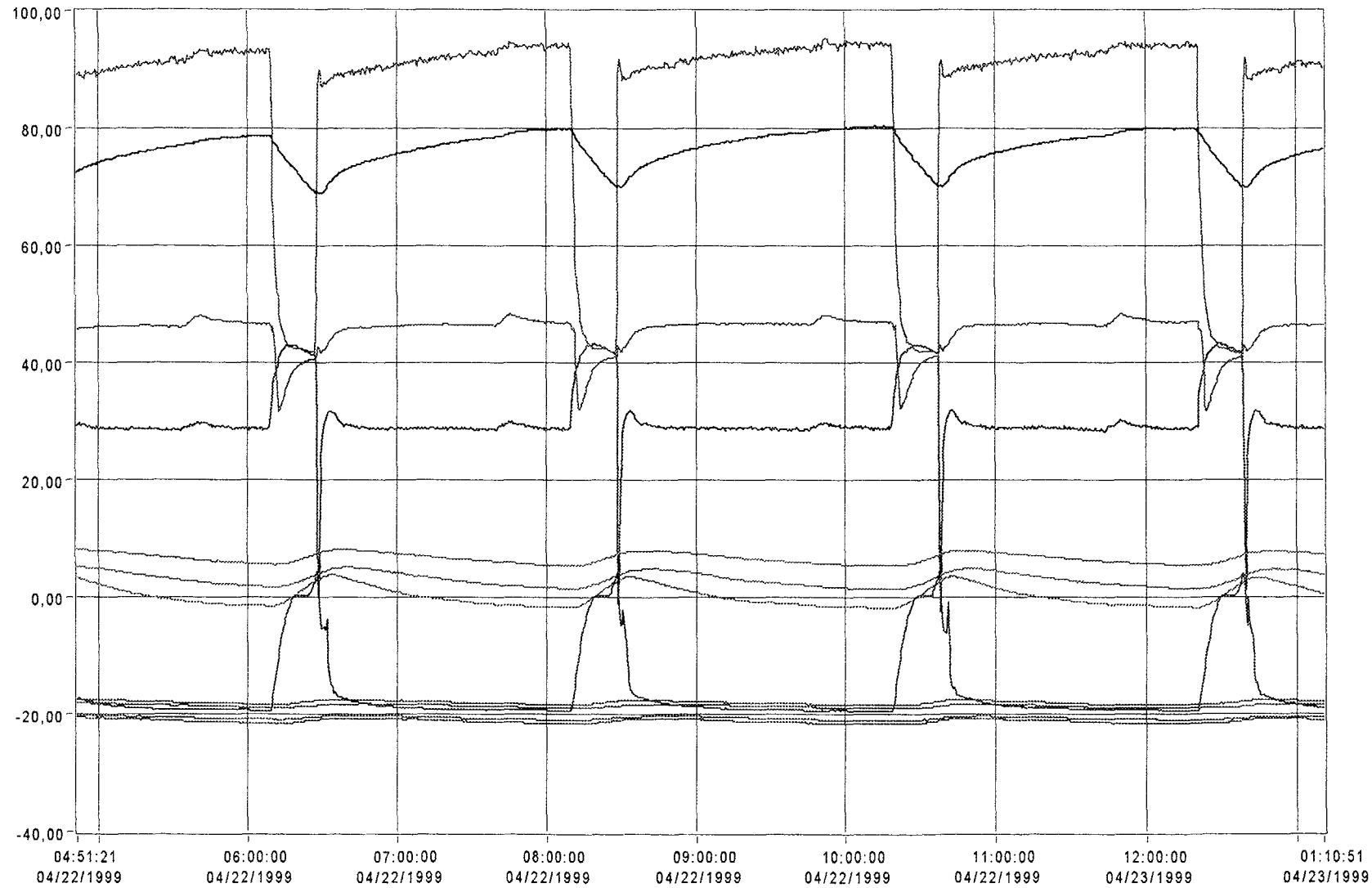
Descrizione DD300-38°C-Storage test-Pos4(00000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 22/04/1999 16.51.21

Fine test: 23/04/1999 08.35.08



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.



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DD300-18°C-Cons-Pos4(00000009).dat

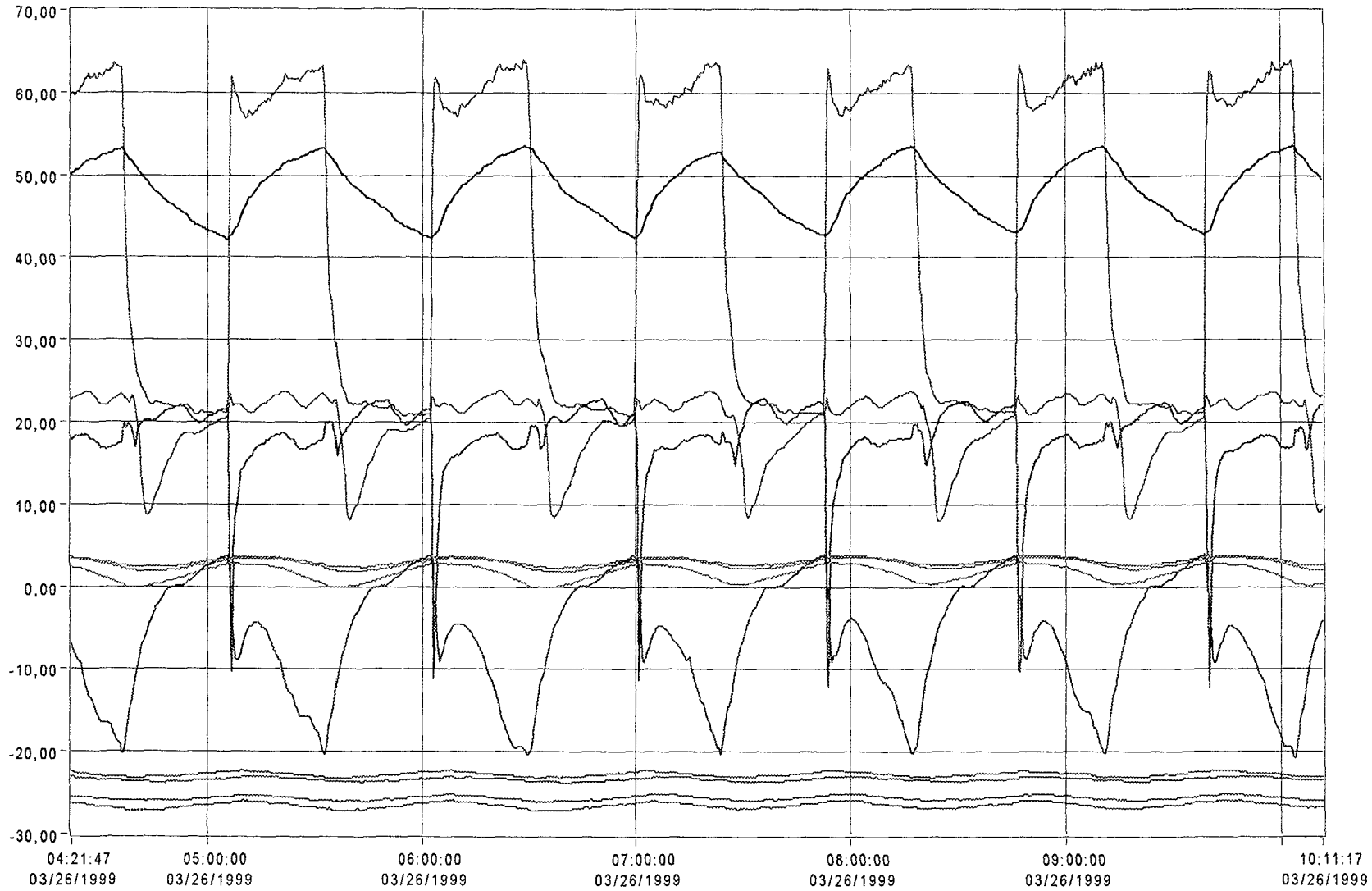
Descrizione DD300-18°C-Storage test-Pos4(00000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 26/03/1999 16.21.47

Fine test: 27/03/1999 08.31.08



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.



WHIRLPOOL EUROPE

CABINET MODEL : DD 300 (N°00000009) Class T

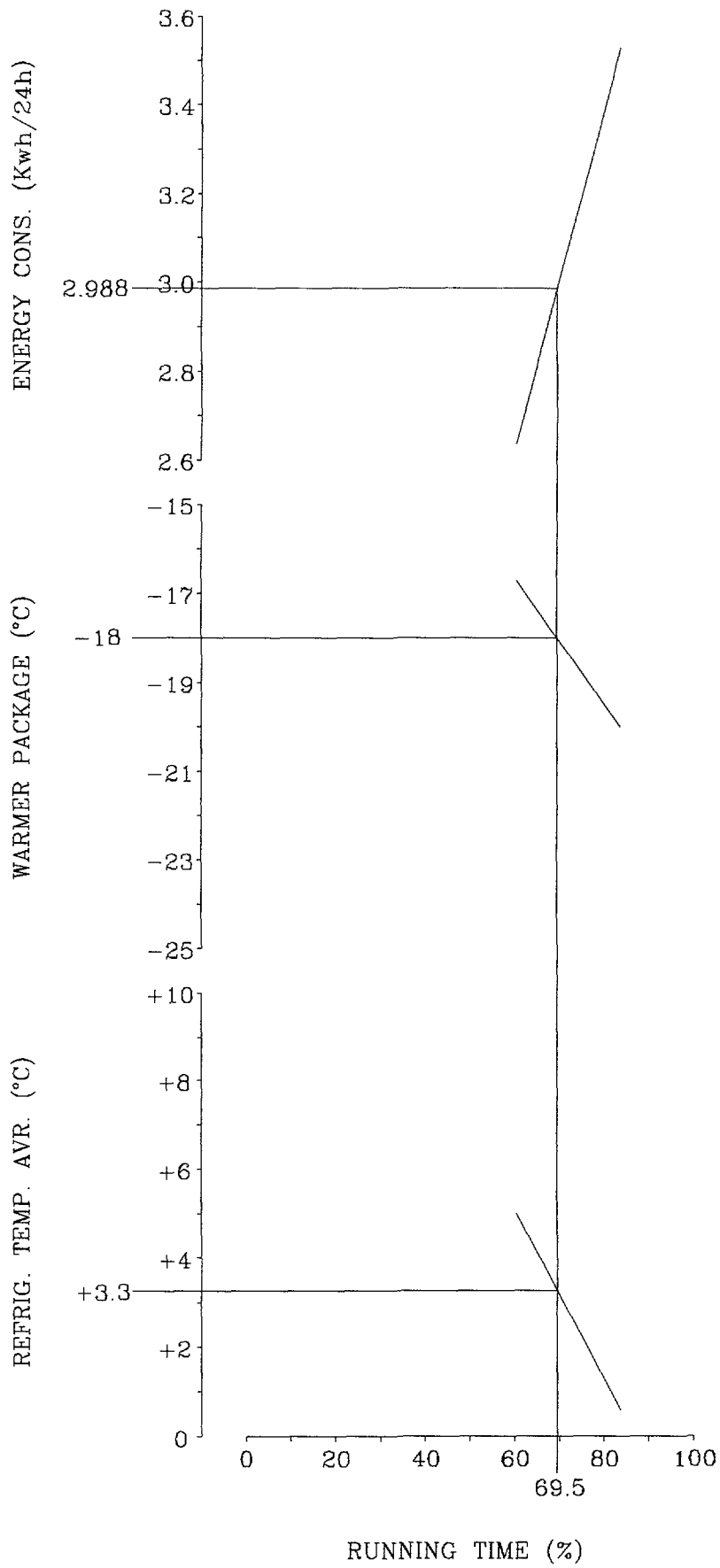
TYPE of TEST : ENERGY CONSUMPTION

Date	21/04/99		Compressor : GL 80 AN
Ambient temperature	[°C]	32	Condenser : wires and tubes
Storage load	[Kg]	24	
Refrigerant R 134a	[gr]	150	

Thermostat setting		5 / 7		4 / 7		
T.C.		ON	OFF	ON	OFF	
1	Thermostat bulb temp. [°C]	+4.2	-22.6	+4.3	-20.2	
2	Damper bulb temp. [°C]					
3	T 1 refrigerator temp. [°C]	+5.4	+1.5	+7.6	+6.7	
4	T 2 refrigerator temp. [°C]	+2.8	-2.4	+5.8	+4.3	
5	T 3 refrigerator temp. [°C]	+1.7	-5.4	+4.4	+1.2	
6	T package 1 [°C]	-20.8	-21.9	-17.4	-17.7	
7	T package 2 [°C]	-20.0	-21.3	-16.7	-17.1	
8	T package 3 [°C]	-23.9	-24.0	-20.1	-20.3	
9	T package 4 [°C]	-23.3	-24.6	-20.2	-20.8	
10	T package 5 [°C]					
11	T package 6 [°C]					
12	Compressor temp. [°C]	61.0	73.0	59.6	66.6	
13	Condenser in temp. [°C]	35.9	86.5	59.4	83.1	
14	Condenser out temp. [°C]	35.4	39.1	33.7	40.0	
15	Suction pipe temp. [°C]	35.1	23.2	35.3	25.0	Interpolated
						at -18 [°C]
	Refrig. temp. (Avr) [°C]	+0.6		+5.0		+3.3
	Warmer package [°C]	-20.0		-16.7		-18.0
	Average of packages [°C]	-22.3		-18.8		
	Test Time [h]	24		24		
	Running Time [%]	83.6		60.4		69.5
	Energy consumption [Kwh/24h]	3.527		2.637		2.988
	Voltage [Volt]	220		220		
	Current [A]	1.79	1.65	1.82	1.70	
	Power [Watt]	219	171	240	180	

NOTE :

DD 300
ENERGY CONSUMPTION (with load) AT 32°C





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DD300-32°C-Energy cons-Pos5(00000009).dat

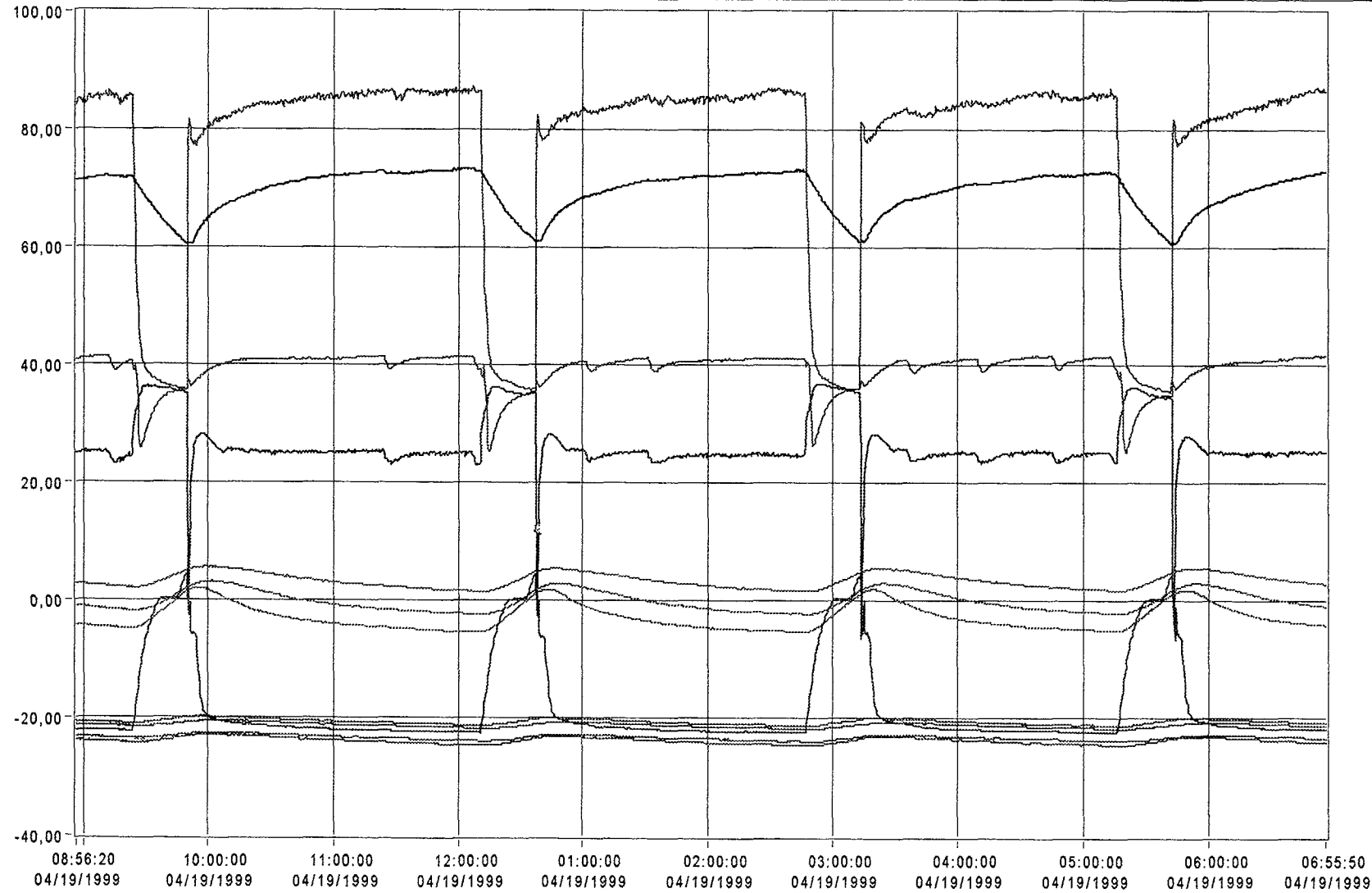
Descrizione DD300-32°C-Energy cons-Pos5(00000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 19/04/1999 08.56.20

Fine test: 20/04/1999 08.56.18



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DD300-32°C-Energy cons-Pos4(00000009).dat

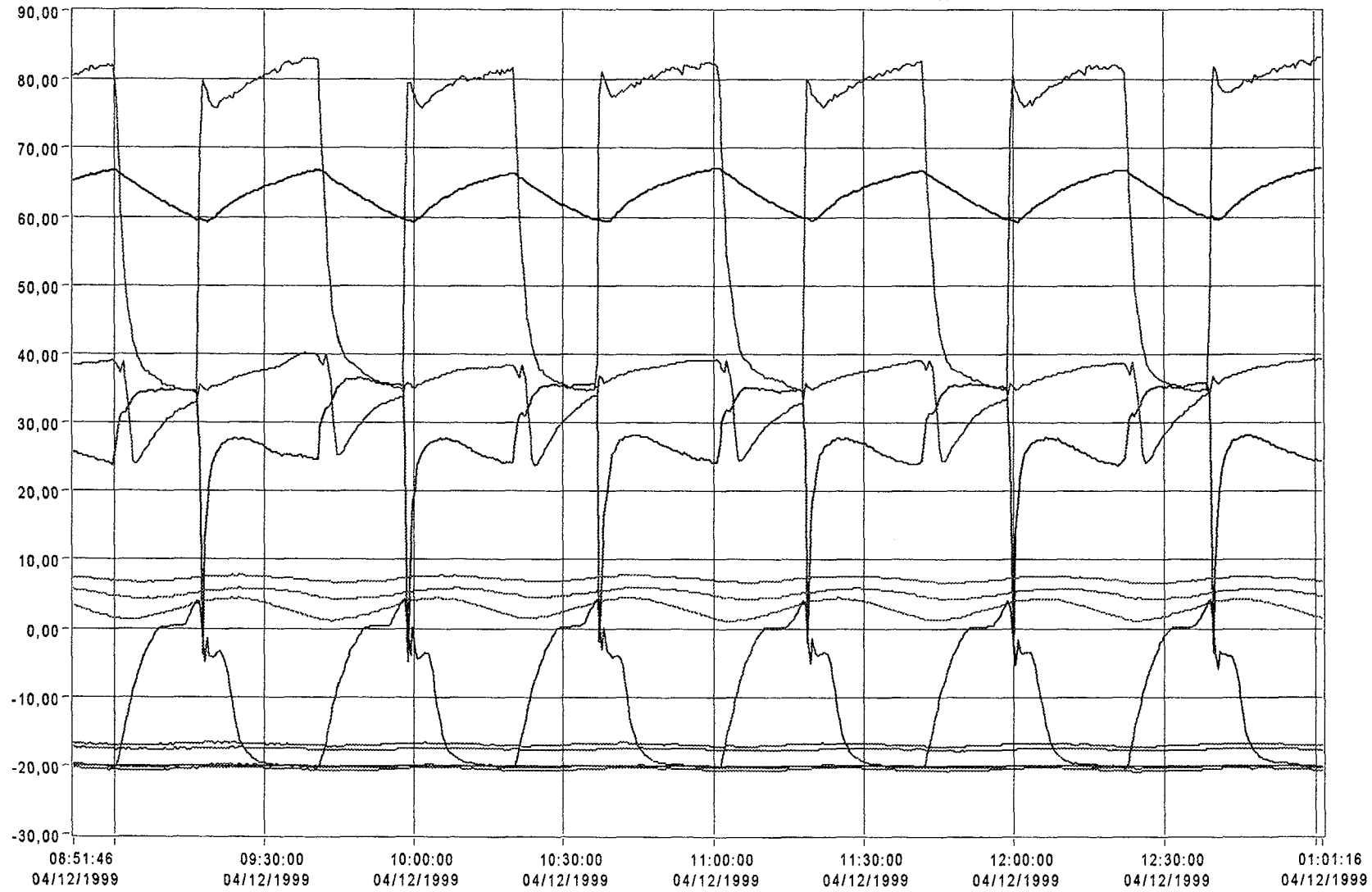
Descrizione DD300-32°C-Energy cons-Pos4(00000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 12/04/1999 08.51.46

Fine test: 13/04/1999 08.37.44



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

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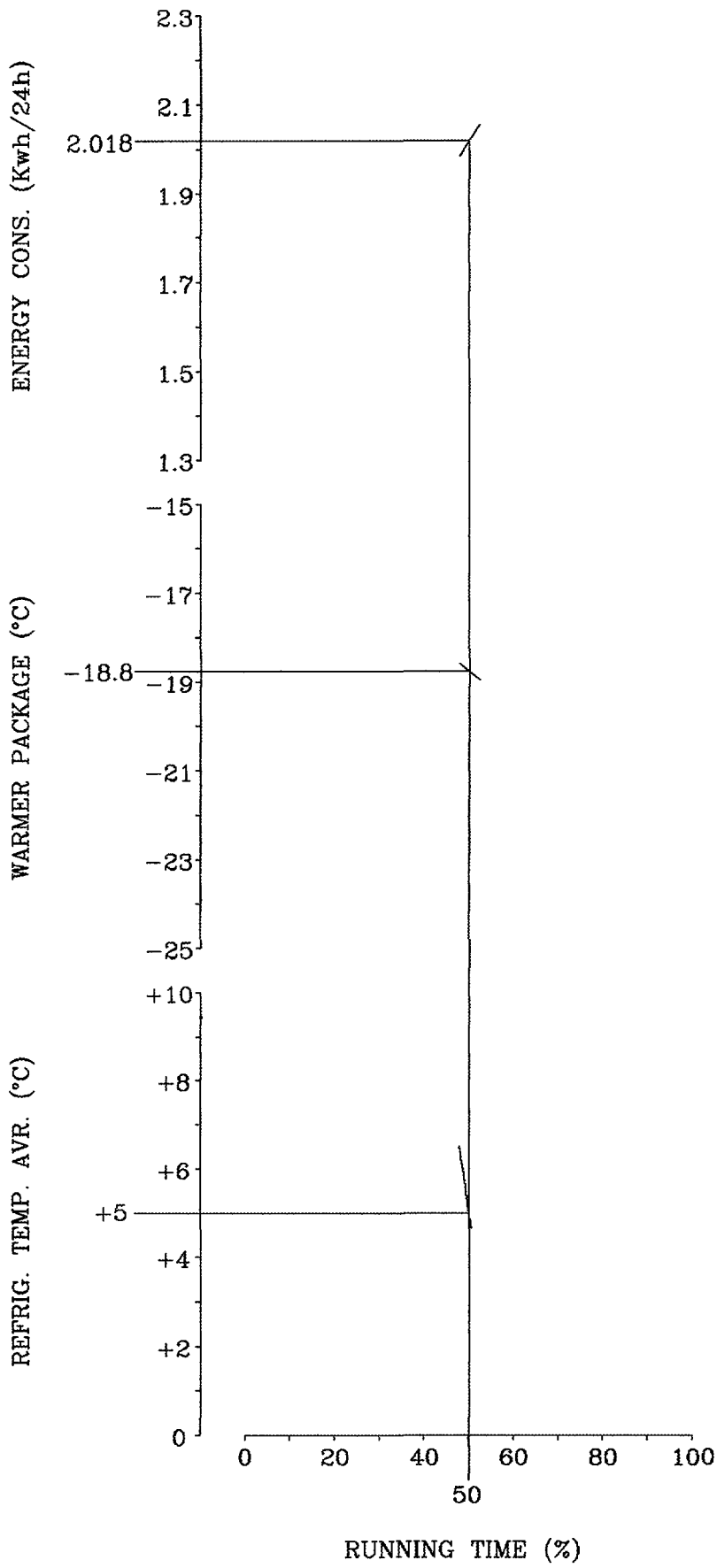
CABINET MODEL : **DD 300 (N°00000009) Class T**TYPE of TEST : **ENERGY CONSUMPTION**

Date	07/04/99		Compressor : GL 80 AN
Ambient temperature	[°C]	25	Condenser : wires and tubes
Storage load	[Kg]	24	
Refrigerant R 134a	[gr]	150	

Thermostat setting		4 / 7		2 / 7		
T.C.		ON	OFF	ON	OFF	
1	Thermostat bulb temp. [°C]	+3.7	-20.4	+4.0	-16.4	
2	Damper bulb temp. [°C]					
3	T 1 refrigerator temp. [°C]	+6.9	+6.4	+7.5	+7.2	
4	T 2 refrigerator temp. [°C]	+6.2	+5.6	+6.9	+6.6	
5	T 3 refrigerator temp. [°C]	+5.1	+3.7	+5.8	+4.8	
6	T package 1 [°C]	-19.3	-19.5	-19.1	-19.1	
7	T package 2 [°C]	-18.7	-19.1	-18.6	-18.8	
8	T package 3 [°C]	-21.9	-22.3	-21.7	-21.9	
9	T package 4 [°C]	-22.3	-22.8	-22.1	-22.5	
10	T package 5 [°C]					
11	T package 6 [°C]					
12	Compressor temp. [°C]	52.0	57.7	52.1	56.9	
13	Condenser in temp. [°C]	29.1	70.8	28.7	71.2	
14	Condenser out temp. [°C]	25.7	30.4	24.1	30.9	
15	Suction pipe temp. [°C]	29.8	23.1	22.0	24.0	Extrapolated
						at +5[°C]
	Refrig. temp. (Avr) [°C]	+5.6		+6.5		+5.0
	Warmer package [°C]	-18.7		-18.6		-18.8
	Average of packages [°C]	-20.7		-20.5		
	Test Time [h]	24		24		
	Running Time [%]	49.2		47.9		50
	Energy consumption [Kwh/24h]	2.005		1.985		2.018
	Voltage [Volt]	220		220		
	Current [A]	1.76	1.63	1.77	1.68	
	Power [Watt]	226	166	213	167	

NOTE :

DD 300
ENERGY CONSUMPTION (with load) AT 25°C





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DD300-25°C-Energy cons-Pos4(00000009).dat

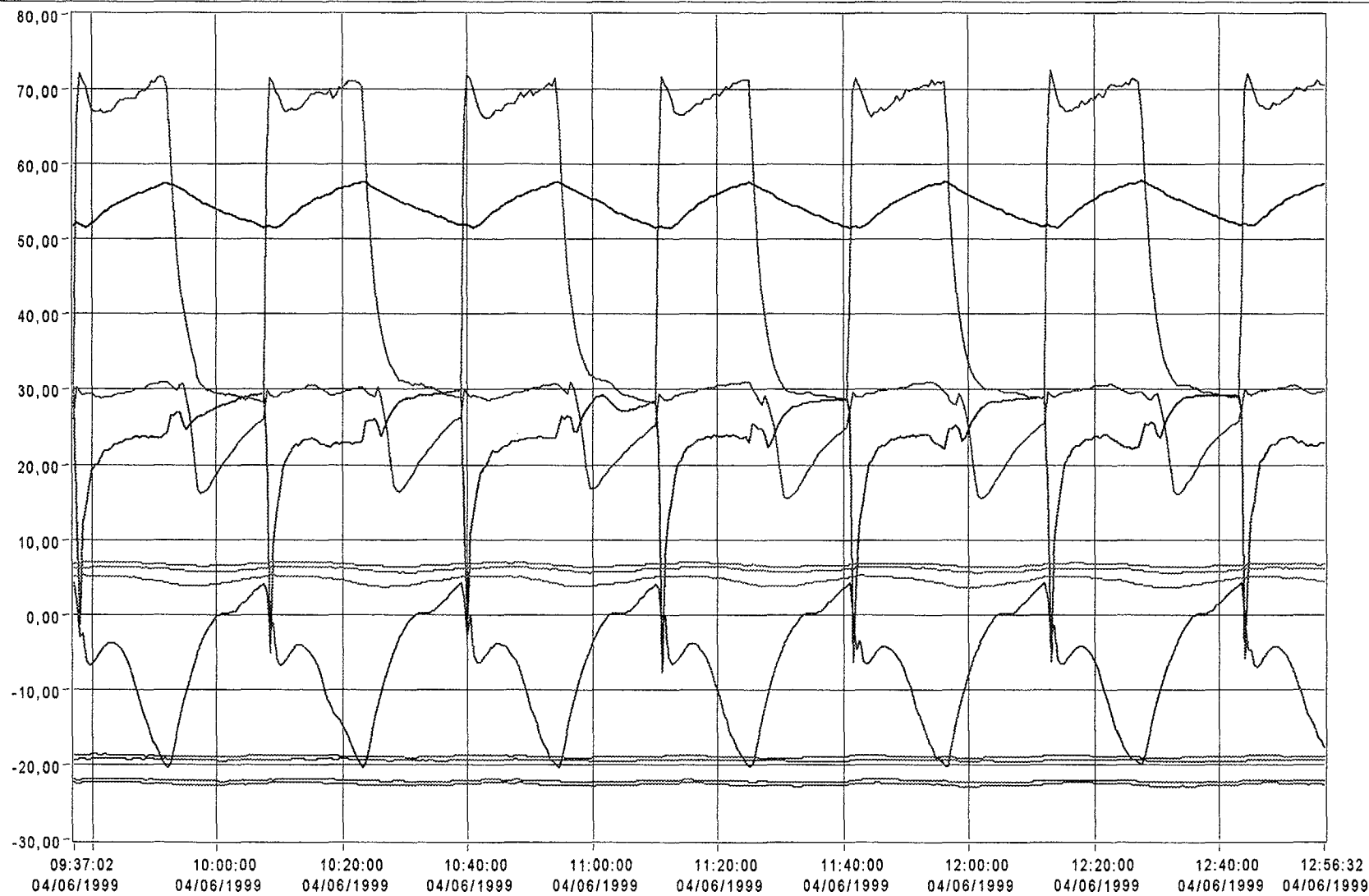
Descrizione DD300-25°C-Energy cons-Pos4(00000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 06/04/1999 09.37.02

Fine test: 07/04/1999 08.34.34



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

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DD300-25°C-Energy cons-Pos2(00000009).dat

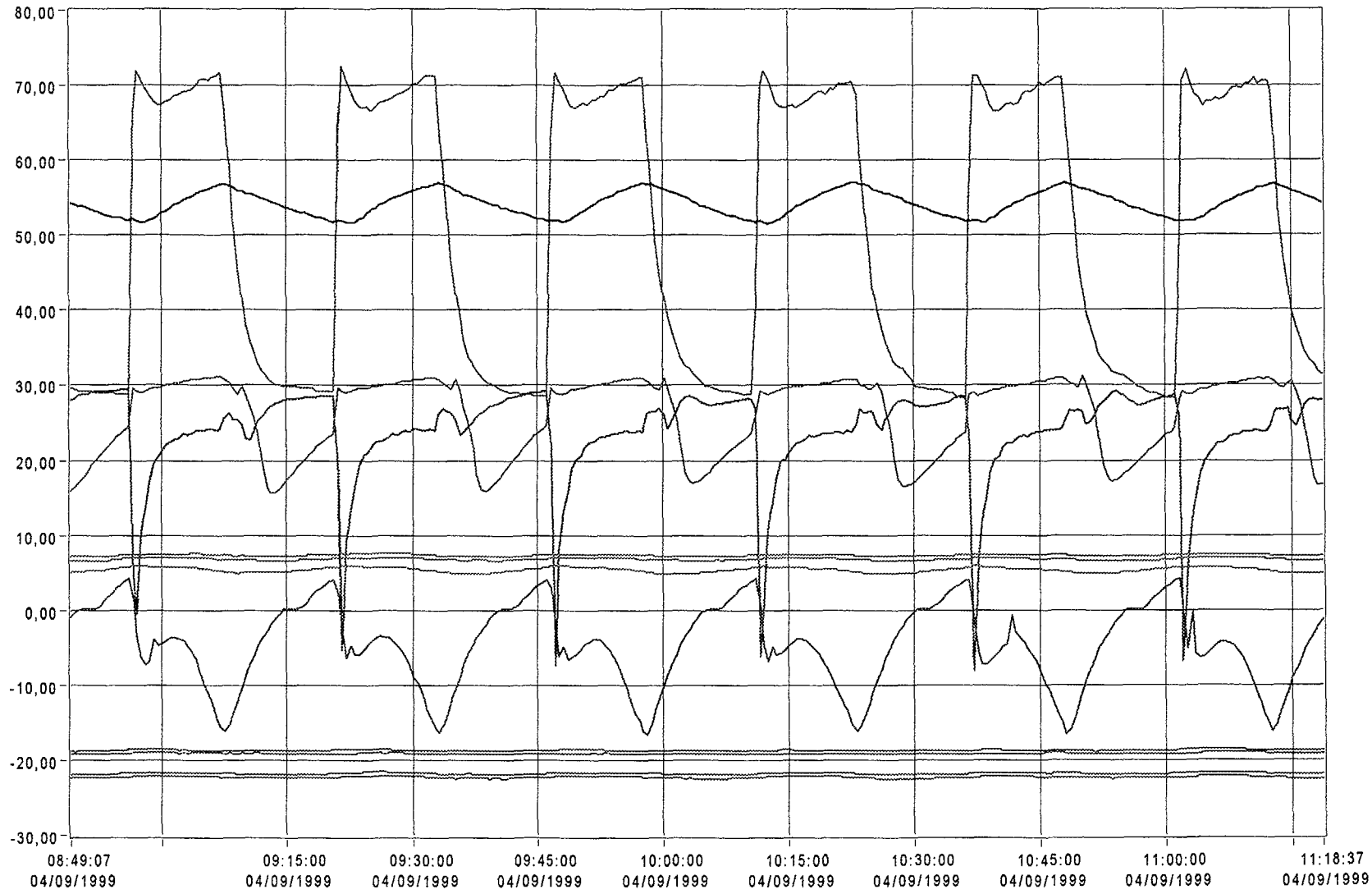
Descrizione DD300-25°C-Energy cons-Pos2(00000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 09/04/1999 08.49.07

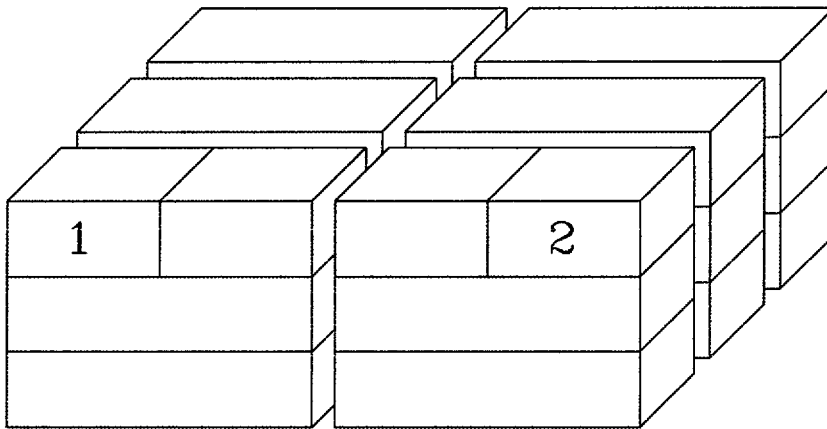
Fine test: 10/04/1999 08.09.35



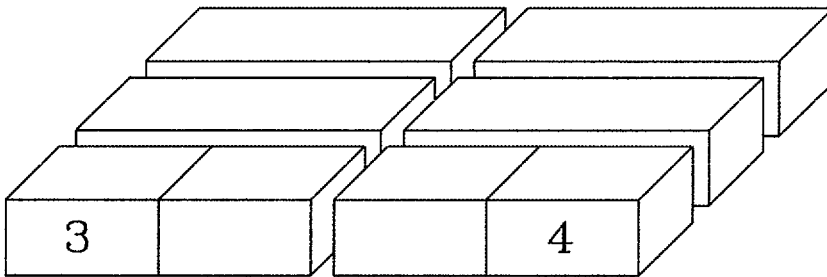
- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

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DD 300
LOADING SCHEME
TOTAL PACKAGES 24 Kg



18 Kg
(SHELF)



6 Kg
(BOTTOM)



WHIRLPOOL EUROPE

CABINET MODEL : **DD 300 (N°00000009) Class T**

TYPE of TEST : **ELECTRICAL TEST (low starting voltage)**

Date	06/05/99	
Ambient temperature	[°C]	43
Refrigerant R 134a	[gr]	150
Compressor : GL 80 AN		
Condenser : wires and tubes		

			Pull down min	
1	Thermostat bulb temp.	[°C]	-15.3	
2	T 1 refrigerator temp.	[°C]	+9.6	
3	T 2 refrigerator temp.	[°C]	+5.8	
4	T 3 refrigerator temp.	[°C]	+2.6	
5	T 1 freezer temp.	[°C]		
6	T 2 freezer temp.	[°C]	-19.4	
7	T 3 freezer temp.	[°C]		
8	Compressor temp.	[°C]	80.5	
9	Condenser in temp.	[°C]	96.4	
10	Condenser out temp.	[°C]	52.7	
11	Oil cooler in temp.	[°C]	60.7	
12	Oil cooler out temp.	[°C]	70.7	
13	Suction pipe temp.	[°C]	33.3	
	Refrig. temp. (Avr)	[°C]	+6.0	
	Freezer temp. (Avr)	[°C]	-19.4	
	Test Time	[h]	6	
	Voltage	[Volt]	187	
	Frequency	[Hz]	50	
	Current	[A]	1.40	
	Power	[Watt]	169	

Lower starting voltage test at 43°C : 142 Volts

NOTE :



appliances engineering

DD300-43°C-Pull down min-(00000009).dat

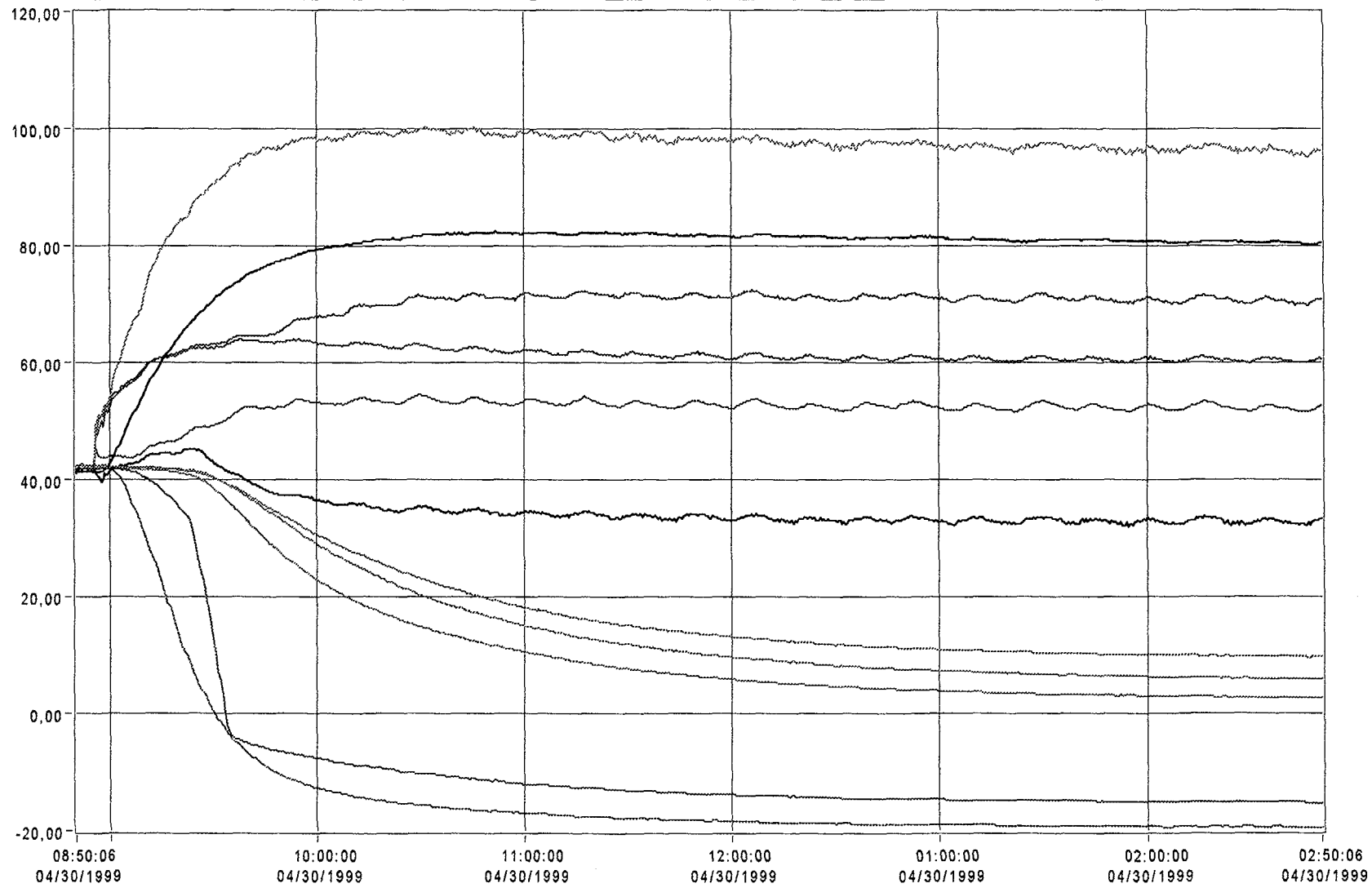
Descrizione DD300-43°C-Pull down min-(00000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 30/04/1999 08.50.06

Fine test: 30/04/1999 14.54.43



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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appliances engineering

DD300-43°C-Lowest start. volt. test (0000009).dat

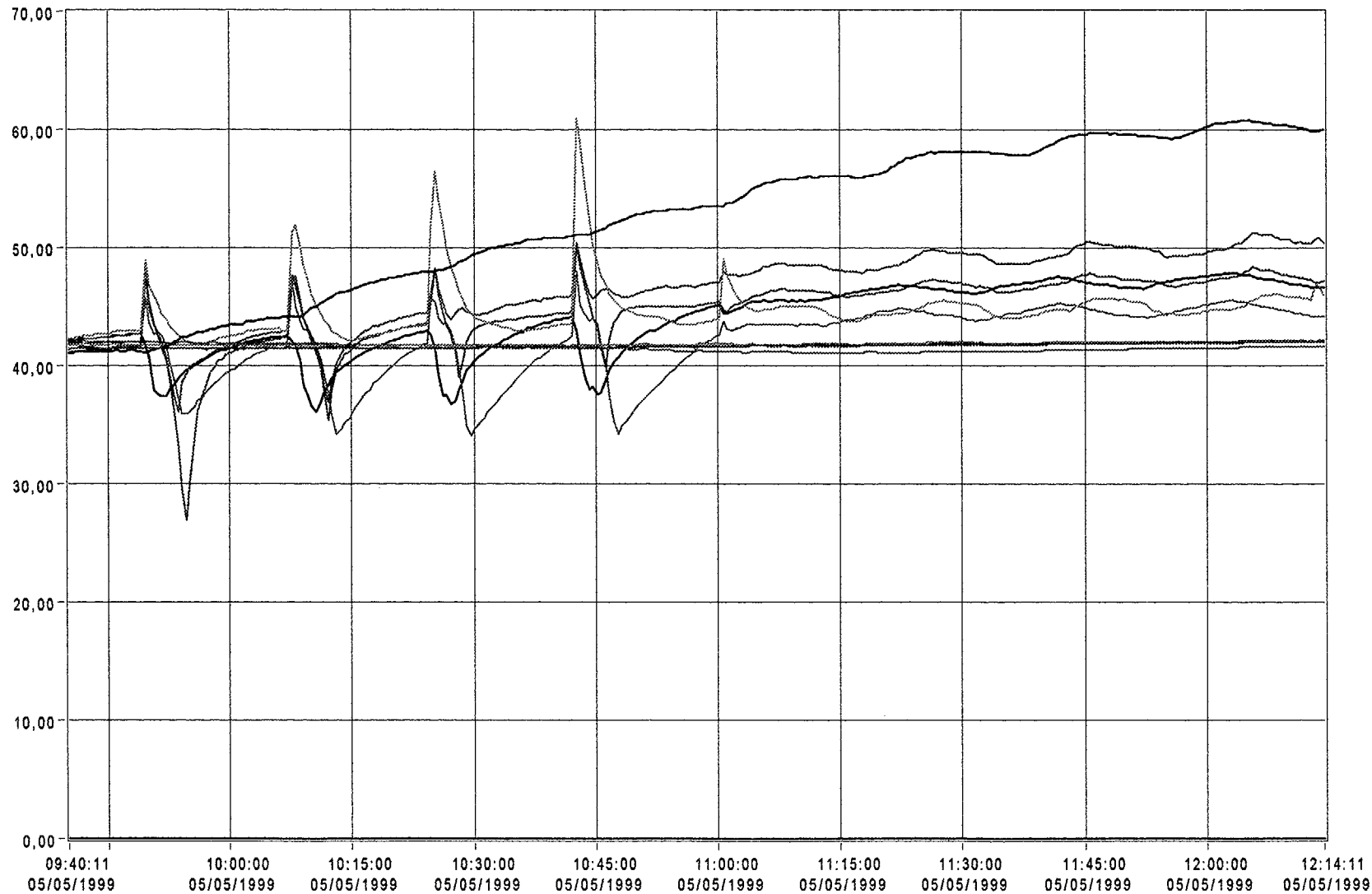
Descrizione DD300-43°C-Lowest start. volt. test (0000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 05/05/1999 09.40.11

Fine test: 05/05/1999 12.14.44



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WHIRLPOOL EUROPE

CABINET MODEL :	DD 300 (N°00000009) Class T
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TYPE of TEST :	ELECTRICAL TEST (low starting voltage)
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Date	11/05/99	
Ambient temperature	[°C]	38
Refrigerant R 134a	[gr]	150
Compressor : GL 80 AN		
Condenser : wires and tubes		

			Pull down min	
1	Thermostat bulb temp.	[°C]	-17.8	
2	T 1 refrigerator temp.	[°C]	+5.6	
3	T 2 refrigerator temp.	[°C]	+1.7	
4	T 3 refrigerator temp.	[°C]	+1.4	
5	T 1 freezer temp.	[°C]		
6	T 2 freezer temp.	[°C]	-20.5	
7	T 3 freezer temp.	[°C]		
8	Compressor temp.	[°C]	75.2	
9	Condenser in temp.	[°C]	91.0	
10	Condenser out temp.	[°C]	47.8	
11	Oil cooler in temp.	[°C]	56.7	
12	Oil cooler out temp.	[°C]	65.1	
13	Suction pipe temp.	[°C]	29.0	
Refrig. temp. (Avr)		[°C]	+2.9	
Freezer temp. (Avr)		[°C]	-20.5	
Test Time		[h]	6	
Voltage		[Volt]	187	
Frequency		[Hz]	50	
Current		[A]	1.39	
Power		[Watt]	164	

Lower starting voltage test at 38°C : 162 Volts

NOTE :



appliances engineering

DD300-38°C-Pull down min (00000009).dat

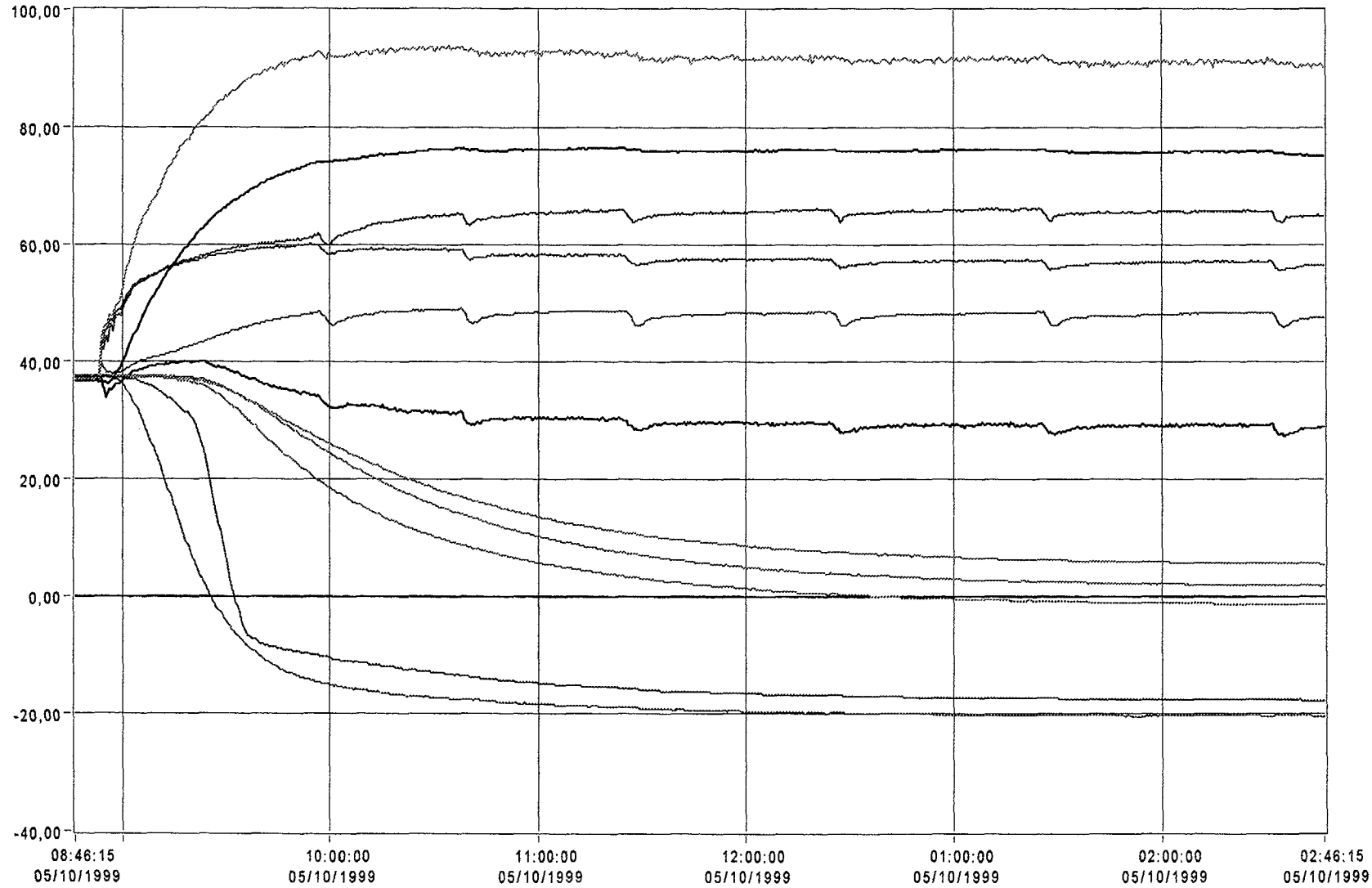
Descrizione DD300-38°C-Pull down min (00000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 10/05/1999 08.46.15

Fine test: 10/05/1999 14.53.21



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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DD300-38°C-Lowest start. volt. test (00000009).dat

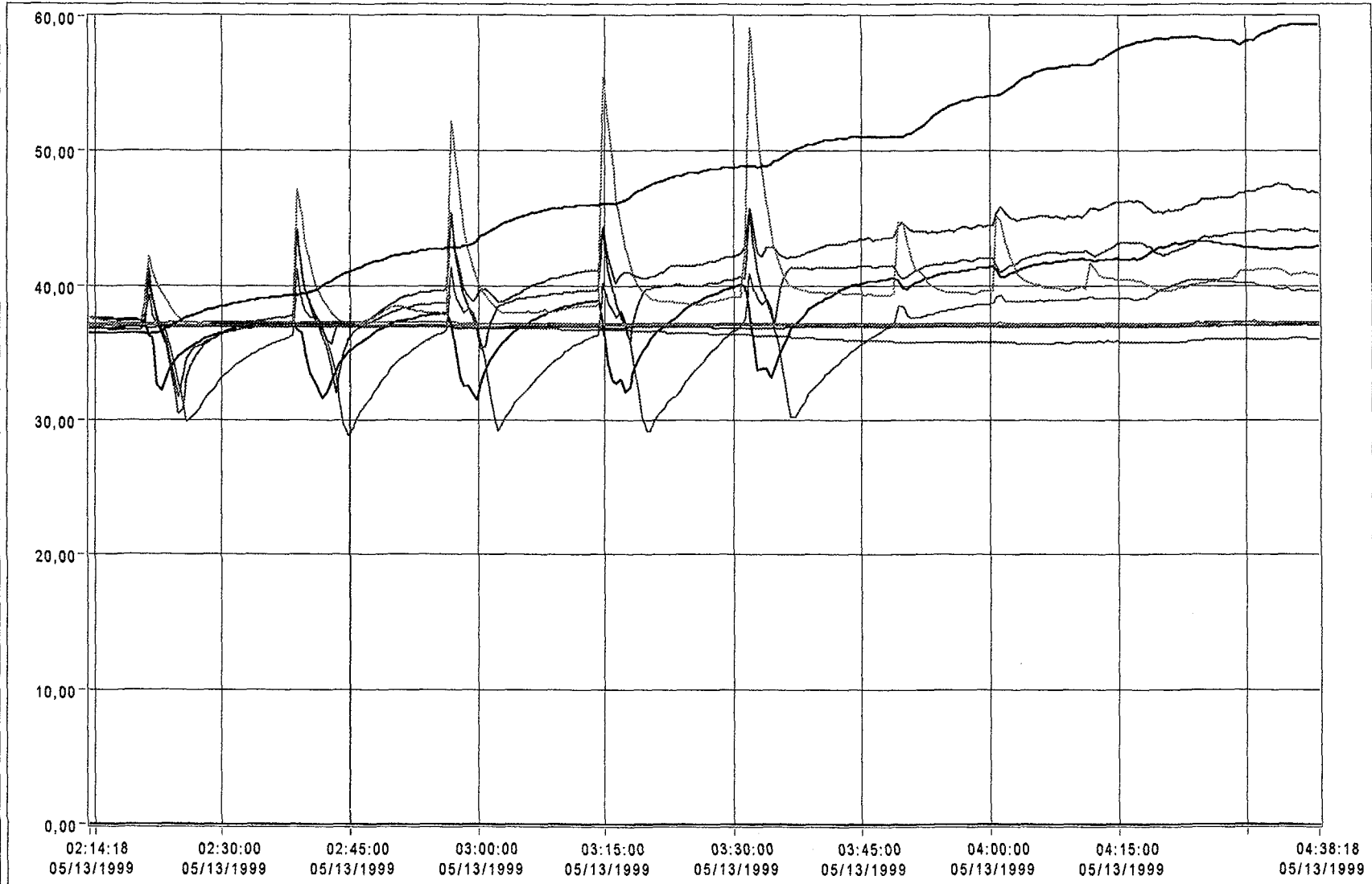
Descrizione DD300-38°C-Lowest start. volt. test (00000009)

ID Posizione: CAMERA 1 POSIZIONE A

Sampling Time: 30

Inizio test: 13/05/1999 14.14.18

Fine test: 13/05/1999 16.38.50



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.

22210-3



PERFORMANCES TESTS

MODEL

WHIRLPOOL-NEEASAE

DD410 - N° 00000006

DD410 - N° 00000006 - Class T

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LOW STARTING VOLTAGE	



WHIRLPOOL EUROPE

CABINET MODEL : **DD 410 (N°0000006) Class T**

TYPE of TEST : **THERMOSTAT CONTROL**

Date	31/05/99		Compressor : GL 90 AN
Ambient temperature	[°C]	43	Condenser : wires and tubes
Refrigerant R 134a	[gr]	210	

Thermostat setting			7 / 7	3 / 7		1.5 / 7	
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-17.8	+4.4	-17.3	+4.5	-15.5
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+5.7	+10.3	+8.8	+12.0	+11.2
4	T 2 refrigerator temp.	[°C]	+4.2	+9.6	+7.0	+11.2	+9.5
5	T 3 refrigerator temp.	[°C]	+2.4	+8.4	+5.1	+9.9	+7.6
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-19.6	-10.7	-16.4	-9.3	-13.1
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	81.6	72.2	81.4	71.8	80.1
10	Condenser in temp.	[°C]	97.7	43.2	98.5	43.4	98.9
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	58.8	43.4	59.1	39.8	59.3
13	Oil cooler in temp.	[°C]	59.1	46.6	59.5	46.9	60.8
14	Oil cooler out temp.	[°C]	60.5	48.1	61.0	48.6	62.2
15	Suction pipe temp.	[°C]	43.0	50.3	42.3	50.6	41.6
	Refrig. temp. (Avr)	[°C]	+4.1	+8.2		+10.2	
	Freezer temp. (Avr)	[°C]	-19.6	-13.5		-11.2	
	Test Time	[h]	24	24		24	
	Running Time	[%]	100	72.2		58.3	
	Energy consumption	[Kwh/24h]		3.772		3.216	
	Voltage	[Volt]	220	220		220	
	Current	[A]	1.78	2.03	1.80	2.00	1.83
	Power	[Watt]	196	290	206	287	216

NOTE :



appliances engineering

DD410-43°C-Vuoto-Pos3(00000006).dat

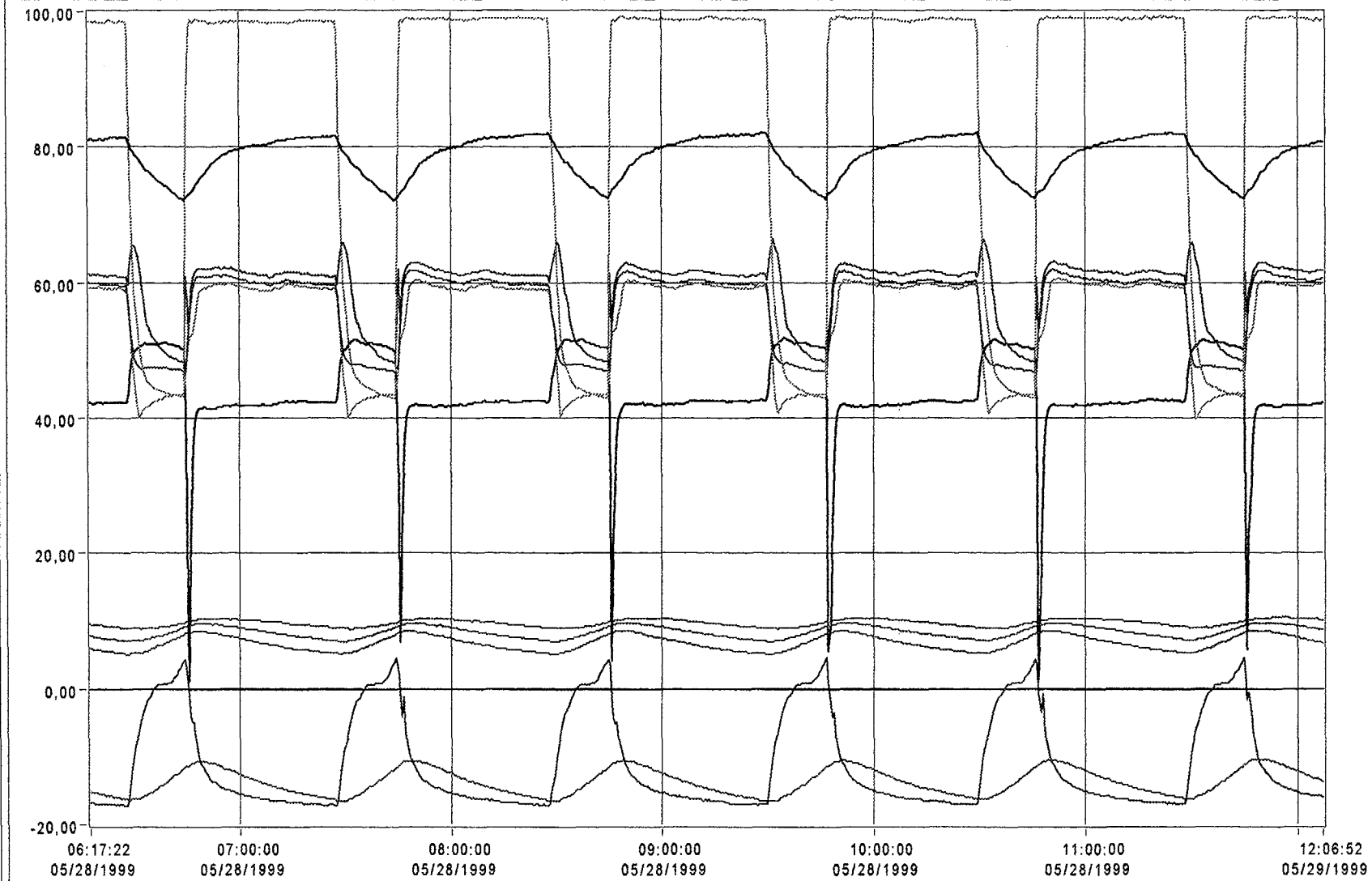
Descrizione DD410-43°C-Thermostat control-Pos3(00000006)

ID Posizione: CAMERA 2 POSIZIONE C

Sampling Time: 30

Inizio test: 28/05/1999 18.17.22

Fine test: 29/05/1999 08.14.08



Thermo. bulb
 T 1 refrigerator
 T 2 refrigerator
 T 3 refrigerator
 T 2 freezer
 Compressor
 Condenser in
 Oil cooler in
 Oil cooler out
 Condenser out
 Suction pipe



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DD410-43°C-Vuoto-Pos1.5(00000006).dat

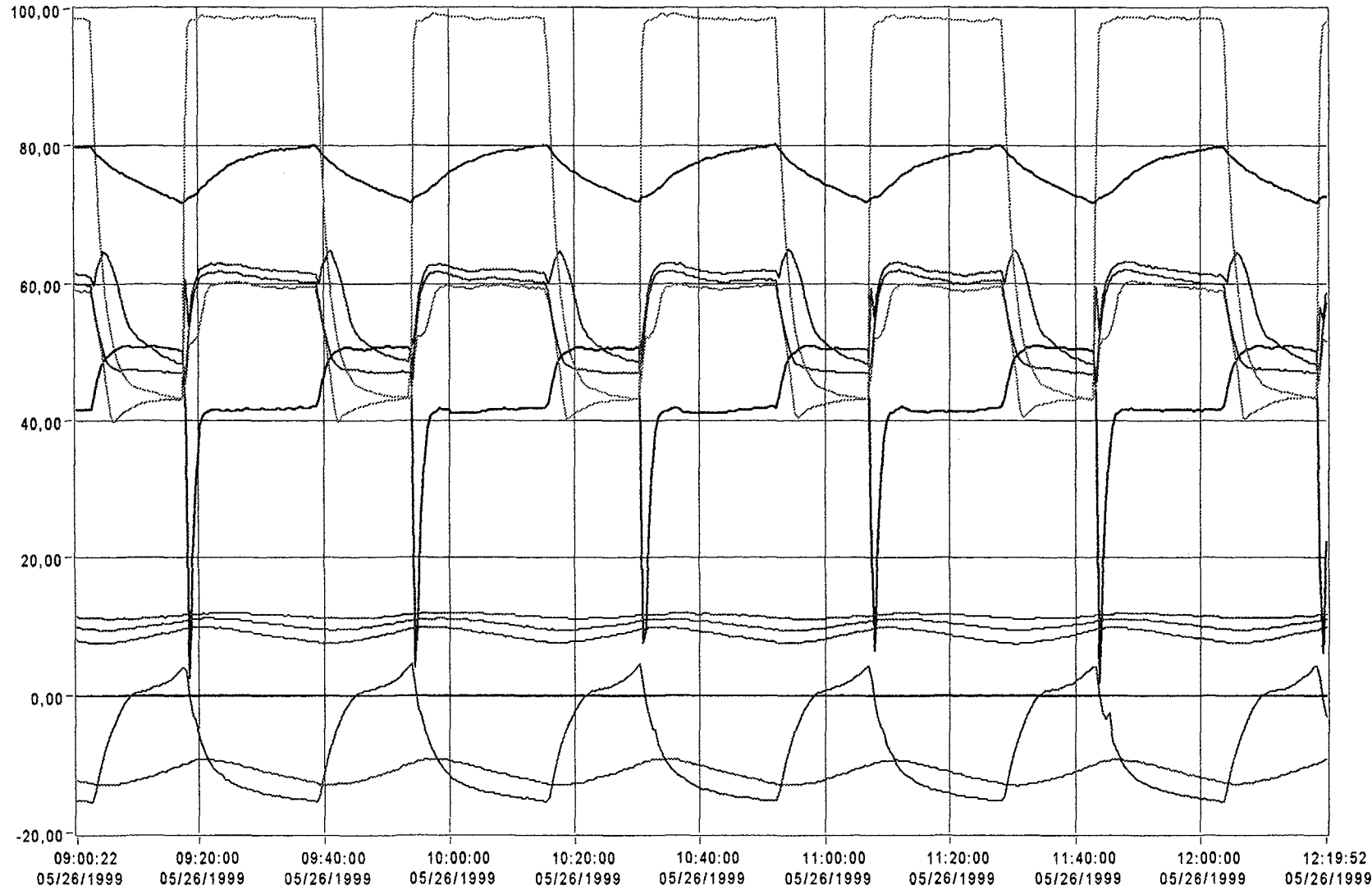
Descrizione DD410-43°C-Thermostat control-Pos1.5(00000006)

ID Posizione: CAMERA 2 POSIZIONE C

Sampling Time: 30

Inizio test: 26/05/1999 09.00.22

Fine test: 27/05/1999 08.38.47



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°00000006) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	03/06/99		Compressor : GL 90 AN
Ambient temperature	[°C]	38	Condenser : wires and tubes
Refrigerant R 134a	[gr]	210	

Thermostat setting			7 / 7	4.5 / 7		3.5 / 7	
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-21.0	+4.6	-20.5	+4.4	-18.2
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+2.9	+7.7	+4.4	+9.5	+8.4
4	T 2 refrigerator temp.	[°C]	+1.4	+7.3	+2.6	+8.8	+6.7
5	T 3 refrigerator temp.	[°C]	-0.3	+6.3	+0.9	+7.7	+4.8
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-21.6	-11.1	-20.6	-10.8	-15.4
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	76.8	64.3	75.8	65.2	73.7
10	Condenser in temp.	[°C]	91.1	38.5	90.2	38.6	90.0
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	54.4	38.9	53.3	36.8	53.3
13	Oil cooler in temp.	[°C]	54.7	41.9	54.0	42.2	54.3
14	Oil cooler out temp.	[°C]	56.1	43.1	55.4	43.4	55.6
15	Suction pipe temp.	[°C]	39.7	44.6	38.9	45.0	37.7
	Refrig. temp. (Avr)	[°C]	+1.3	+4.9		+7.6	
	Freezer temp. (Avr)	[°C]	-21.6	-15.8		-13.1	
	Test Time	[h]	24	24		24	
	Running Time	[%]	100	78.2		56.9	
	Energy consumption	[Kwh/24h]		3.723		2.924	
	Voltage	[Volt]	220	220		220	
	Current	[A]	1.78	1.99	1.76	2.00	1.81
	Power	[Watt]	186	271	187	283	203

NOTE :



appliances engineering

DD410-38°C-Vuoto-Pos4.5(00000006).dat

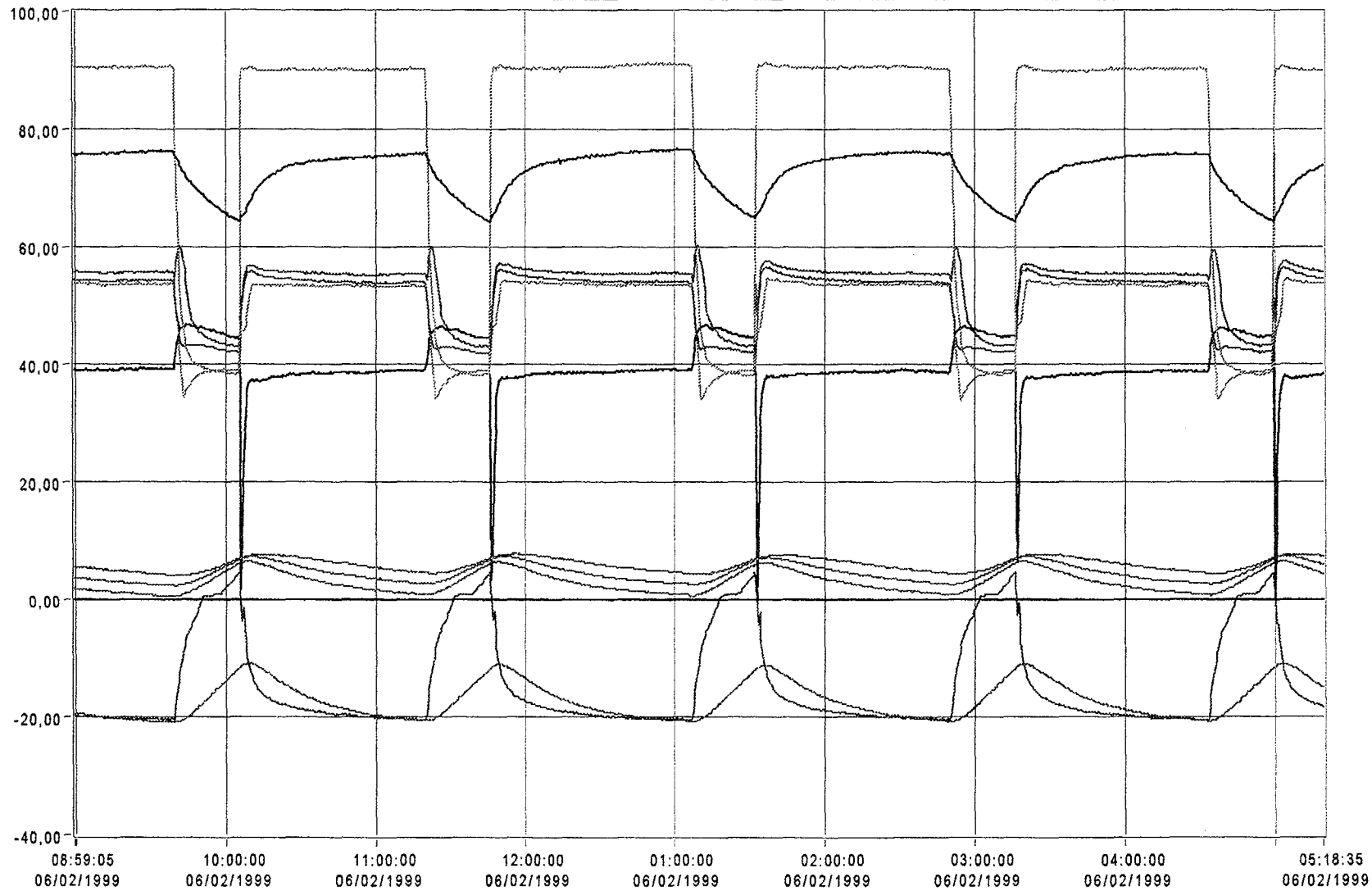
Descrizione DD410-38°C-Thermostat control-Pos4.5(00000006)

ID Posizione: CAMERA 2 POSIZIONE C

Sampling Time: 30

Inizio test: 02/06/1999 08.59.05

Fine test: 03/06/1999 08.45.32



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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DD410-38°C-Vuoto-Pos3.5(00000006).dat

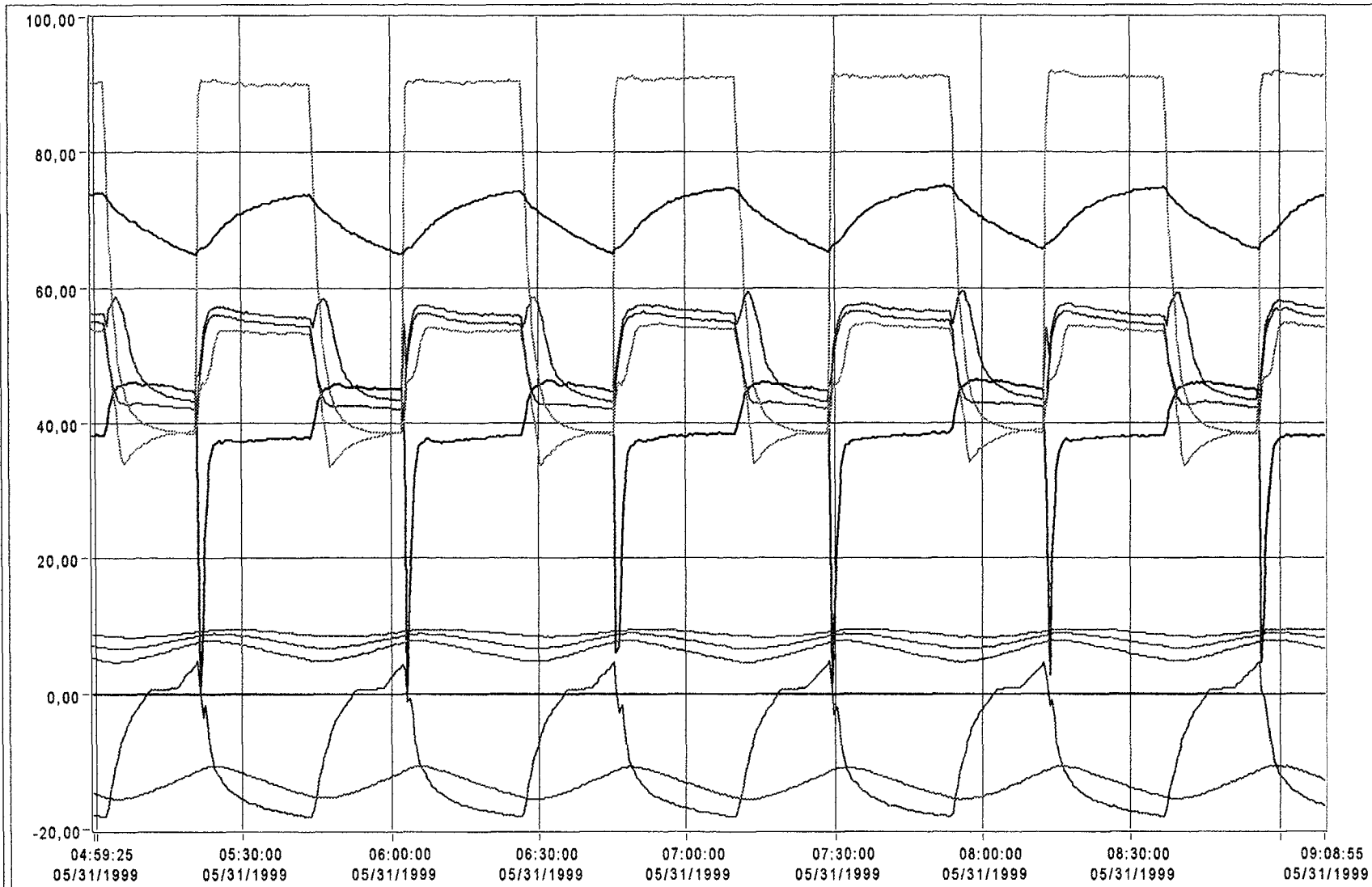
Descrizione DD410-38°C-Thermostat control-Pos3.5(00000006)

ID Posizione: CAMERA 2 POSIZIONE C

Sampling Time: 30

Inizio test: 31/05/1999 16.59.25

Fine test: 01/06/1999 08.45.40



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°00000006) Class T

TYPE of TEST : LOADLESS RUNNING

Date	04/06/99	Compressor : GL 90 AN
Ambient temperature	[°C] 32	Condenser : wires and tubes
Refrigerant R 134a	[gr] 210	

Thermostat setting		7 / 7					
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-24.0				
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	-1.3				
4	T 2 refrigerator temp.	[°C]	-2.8				
5	T 3 refrigerator temp.	[°C]	-4.4				
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-24.5				
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	69.5				
10	Condenser in temp.	[°C]	81.9				
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	47.4				
13	Oil cooler in temp.	[°C]	48.0				
14	Oil cooler out temp.	[°C]	49.4				
15	Suction pipe temp.	[°C]	34.3				
	Refrig. temp. (Avr)	[°C]	-2.8				
	Freezer temp. (Avr)	[°C]	-24.5				
	Test Time	[h]	24				
	Running Time	[%]	100				
	Energy consumption	[Kwh/24h]					
	Voltage	[Volt]	220				
	Current	[A]	1.75				
	Power	[Watt]	171				

NOTE :



WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°0000006) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	14/06/99		Compressor : GL 90 AN
Ambient temperature	[°C]	25	Condenser : wires and tubes
Refrigerant R 134a	[gr]	210	

Thermostat setting		5 / 7		4 / 7			
T.C.		ON	OFF	ON	OFF	ON	OFF
1	Thermostat bulb temp. [°C]	+4.7	-22.2	+4.7	-20.0		
2	Damper bulb temp. [°C]						
3	T 1 refrigerator temp. [°C]	+6.5	+4.4	+7.4	+6.4		
4	T 2 refrigerator temp. [°C]	+6.4	+2.8	+7.2	+5.2		
5	T 3 refrigerator temp. [°C]	+5.9	+1.0	+6.6	+3.5		
6	T 1 freezer temp. [°C]						
7	T 2 freezer temp. [°C]	-10.9	-18.3	-10.0	-14.3		
8	T 3 freezer temp. [°C]						
9	Compressor temp. [°C]	46.2	59.0	45.7	56.7		
10	Condenser in temp. [°C]	27.3	70.8	26.1	70.8		
11	Condenser m.p. temp. [°C]						
12	Condenser out temp. [°C]	27.2	38.6	26.3	39.5		
13	Oil cooler in temp. [°C]	30.0	40.7	28.7	42.3		
14	Oil cooler out temp. [°C]	31.0	41.5	30.0	43.2		
15	Suction pipe temp. [°C]	32.3	26.9	31.4	27.9		
	Refrig. temp. (Avr) [°C]	+4.5		+6.0			
	Freezer temp. (Avr) [°C]	-14.6		-12.1			
	Test Time [h]	24		24			
	Running Time [%]	38.2		31.6			
	Energy consumption [Kwh/24h]	1.802		1.570			
	Voltage [Volt]	220		220			
	Current [A]	1.98	1.78	1.99	1.80		
	Power [Watt]	266	178	270	190		

NOTE :



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DD410-25°C-Vuoto-Pos5(00000006).dat

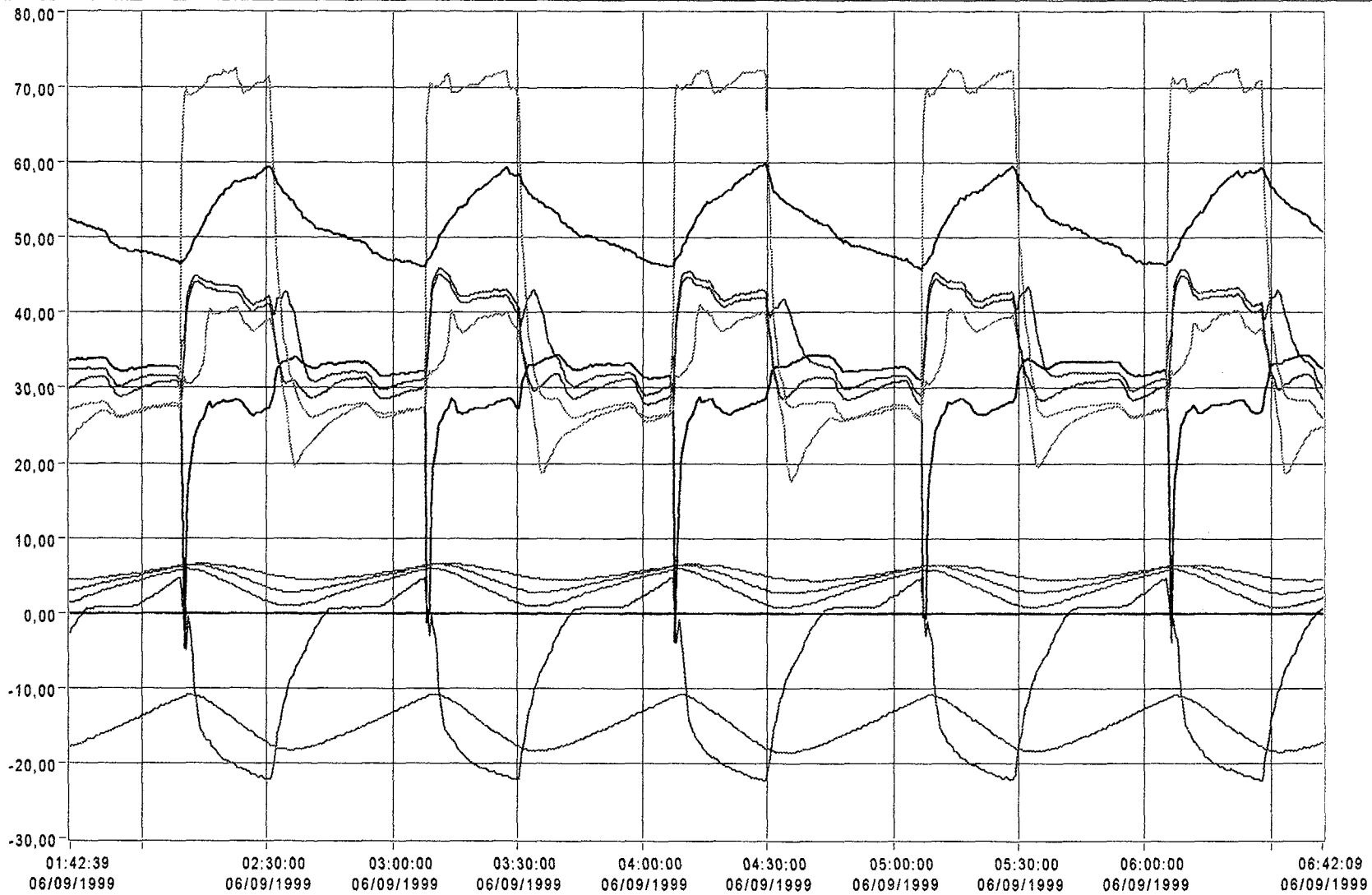
Descrizione DD410-25°C-Thermostat control-Pos5(00000006)

ID Posizione: CAMERA 2 POSIZIONE C

Sampling Time: 30

Inizio test: 09/06/1999 13.42.39

Fine test: 10/06/1999 08.45.00



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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DD410-25°C-Vuoto-Pos4(00000006).dat

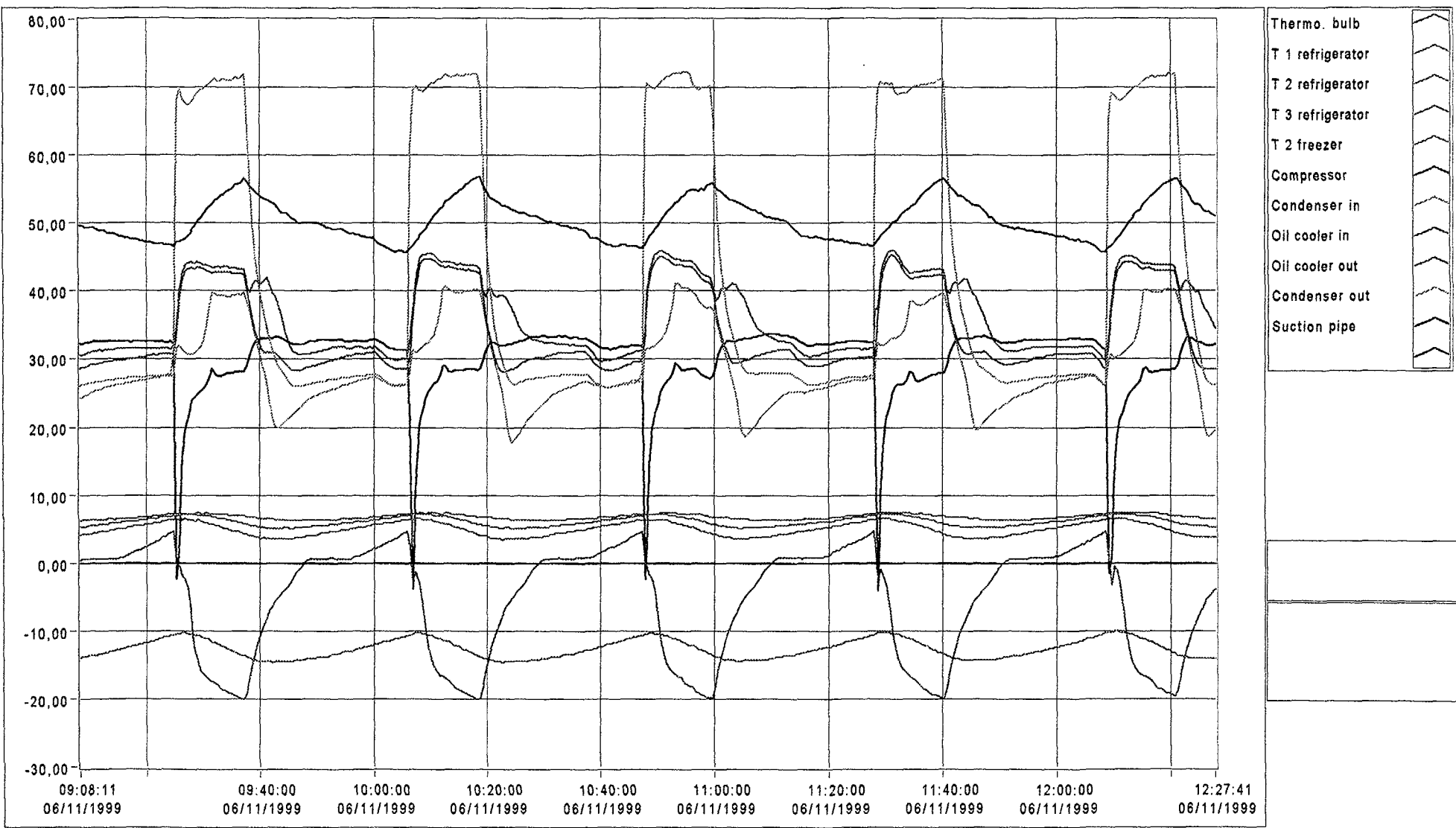
Descrizione DD410-25°C-Thermostat control-Pos4(00000006)

ID Posizione: CAMERA 2 POSIZIONE C

Sampling Time: 30

Inizio test: 11/06/1999 09.08.11

Fine test: 11/06/1999 17.29.20



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WHIRLPOOL EUROPE

CABINET MODEL : **DD 410 (N°00000006) Class T**

TYPE of TEST : **THERMOSTAT CONTROL**

Date	16/06/99		Compressor : GL 90 AN
Ambient temperature	[°C]	18	Condenser : wires and tubes
Refrigerant R 134a	[gr]	210	

Thermostat setting		6 / 7		4 / 7			
T.C.		ON	OFF	ON	OFF	ON	OFF
1	Thermostat bulb temp. [°C]	+4.7	-25.3	+4.7	-19.6		
2	Damper bulb temp. [°C]						
3	T 1 refrigerator temp. [°C]	+5.3	+1.3	+6.5	+5.8		
4	T 2 refrigerator temp. [°C]	+5.5	-0.5	+6.4	+5.1		
5	T 3 refrigerator temp. [°C]	+5.2	-2.4	+5.9	+3.8		
6	T 1 freezer temp. [°C]						
7	T 2 freezer temp. [°C]	-8.8	-21.9	-9.7	-13.5		
8	T 3 freezer temp. [°C]						
9	Compressor temp. [°C]	34.0	50.8	34.5	42.0		
10	Condenser in temp. [°C]	19.7	61.1	20.2	60.0		
11	Condenser m.p. temp. [°C]						
12	Condenser out temp. [°C]	19.6	30.9	19.6	25.8		
13	Oil cooler in temp. [°C]	21.6	33.8	22.3	36.3		
14	Oil cooler out temp. [°C]	22.4	34.7	22.9	37.4		
15	Suction pipe temp. [°C]	23.8	20.7	24.1	19.1		
	Refrig. temp. (Avr) [°C]	+2.4		+6.0			
	Freezer temp. (Avr) [°C]	-15.3		-11.6			
	Test Time [h]	24		24			
	Running Time [%]	30.1		20.4			
	Energy consumption [Kwh/24h]	1.343		0.988			
	Voltage [Volt]	220		220			
	Current [A]	1.99	1.76	1.98	1.86		
	Power [Watt]	270	166	262	204		

NOTE :



appliances engineering

DD410-18°C-Vuoto-Pos6(0000006).dat

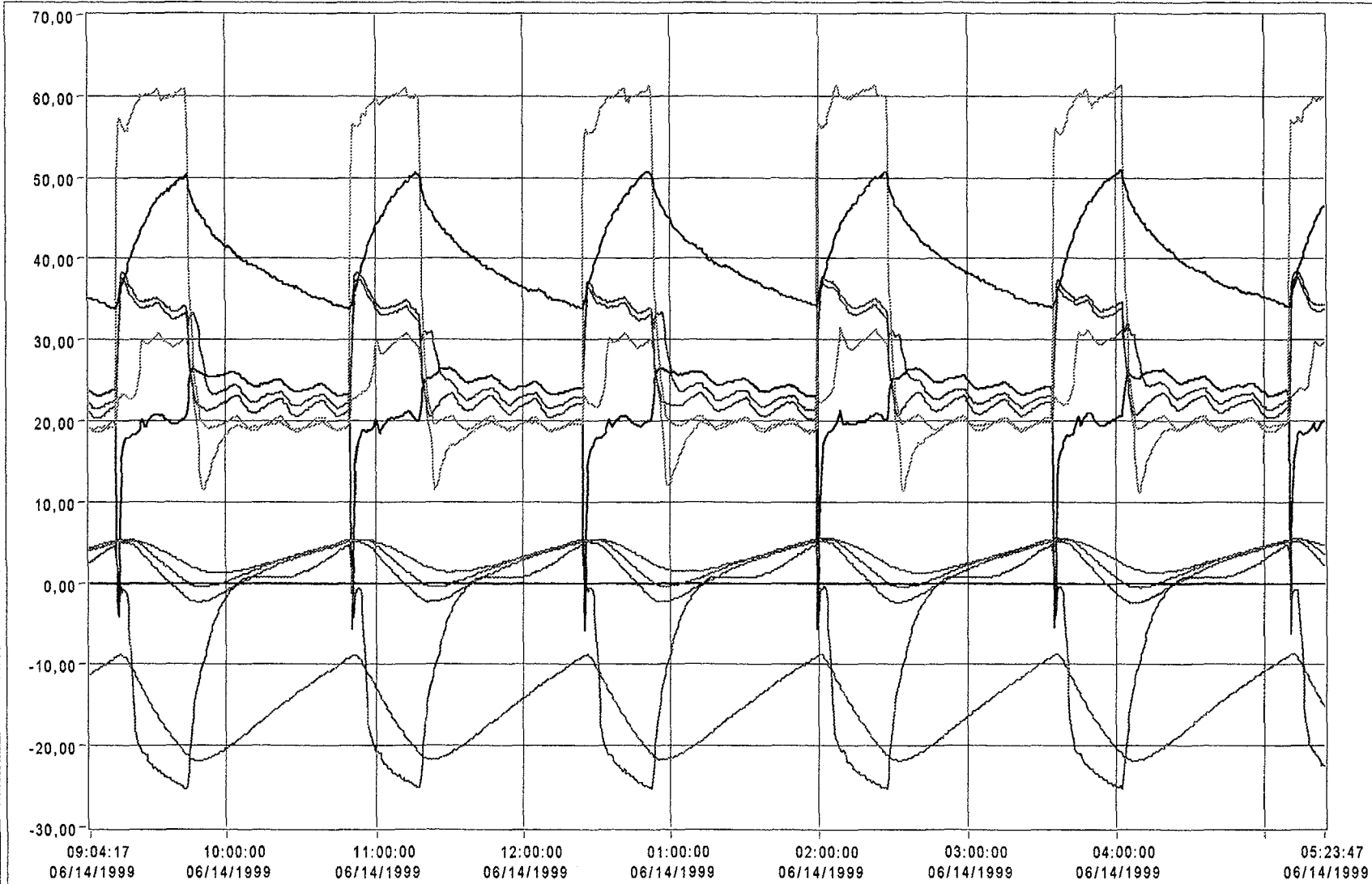
Descrizione DD410-18°C-Thermostat control-Pos6(0000006)

ID Posizione: CAMERA 2 POSIZIONE C

Sampling Time: 30

Inizio test: 14/06/1999 09.04.17

Fine test: 15/06/1999 08.33.15



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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appliances engineering

DD410-18°C-Vuoto-Pos4(00000006).dat

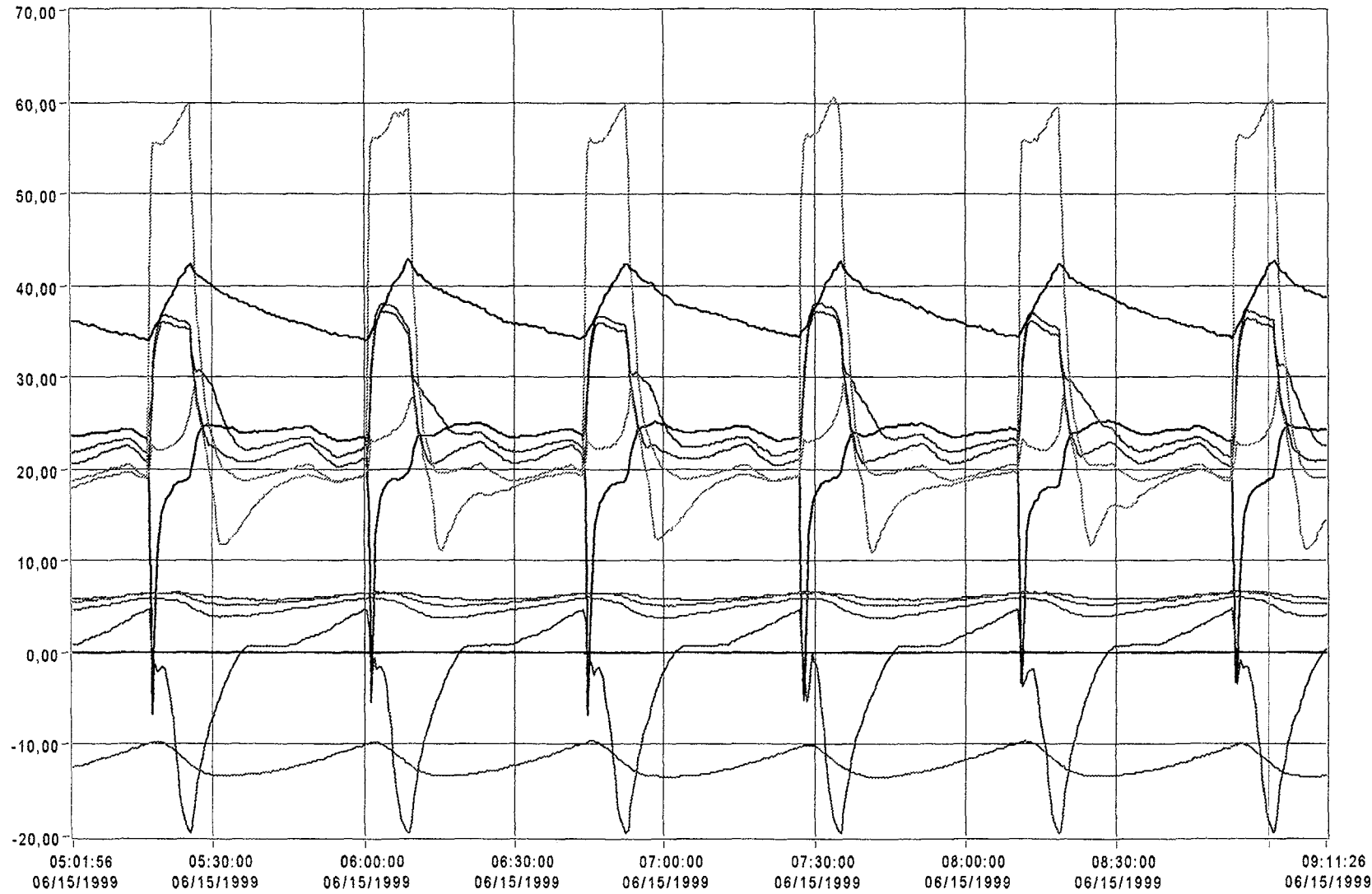
Descrizione DD410-18°C-Thermostat control-Pos4(00000006)

ID Posizione: CAMERA 2 POSIZIONE C

Sampling Time: 30

Inizio test: 15/06/1999 17.01.56

Fine test: 16/06/1999 08.39.46



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL :	DD 410 (N°00000006) Class T
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TYPE of TEST :	PULL DOWN
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Date	22/06/99	Compressor : GL 90 AN
Refrigerant R 134a	[gr] 210	Condenser : wires and tubes

Ambient temperature	[°C]	43	38	
Thermostat setting		7 / 7	7 / 7	
T.C.				
1	Thermostat bulb temp.	[°C]	-15.8	-19.8
2	Damper bulb temp.	[°C]		
3	T 1 refrigerator temp.	[°C]	+7.7	+4.1
4	T 2 refrigerator temp.	[°C]	+5.3	+2.5
5	T 3 refrigerator temp.	[°C]	+3.3	+1.1
6	T 1 freezer temp.	[°C]		
7	T 2 freezer temp.	[°C]	-17.8	-19.7
8	T 3 freezer temp.	[°C]		
9	Compressor temp.	[°C]	84.6	78.9
10	Condenser in temp.	[°C]	100.2	90.5
11	Condenser m.p. temp.	[°C]		
12	Condenser out temp.	[°C]	59.8	60.7
13	Oil cooler in temp.	[°C]	61.0	62.8
14	Oil cooler out temp.	[°C]	63.6	63.6
15	Suction pipe temp.	[°C]	43.8	38.5
	Refrig. temp. (Avr)	[°C]	+5.4	+2.6
	Freezer temp. (Avr)	[°C]	-17.8	-19.7
	Test Time	[h]	6	6
	Running Time	[%]	100	100
	Energy consumption	[Kwh/24h]		
	Voltage	[Volt]	220	220
	Current	[A]	1.85	1.80
	Power	[Watt]	200	187

NOTE :



WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°0000006) Class T

TYPE of TEST : STORAGE TEST

Date		18/06/99		Compressor : GL 90 AN			
Storage load	[Kg]	45		Condenser : wires and tubes			
Refrigerant R 134a	[gr]	210					
Ambient temperature	[°C]	43		38		18	
Thermostat setting		3 / 7		4.5 / 7		4.5 / 7	
T.C.		ON	OFF	ON	OFF	ON	OFF
1	Thermostat bulb temp. [°C]	+4.2	-17.6	+4.5	-20.6	+4.4	-20.5
2	Damper bulb temp. [°C]						
3	T 1 refrigerator temp. [°C]	+9.8	+8.2	+7.6	+4.3	+5.7	+5.0
4	T 2 refrigerator temp. [°C]	+9.0	+6.8	+7.1	+2.4	+5.6	+4.8
5	T 3 refrigerator temp. [°C]	+8.1	+3.5	+6.1	+0.7	+5.2	+3.3
6	T package 1 [°C]	-13.5	-13.9	-14.3	-15.0	-16.5	-16.9
7	T package 2 [°C]	-13.8	-14.3	-14.6	-15.3	-16.8	-17.0
8	T package 3 [°C]	-17.5	-17.7	-19.2	-19.5	-21.0	-21.0
9	T package 4 [°C]	-17.3	-17.5	-18.9	-19.1	-20.7	-20.8
10	T package 5 [°C]						
11	T package 6 [°C]						
12	Compressor temp. [°C]	73.1	81.7	64.5	76.0	34.3	45.4
13	Condenser in temp. [°C]	44.0	99.5	38.8	90.8	21.8	62.3
14	Condenser out temp. [°C]	43.1	59.0	38.9	53.2	20.5	26.4
15	Suction pipe temp. [°C]	50.2	42.1	44.5	39.0	23.5	19.7
	Refrig. temp. (Avr) [°C]	+7.6		+4.7		+4.9	
	Warmer package [°C]	-13.5		-14.3		-16.5	
	Average of packages [°C]	-15.7		-17.0		-18.8	
	Test Time [h]	24		24		24	
	Running Time [%]	76.8		68.4		23.3	
	Energy consumption [Kwh/24h]	3.980		3.395		1.080	
	Voltage [Volt]	220		220		220	
	Current [A]	2.05	1.83	2.00	1.77	1.97	1.85
	Power [Watt]	291	208	270	188	260	201

NOTE :



WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°00000006) Class T

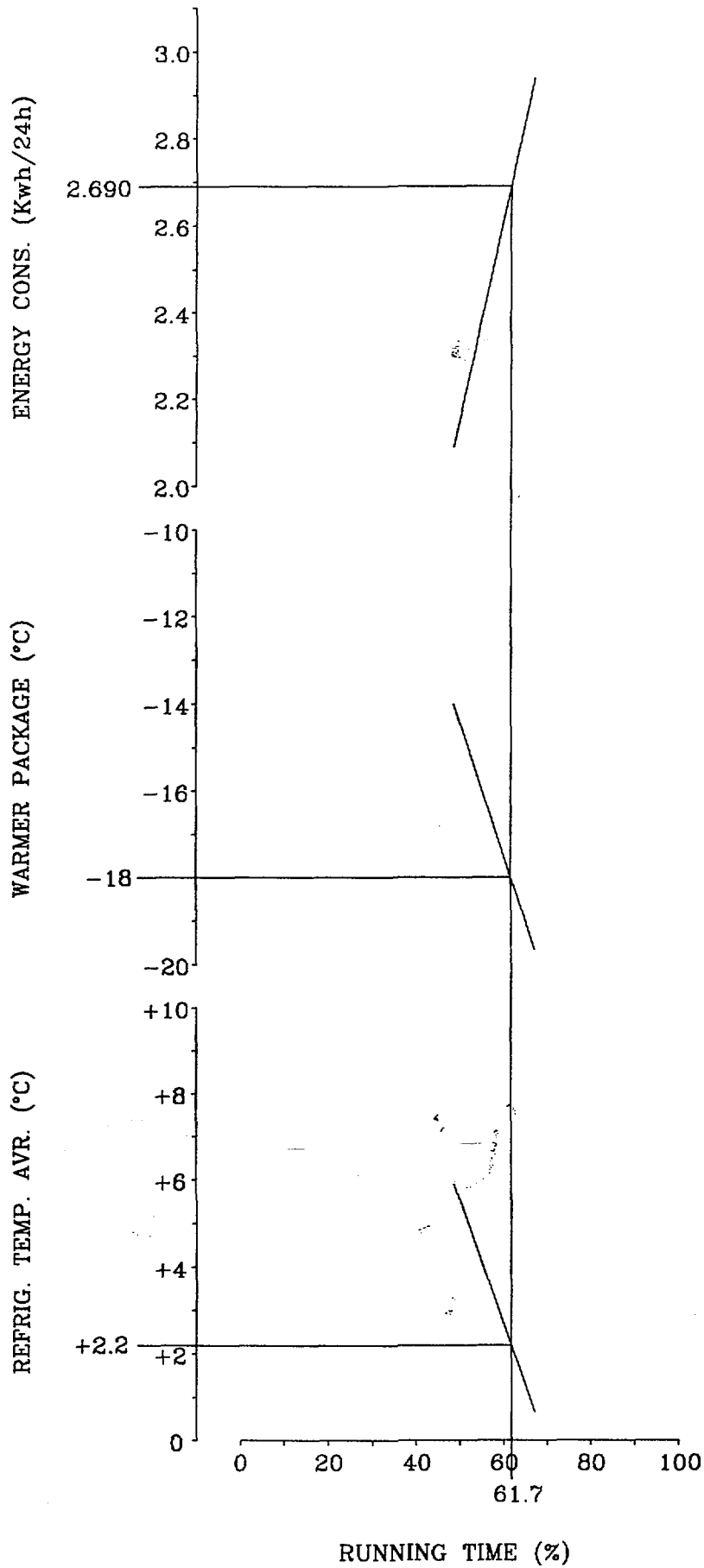
TYPE of TEST : ENERGY CONSUMPTION

Date	21/06/99		Compressor : GL 90 AN	
Ambient temperature	[°C]	32	Condenser : wires and tubes	
Storage load	[Kg]	45		
Refrigerant R 134a	[gr]	210		

Thermostat setting		3.5 / 7		2.5 / 7			
T.C.		ON	OFF	ON	OFF		
1	Thermostat bulb temp.	[°C]	+4.8	-19.6	+4.5	-17.5	
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+5.5	+3.8	+7.5	+6.9	
4	T 2 refrigerator temp.	[°C]	+4.5	+2.2	+6.6	+5.4	
5	T 3 refrigerator temp.	[°C]	+4.0	+0.5	+5.5	+3.6	
6	T package 1	[°C]	-16.9	-17.4	-14.0	-14.2	
7	T package 2	[°C]	-16.7	-17.2	-14.4	-14.6	
8	T package 3	[°C]	-20.5	-20.7	-18.5	-18.6	
9	T package 4	[°C]	-20.3	-20.4	-18.1	-18.2	
10	T package 5	[°C]					
11	T package 6	[°C]					
12	Compressor temp.	[°C]	66.5	77.1	66.5	73.6	
13	Condenser in temp.	[°C]	38.3	86.1	37.4	83.5	
14	Condenser out temp.	[°C]	33.2	49.6	30.6	47.2	
15	Suction pipe temp.	[°C]	36.7	36.5	36.5	34.1	Extrapolated
							at -18 [°C]
	Refrig. temp. (Avr)	[°C]	+3.4		+5.9		+2.2
	Warmer package	[°C]	-16.7		-14.0		-18.0
	Average of packages	[°C]	-18.8		-16.3		
	Test Time	[h]	24		24		
	Running Time	[%]	57.5		48.7		61.7
	Energy consumption	[Kwh/24h]	2.495		2.090		2.690
	Voltage	[Volt]	220		220		
	Current	[A]	1.96	1.90	2.01	1.92	
	Power	[Watt]	268	218	275	228	

NOTE :

DD 410
ENERGY CONSUMPTION (with load) AT 32°C





WHIRLPOOL EUROPE

CABINET MODEL : **DD 410 (N°00000006) Class T**

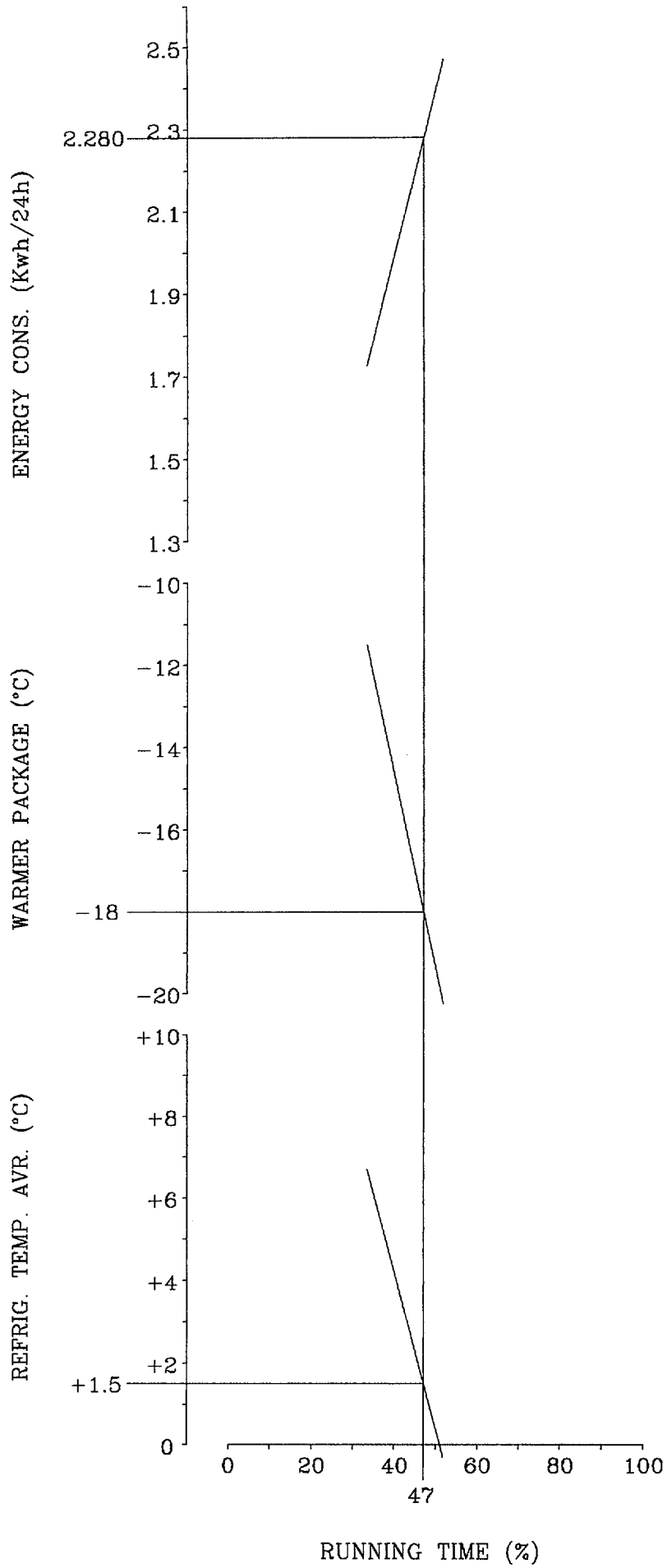
TYPE of TEST : **ENERGY CONSUMPTION**

Date	21/06/99		Compressor : GL 90 AN
Ambient temperature	[°C]	25	Condenser : wires and tubes
Storage load	[Kg]	45	
Refrigerant R 134a	[gr]	210	

Thermostat setting		3.5 / 7		2 / 7		
T.C.		ON	OFF	ON	OFF	
1	Thermostat bulb temp. [°C]	+4.5	-20.0	+4.4	-16.7	
2	Damper bulb temp. [°C]					
3	T 1 refrigerator temp. [°C]	+5.0	+4.1	+8.0	+7.7	
4	T 2 refrigerator temp. [°C]	+4.4	+3.1	+7.0	+6.7	
5	T 3 refrigerator temp. [°C]	+3.2	+1.0	+6.0	+5.0	
6	T package 1 [°C]	-15.5	-15.8	-11.5	-11.7	
7	T package 2 [°C]	-15.7	-15.9	-12.1	-12.3	
8	T package 3 [°C]	-19.8	-19.9	-16.0	-16.1	
9	T package 4 [°C]	-19.6	-19.8	-15.9	-16.0	
10	T package 5 [°C]					
11	T package 6 [°C]					
12	Compressor temp. [°C]	58.1	66.5	57.2	62.1	
13	Condenser in temp. [°C]	31.7	76.0	30.8	74.7	
14	Condenser out temp. [°C]	24.9	37.3	21.8	36.3	
15	Suction pipe temp. [°C]	30.1	27.4	29.5	27.1	Extrapolated
						at -18[°C]
	Refrig. temp. (Avr) [°C]	+3.5		+6.7		+1.5
	Warmer package [°C]	-15.5		-11.5		-18.0
	Average of packages [°C]	-17.7		-13.9		
	Test Time [h]	24		24		
	Running Time [%]	41.8		33.4		47
	Energy consumption [Kwh/24h]	2.067		1.727		2.280
	Voltage [Volt]	220		220		
	Current [A]	1.98	1.86	2.04	1.95	
	Power [Watt]	267	219	281	237	

NOTE :

DD 410
ENERGY CONSUMPTION (with load) AT 25°C





WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°00000006) Class T

TYPE of TEST : ELECTRICAL TEST (low starting voltage)

Date	23/06/99	
Ambient temperature	[°C]	43
Refrigerant R 134a	[gr]	210
Compressor : GL 90 AN		
Condenser : wires and tubes		

			Pull down min	
1	Thermostat bulb temp.	[°C]	-16.3	
2	T 1 refrigerator temp.	[°C]	+6.8	
3	T 2 refrigerator temp.	[°C]	+4.7	
4	T 3 refrigerator temp.	[°C]	+3.0	
5	T 1 freezer temp.	[°C]		
6	T 2 freezer temp.	[°C]	-18.7	
7	T 3 freezer temp.	[°C]		
8	Compressor temp.	[°C]	83.2	
9	Condenser in temp.	[°C]	98.8	
10	Condenser out temp.	[°C]	56.4	
11	Oil cooler in temp.	[°C]	60.8	
12	Oil cooler out temp.	[°C]	63.5	
13	Suction pipe temp.	[°C]	42.9	
	Refrig. temp. (Avr)	[°C]	+4.8	
	Freezer temp. (Avr)	[°C]	-18.7	
	Test Time	[h]	6	
	Voltage	[Volt]	187	
	Frequency	[Hz]	50	
	Current	[A]	1.75	
	Power	[Watt]	186	

Lower starting voltage test at 43°C : 182 Volts

NOTE :



WHIRLPOOL EUROPE

CABINET MODEL : **DD 410 (N°00000006) Class T**

TYPE of TEST : **ELECTRICAL TEST (low starting voltage)**

Date	23/06/99	
Ambient temperature	[°C]	38
Refrigerant R 134a	[gr]	210
Compressor : GL 90 AN		
Condenser : wires and tubes		

			Pull down min
1	Thermostat bulb temp.	[°C]	-19.3
2	T 1 refrigerator temp.	[°C]	+3.9
3	T 2 refrigerator temp.	[°C]	+2.1
4	T 3 refrigerator temp.	[°C]	+0.8
5	T 1 freezer temp.	[°C]	
6	T 2 freezer temp.	[°C]	-19.5
7	T 3 freezer temp.	[°C]	
8	Compressor temp.	[°C]	76.7
9	Condenser in temp.	[°C]	85.6
10	Condenser out temp.	[°C]	59.2
11	Oil cooler in temp.	[°C]	62.9
12	Oil cooler out temp.	[°C]	63.1
13	Suction pipe temp.	[°C]	38.3
Refrig. temp. (Avr)			+2.3
Freezer temp. (Avr)			-19.5
Test Time			6
Voltage			187
Frequency			50
Current			1.70
Power			183

Lower starting voltage test at 38°C : 182 Volts

NOTE :

22210-4



PERFORMANCES TESTS

MODEL

WHIRLPOOL-NEEASAE

DD410 - N° 00000007

DD410 - N° 00000007 - Class T

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LOW STARTING VOLTAGE	
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PULL DOWN MIN (187V)	
LOW STARTING VOLTAGE	



WHIRLPOOL EUROPE

APPLIANCE: DD410		UNITS	R 12	R 134a
REFRIGERANT	Charge	[gr]	210	210
STRUCTURE	H x W x D	[mm]	1600x675x600	1600x675x600
	Ref.gross volume	[litres]	280(aluminium inner liner)	280(aluminium inner liner)
	Frz.gross volume	[litres]	90(aluminium inner liner)	90(aluminium inner liner)
	TOTAL GROSS	[litres]	370	370
	Ref.net volume	[litres]	255	255
	Frz. net volume	[litres]	90	90
	TOTAL NET	[litres]	345	345
	ADJUSTED	[litres]		
COMPRESSOR	Model	name	Embraco B3118B	Zanussi GL 90 AN
	Capacity Ashrae	[kcal/h]	165	200
	C.O.P.	[kcal/Wh]		1.000
DISCHARGE	Lenght of pipe	[mm]		
	Diam.(e)/Diam.(i)	[mm]		
CONDENSER	Type	name	Wires and tubes(oil cooler)	Wires and tubes(oil cooler)
	Width	[mm]	580	580
	Height	[mm]	390-740	390-740
	Area (1 face)	[m ²]		
	Number of pipe		23	23
	Lenght of pipe	[m]		
	Diam.(e)/Diam.(i)	[mm]	4.76/3.36	4.76/3.36
	Volume	[litres]		
FILTER	Weight	[grams]	9	9
CAPILLARY	N2 flow rate	[l/min]	7.3	6.5
	Lenght	[mm]	2500	3000
	Inside diameter	[mm]	0.70	0.70
REFRIGERATOR EVAPORATOR	Type	name	Roll Bond(aluminium)	Roll Bond(aluminium)
	Width	[mm]	560	560
	Height	[mm]	300	300
	Area (1 face)	[m ²]	0.168	0.168
	Number of pipe			
	Lenght of pipe	[m]		
	Diam.(e)/Diam.(i)	[mm]		
Volume	[litres]	0.088	0.088	
FREEZER EVAPORATOR	Type	name	Foamed in(alum.coil 4 faces)	Foamed in(alum.coil 4 faces)
	Width	[mm]	Upper lower 350-sides 350	Upper lower 350-sides 350
	Height	[mm]	500-350	500-350
	Area (1 face)	[m ²]		
	Number of pipe		10-7	10-7
	Lenght of pipe	[m]		
	Diam.(e)/Diam.(i)	[mm]	7.5/6(pressed 11)	7.5/6(pressed 11)
	Volume	[litres]		
THERMOSTAT	Type		Atea A13 0057 (-13/+4.5 -26/+4.5)	Atea A13 0057 (-13/+4.5 -26/+4.5)
TYPE CIRCUIT			C14	C14



WHIRLPOOL EUROPE

CABINET MODEL : **DD 410 (N°00000007) Class T**

TYPE of TEST : **CHARGE DETERMINATION**

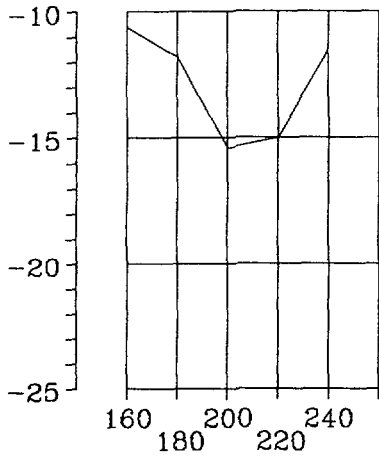
Date	18/02/99	Compressor : GL 90 AN
Ambient temperature	[°C] 43	Condenser : wires and tubes
Refrigerant R 134a	[gr] 210	

T.C.	Charge	[gr]	160	180	200	220	240
	Thermostat setting		MAX				
1	Thermostat bulb temp.	[°C]	-10.6	-11.8	-15.4	-15.0	-11.5
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+12.8	+10.3	+7.0	+7.3	+9.7
4	T 2 refrigerator temp.	[°C]	+11.8	+8.9	+6.3	+6.4	+8.4
5	T 3 refrigerator temp.	[°C]	+9.8	+6.8	+4.1	+4.2	+6.6
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-17.1	-16.6	-18.2	-18.0	-15.7
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	88.8	89.4	88.1	89.1	89.6
10	Condenser in temp.	[°C]	101.8	102.8	101.9	103.9	104.3
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	62.3	62.5	62.0	62.5	63.0
13	Oil cooler in temp.	[°C]	62.2	62.0	62.1	62.2	63.2
14	Oil cooler out temp.	[°C]	63.6	63.7	63.5	63.8	64.6
15	Suction pipe temp.	[°C]	46.6	45.7	43.4	41.7	37.6
	Refrig. temp. (Avr)	[°C]	+11.5	+8.7	+5.8	+6.0	+8.2
	Freezer temp. (Avr)	[°C]	-17.1	-16.6	-18.2	-18.0	-15.7
	Test Time	[h]	24	24	24	24	24
	Running Time	[%]	100	100	100	100	100
	Voltage	[Volt]	220	220	220	220	220
	Current	[A]	1.90	1.92	1.93	1.95	1.96
	Power	[Watt]	216	222	225	230	236

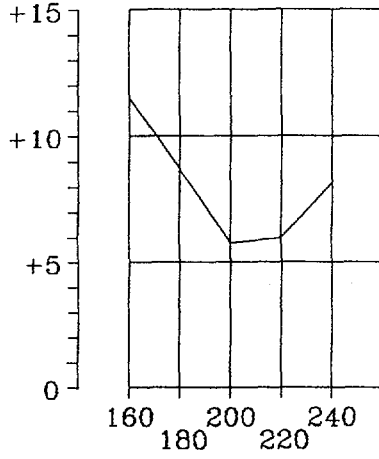
NOTE :

DD 410 Class T
 Charge determination R 134a at 43°C

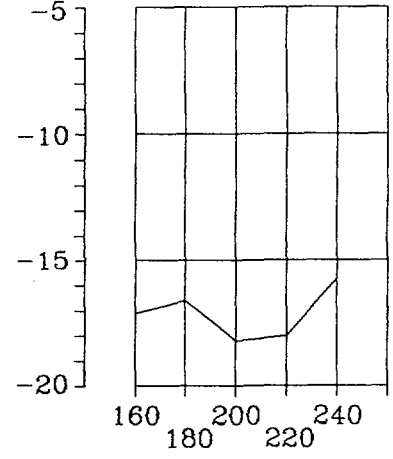
Thermostat



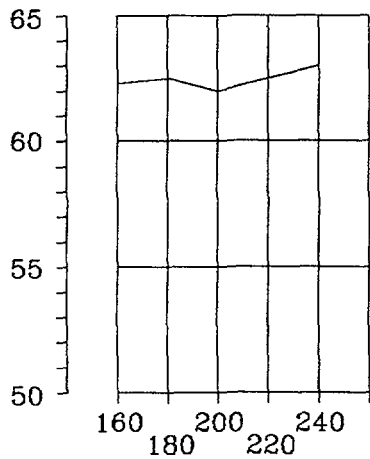
Average refr.



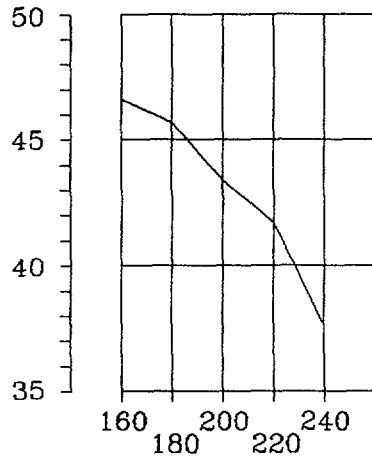
Average freez.



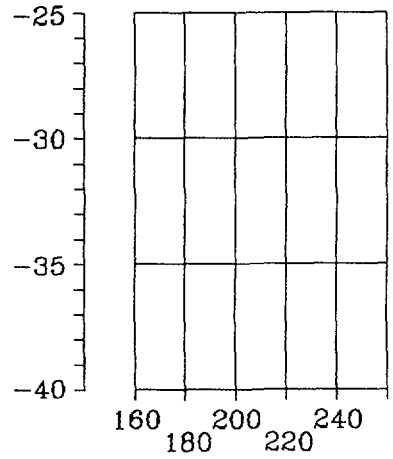
T. condens.



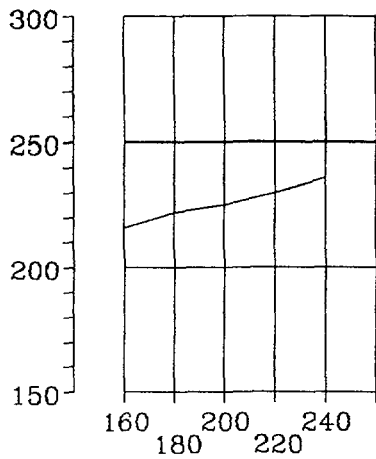
T. suction pipe



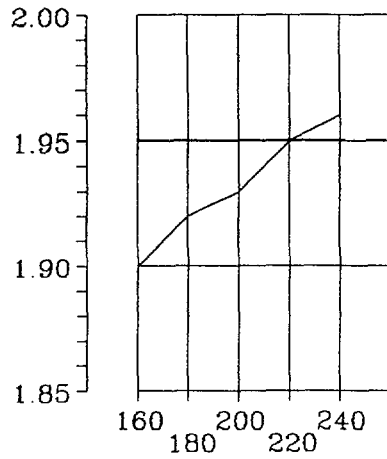
T. suction



Power



Current





WHIRLPOOL EUROPE

CABINET MODEL :	DD 410 (N°0000007) Class T
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TYPE of TEST :	THERMOSTAT CONTROL
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Date	04/05/99		Compressor : GL 90 AN
Ambient temperature	[°C]	43	Condenser : wires and tubes
Refrigerant R 134a	[gr]	210	

Thermostat setting			7 / 7	2.5 / 7		2 / 7	
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-16.4	+4.7	-15.6	+4.2	-14.8
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+6.8	+12.1	+11.1	+12.9	+13.3
4	T 2 refrigerator temp.	[°C]	+5.2	+11.1	+9.4	+11.8	+10.6
5	T 3 refrigerator temp.	[°C]	+3.1	+7.1	+9.8	+8.4	+10.5
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-18.6	-9.1	-13.6	-8.3	-11.7
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	88.4	77.7	87.4	77.6	86.6
10	Condenser in temp.	[°C]	97.8	47.5	98.6	47.0	98.6
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	61.0	43.1	61.1	43.0	61.4
13	Oil cooler in temp.	[°C]	61.4	51.9	61.5	51.5	62.3
14	Oil cooler out temp.	[°C]	63.0	53.3	63.4	53.0	64.0
15	Suction pipe temp.	[°C]	43.1	46.6	43.3	46.6	43.3
	Refrig. temp. (Avr)	[°C]	+5.0	+10.1		+11.0	
	Freezer temp. (Avr)	[°C]	-18.6	-11.3		-10.0	
	Test Time	[h]	24	24		24	
	Running Time	[%]	100	65.3		59.4	
	Energy consumption	[Kwh/24h]		3.646		3.353	
	Voltage	[Volt]	220	220		220	
	Current	[A]	1.86	2.11	1.89	2.11	1.94
	Power	[Watt]	206	306	216	315	232

NOTE :



appliances engineering

DD410-43°C-Vuoto-Pos2.5(00000007).dat

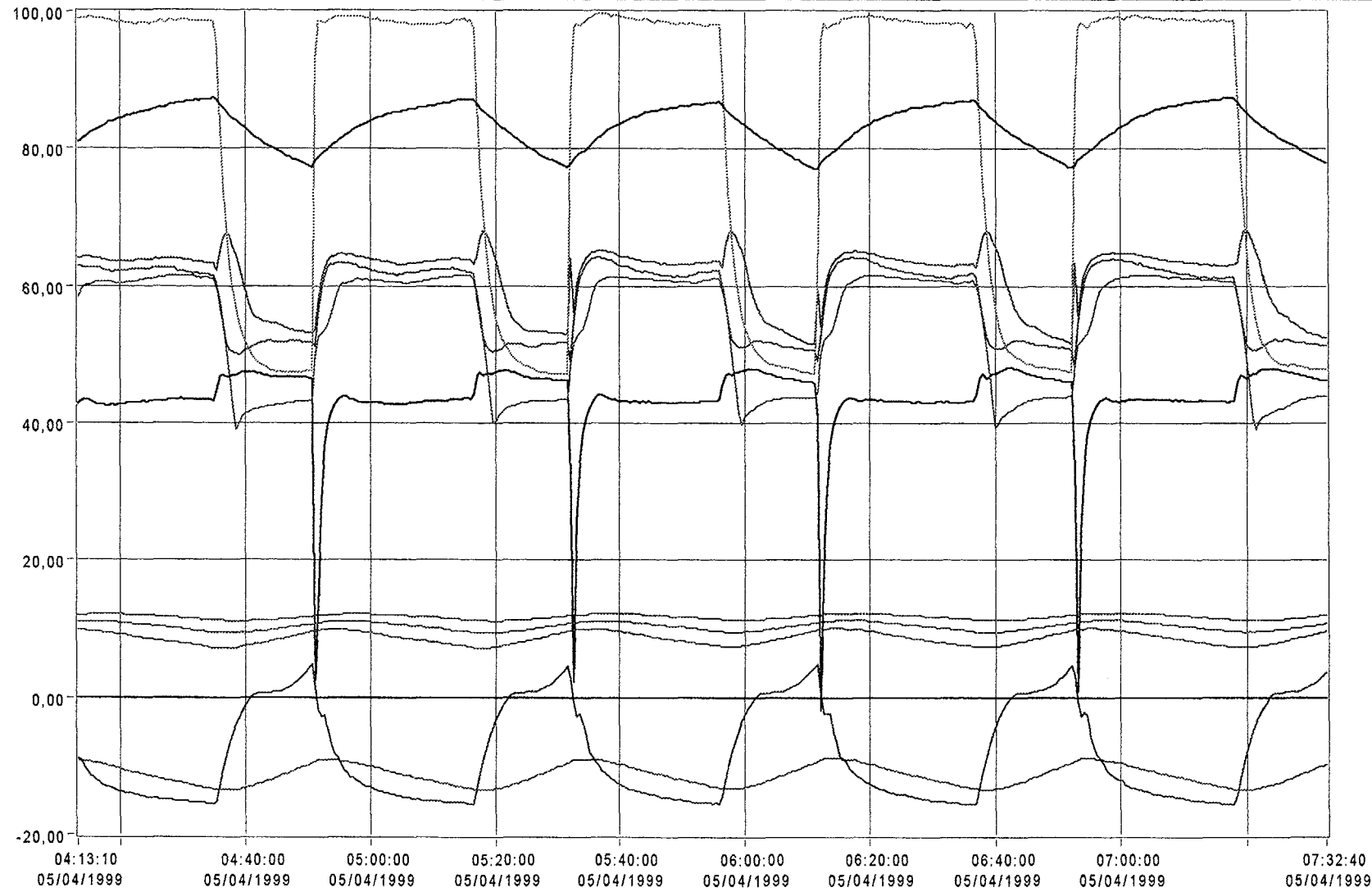
Descrizione DD410-43°C-Thermostat control-Pos2.5(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 04/05/1999 16.13.10

Fine test: 05/05/1999 08.36.53



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.



appliances engineering

DD410-43°C-Vuoto-Pos2(00000007).dat

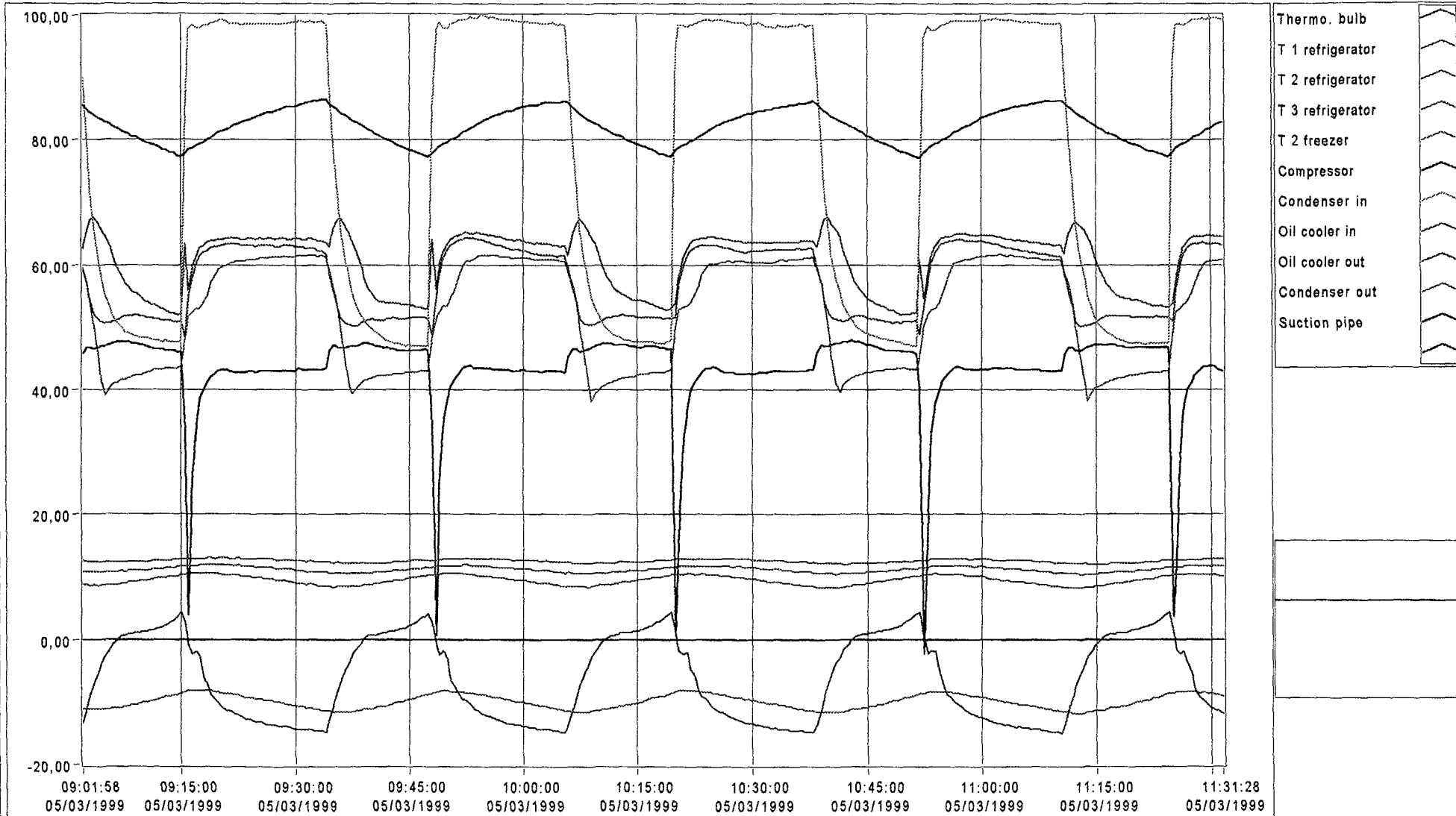
Descrizione DD410-43°C-Thermostat control-Pos2(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 03/05/1999 09.01.58

Fine test: 03/05/1999 16.34.39



Hardware & Software by CA.GI.



WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°00000007) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	10/03/99	Compressor : GL 90 AN
Ambient temperature	[°C] 38	Condenser : wires and tubes
Refrigerant R 134a	[gr] 210	

Thermostat setting		7 / 7	4 / 7		3.5 / 7	
T.C.			ON	OFF	ON	OFF
1	Thermostat bulb temp. [°C]	-20.7	+4.0	-20.0	+4.3	-17.9
2	Damper bulb temp. [°C]					
3	T 1 refrigerator temp. [°C]	+2.7	+8.8	+6.5	+9.9	+8.4
4	T 2 refrigerator temp. [°C]	+1.0	+7.9	+4.5	+8.9	+6.6
5	T 3 refrigerator temp. [°C]	-0.9	+7.1	+2.3	+8.0	+4.4
6	T 1 freezer temp. [°C]					
7	T 2 freezer temp. [°C]	-22.1	-10.4	-18.5	-9.9	-15.9
8	T 3 freezer temp. [°C]					
9	Compressor temp. [°C]	77.7	69.7	82.0	70.0	81.3
10	Condenser in temp. [°C]	84.5	42.5	90.9	42.1	91.2
11	Condenser m.p. temp. [°C]					
12	Condenser out temp. [°C]	52.9	39.5	55.2	39.2	55.0
13	Oil cooler in temp. [°C]	53.4	46.2	55.7	45.5	55.9
14	Oil cooler out temp. [°C]	55.5	46.9	57.9	46.1	58.0
15	Suction pipe temp. [°C]	38.6	40.9	39.6	40.9	39.4
	Refrig. temp. (Avr) [°C]	+0.9	+6.2		+7.7	
	Freezer temp. (Avr) [°C]	-22.1	-14.4		-12.9	
	Test Time [h]	24	24		24	
	Running Time [%]	100	66.7		60.9	
	Energy consumption [Kwh/24h]		3.432		3.205	
	Voltage [Volt]	220	220		220	
	Current [A]	1.84	2.03	1.83	2.07	1.85
	Power [Watt]	190	285	197	296	208

NOTE :



appliances engineering

DD410-38°C-Vuoto-Pos4(00000007).dat

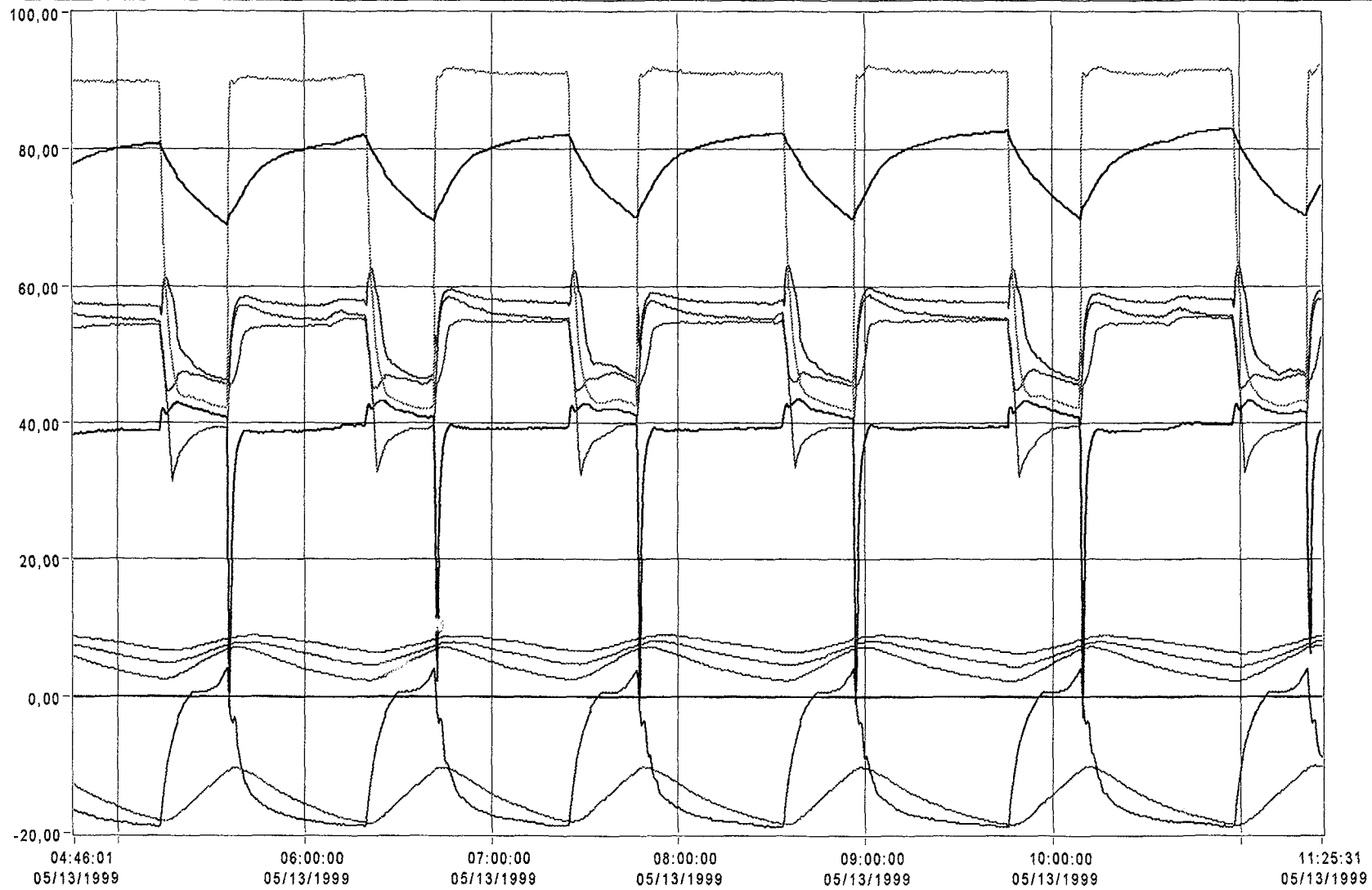
Descrizione DD410-38°C-Thermostat control-Pos4(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 13/05/1999 16.46.01

Fine test: 14/05/1999 08.38.14



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.



appliances engineering

DD410-38°C-Vuoto-Pos3.5(00000007).dat

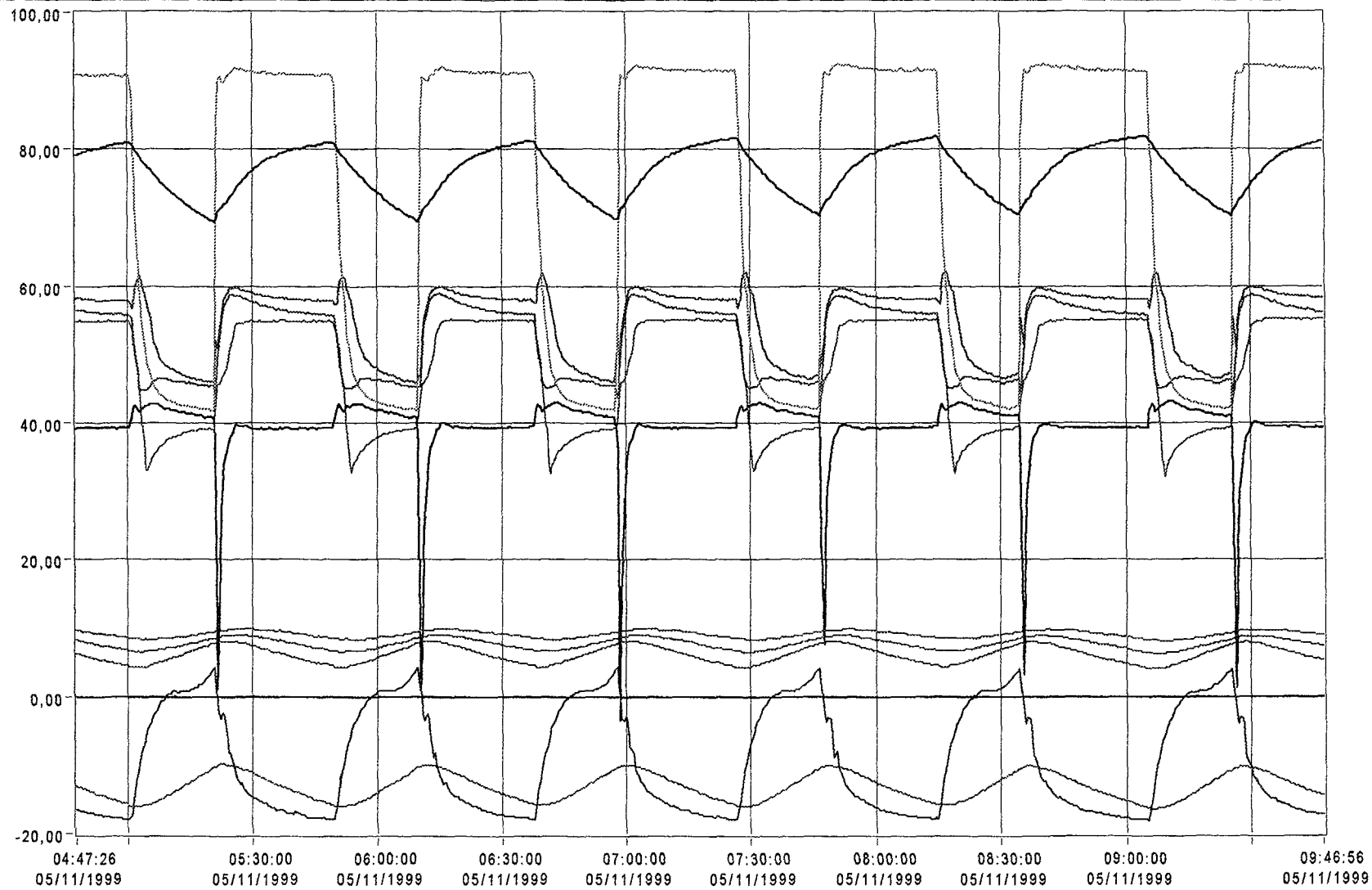
Descrizione DD410-38°C-Thermostat control-Pos3.5(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 11/05/1999 16.47.26

Fine test: 12/05/1999 08.33.38



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.



WHIRLPOOL EUROPE

CABINET MODEL :	DD 410 (N°00000007) Class T
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TYPE of TEST :	LOADLESS RUNNING
----------------	------------------

Date	15/03/99	Compressor : GL 90 AN
Ambient temperature	[°C] 32	Condenser : wires and tubes
Refrigerant R 134a	[gr] 210	

Thermostat setting		7 / 7					
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-24.2				
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+0.5				
4	T 2 refrigerator temp.	[°C]	-1.1				
5	T 3 refrigerator temp.	[°C]	-2.0				
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-24.8				
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	77.5				
10	Condenser in temp.	[°C]	85.3				
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	48.7				
13	Oil cooler in temp.	[°C]	49.8				
14	Oil cooler out temp.	[°C]	52.2				
15	Suction pipe temp.	[°C]	35.9				
	Refrig. temp. (Avr)	[°C]	-0.9				
	Freezer temp. (Avr)	[°C]	-24.8				
	Test Time	[h]	24				
	Running Time	[%]	100				
	Energy consumption	[Kwh/24h]					
	Voltage	[Volt]	220				
	Current	[A]	1.88				
	Power	[Watt]	213				

NOTE :



WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°00000007) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	18/03/99	Compressor : GL 90 AN
Ambient temperature	[°C] 25	Condenser : wires and tubes
Refrigerant R 134a	[gr] 210	

T.C.	Thermostat setting		5 / 7		4 / 7		ON	OFF
			ON	OFF	ON	OFF		
1	Thermostat bulb temp.	[°C]	+4.1	-22.3	+4.0	-19.6		
2	Damper bulb temp.	[°C]						
3	T 1 refrigerator temp.	[°C]	+6.1	+3.8	+7.5	+6.7		
4	T 2 refrigerator temp.	[°C]	+5.7	+2.2	+7.1	+5.7		
5	T 3 refrigerator temp.	[°C]	+5.3	0.0	+6.4	+3.8		
6	T 1 freezer temp.	[°C]						
7	T 2 freezer temp.	[°C]	-11.1	-19.8	-10.5	-14.5		
8	T 3 freezer temp.	[°C]						
9	Compressor temp.	[°C]	49.9	63.8	50.2	60.6		
10	Condenser in temp.	[°C]	33.8	71.5	30.2	71.0		
11	Condenser m.p. temp.	[°C]						
12	Condenser out temp.	[°C]	27.6	38.1	27.6	35.3		
13	Oil cooler in temp.	[°C]	31.1	41.5	32.2	42.0		
14	Oil cooler out temp.	[°C]	34.1	43.5	32.5	43.1		
15	Suction pipe temp.	[°C]	27.7	27.2	28.3	25.8		
	Refrig. temp. (Avr)	[°C]	+3.8		+6.2			
	Freezer temp. (Avr)	[°C]	-15.4		-12.4			
	Test Time	[h]	24		24			
	Running Time	[%]	40.9		31.3			
	Energy consumption	[Kwh/24h]	1.947		1.606			
	Voltage	[Volt]	220		220			
	Current	[A]	2.00	1.81	2.00	1.84		
	Power	[Watt]	271	181	273	193		

NOTE :



appliances engineering

DD410-25°C-Vuoto-Pos5(00000007).dat

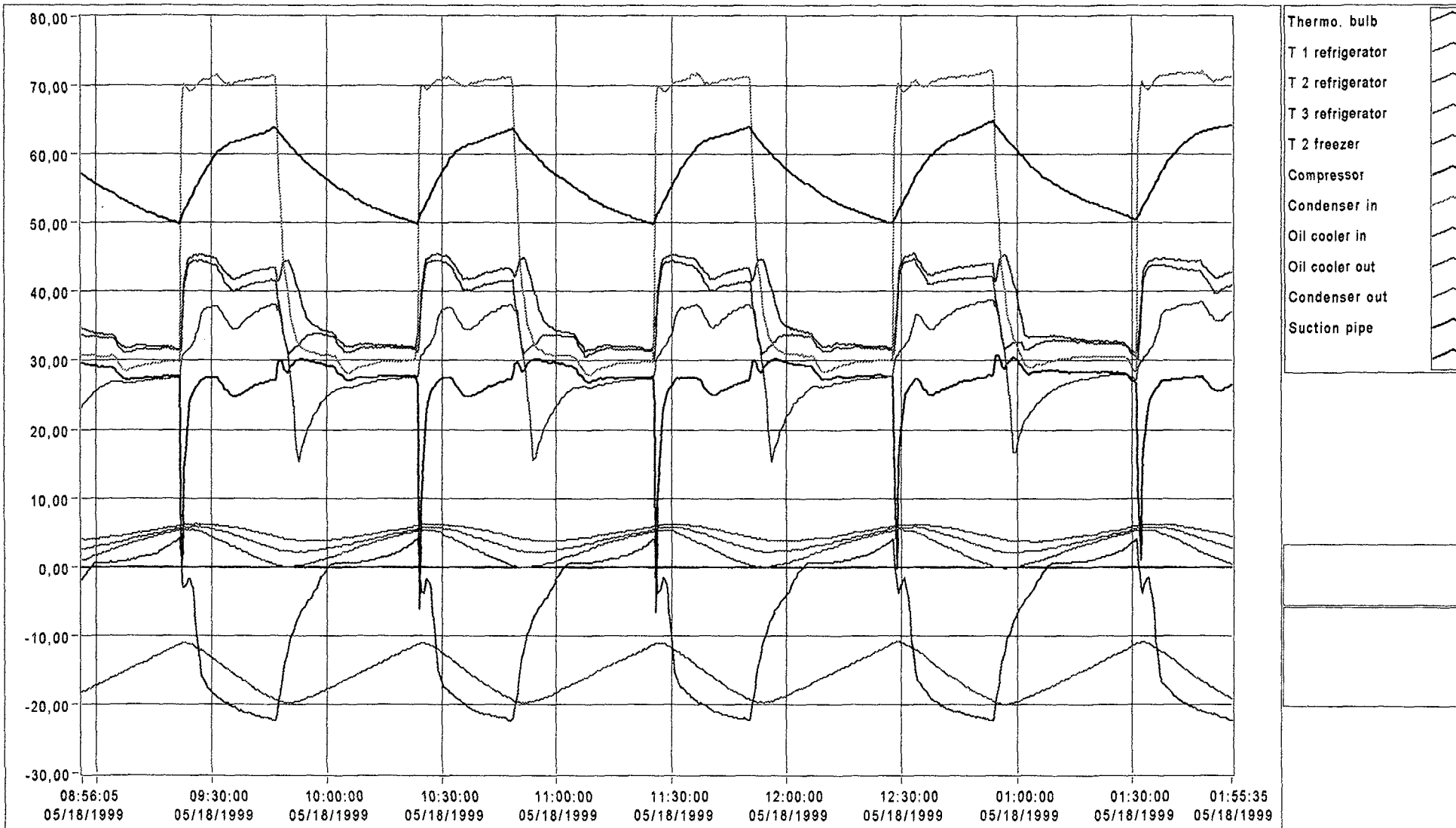
Descrizione DD410-25°C-Thermostat control-Pos5(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 18/05/1999 08.56.05

Fine test: 18/05/1999 17.18.42



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appliances engineering

DD410-25°C-Vuoto-Pos4(00000007).dat

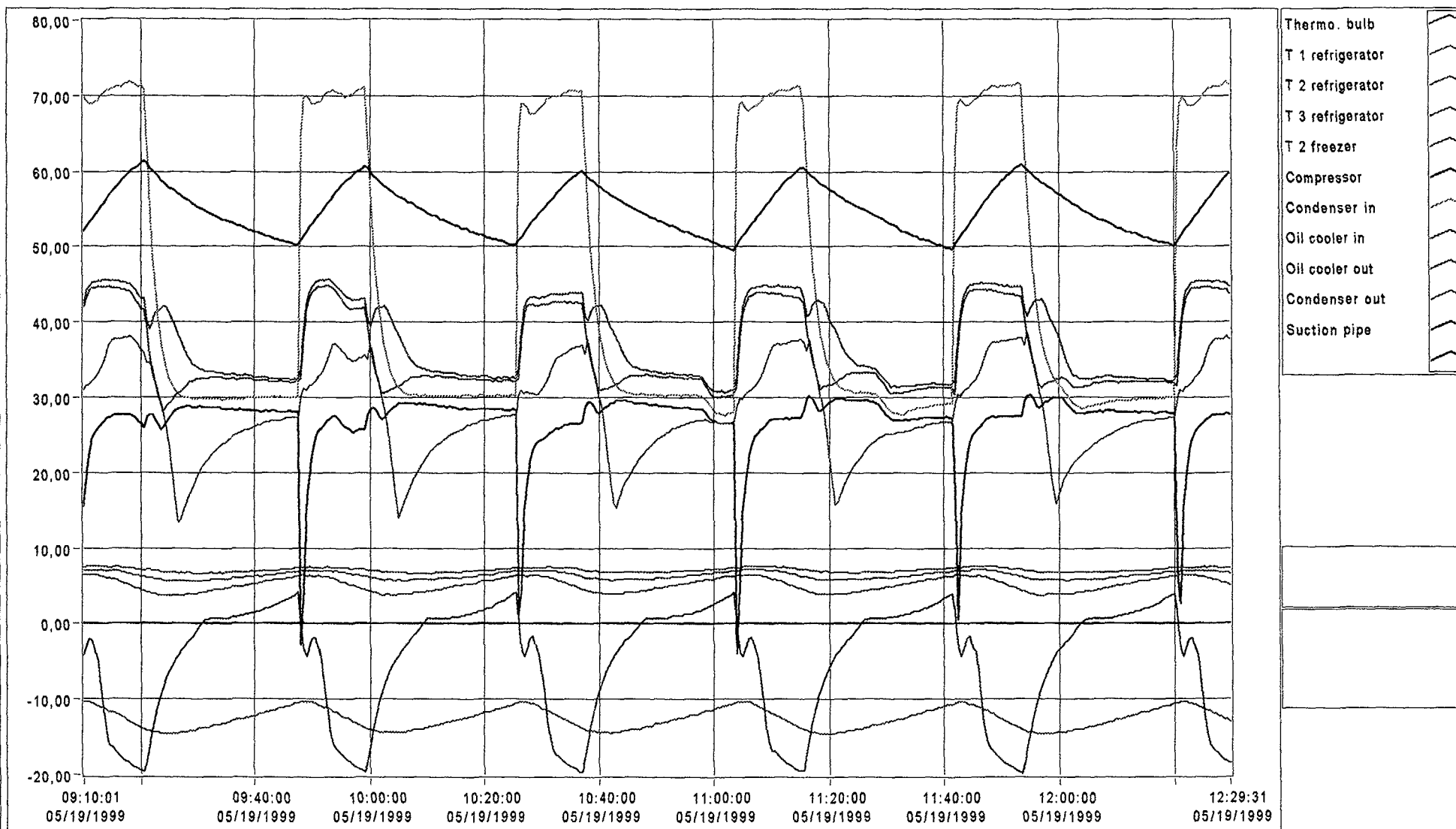
Descrizione DD410-25°C-Thermostat control-Pos4(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 19/05/1999 09.10.01

Fine test: 19/05/1999 15.02.05



Hardware & Software by CA.GI.



WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°00000007) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	23/03/99		Compressor : GL 90 AN
Ambient temperature	[°C]	18	Condenser : wires and tubes
Refrigerant R 134a	[gr]	210	

T.C.	Thermostat setting		5.5 / 7		4.5 / 7		ON	OFF
			ON	OFF	ON	OFF		
1	Thermostat bulb temp.	[°C]	+4.0	-25.0	+4.1	-21.3		
2	Damper bulb temp.	[°C]						
3	T 1 refrigerator temp.	[°C]	+4.6	+2.4	+5.5	+4.7		
4	T 2 refrigerator temp.	[°C]	+4.5	+1.2	+5.4	+4.1		
5	T 3 refrigerator temp.	[°C]	+4.4	-0.9	+5.1	+2.7		
6	T 1 freezer temp.	[°C]						
7	T 2 freezer temp.	[°C]	-10.5	-20.2	-11.3	-16.1		
8	T 3 freezer temp.	[°C]						
9	Compressor temp.	[°C]	34.6	50.4	34.7	45.1		
10	Condenser in temp.	[°C]	18.7	57.7	20.2	56.7		
11	Condenser m.p. temp.	[°C]						
12	Condenser out temp.	[°C]	17.6	23.8	18.8	22.5		
13	Oil cooler in temp.	[°C]	19.9	31.3	21.1	32.3		
14	Oil cooler out temp.	[°C]	20.2	33.0	23.4	33.5		
15	Suction pipe temp.	[°C]	17.0	17.0	18.6	16.5		
	Refrig. temp. (Avr)	[°C]	+2.7		+4.6			
	Freezer temp. (Avr)	[°C]	-15.3		-13.7			
	Test Time	[h]	24		24			
	Running Time	[%]	25.9		21.5			
	Energy consumption	[Kwh/24h]	1.199		1.039			
	Voltage	[Volt]	220		220			
	Current	[A]	2.02	1.79	2.01	1.83		
	Power	[Watt]	273	185	269	195		

NOTE :



appliances engineering

DD410-18°C-Vuoto-Pos5.6(00000007).dat

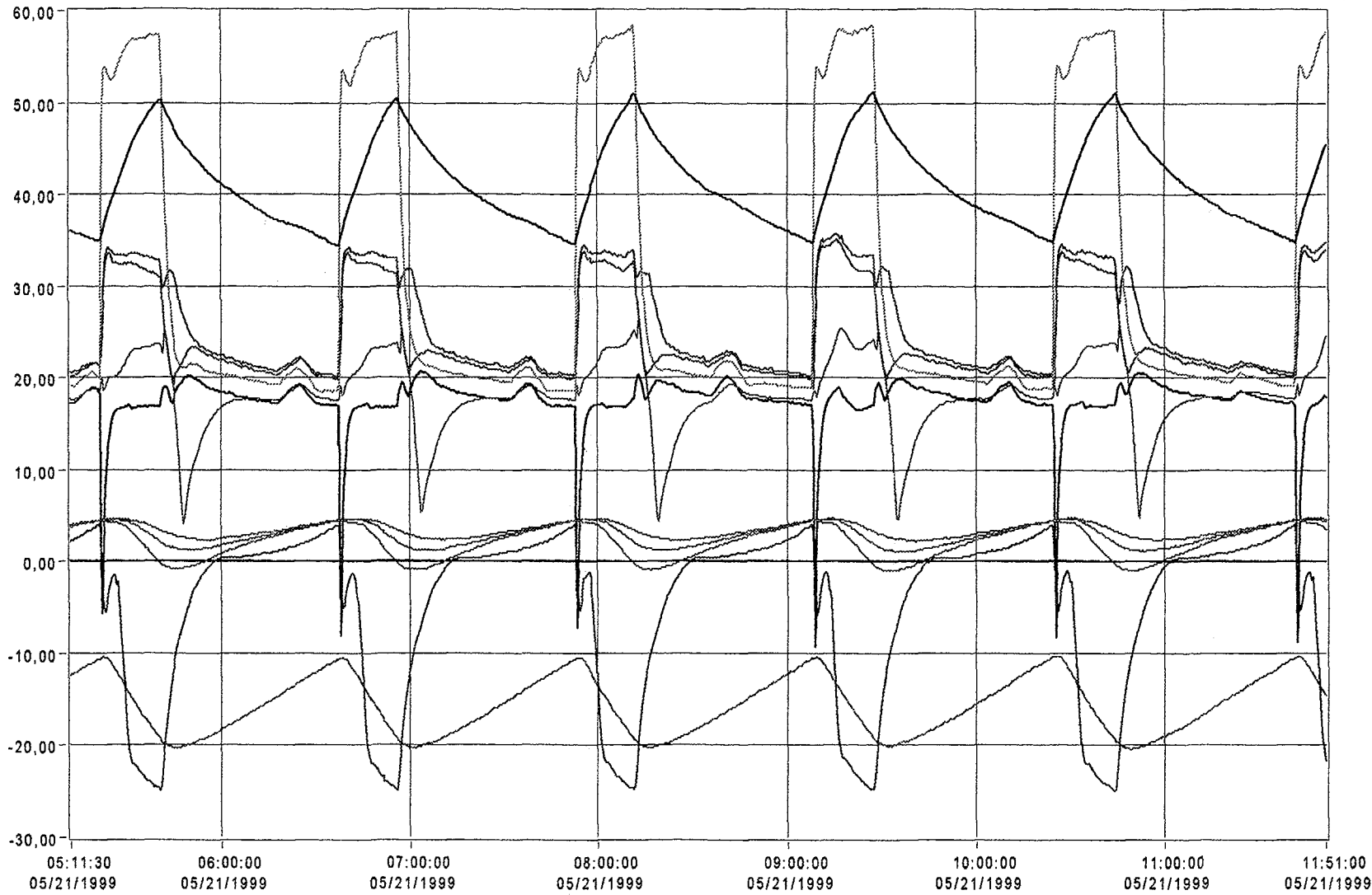
Descrizione DD410-18°C-Thermostat control-Pos5.6(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 21/05/1999 17.11.30

Fine test: 22/05/1999 08.21.12



Thermo. bulb
T 1 refrigerator
T 2 refrigerator
T 3 refrigerator
T 2 freezer
Compressor
Condenser in
Oil cooler in
Oil cooler out
Condenser out
Suction pipe



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appliances engineering

DD410-18°C-Vuoto-Pos4.5(00000007).dat

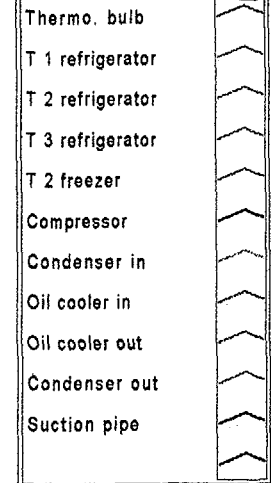
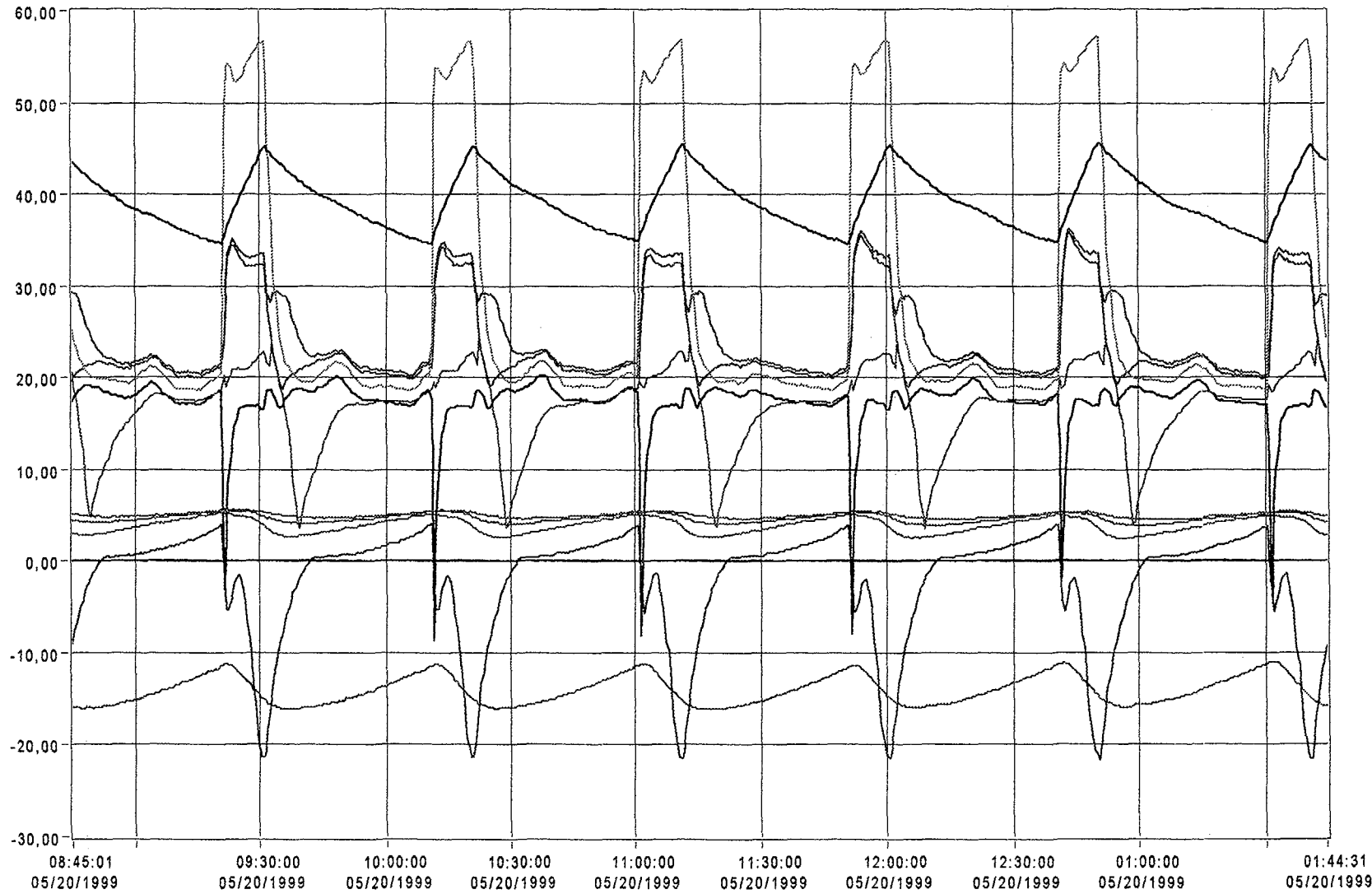
Descrizione DD410-18°C-Thermostat control-Pos4.5(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 20/05/1999 08.45.01

Fine test: 21/05/1999 08.43.19



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WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°00000007) Class T

TYPE of TEST : PULL DOWN

Date	03/03/99	Compressor : GL 90 AN
Refrigerant R 134a	[gr] 210	Condenser : wires and tubes

	Ambient temperature	[°C]	43	38	
	Thermostat setting		7 / 7	7 / 7	
T.C.					
1	Thermostat bulb temp.	[°C]	-9.6	-16.1	
2	Damper bulb temp.	[°C]			
3	T 1 refrigerator temp.	[°C]	+10.3	+6.6	
4	T 2 refrigerator temp.	[°C]	+8.9	+5.2	
5	T 3 refrigerator temp.	[°C]	+7.2	+3.3	
6	T 1 freezer temp.	[°C]			
7	T 2 freezer temp.	[°C]	-15.9	-19.2	
8	T 3 freezer temp.	[°C]			
9	Compressor temp.	[°C]	92.3	84.7	
10	Condenser in temp.	[°C]	103.5	94.3	
11	Condenser m.p. temp.	[°C]			
12	Condenser out temp.	[°C]	62.3	56.2	
13	Oil cooler in temp.	[°C]	61.8	56.6	
14	Oil cooler out temp.	[°C]	64.1	58.8	
15	Suction pipe temp.	[°C]	44.4	41.0	
	Refrig. temp. (Avr)	[°C]	+8.8	+5.0	
	Freezer temp. (Avr)	[°C]	-15.9	-19.2	
	Test Time	[h]	6	6	
	Running Time	[%]	100	100	
	Energy consumption	[Kwh/24h]			
	Voltage	[Volt]	220	220	
	Current	[A]	1.98	1.88	
	Power	[Watt]	253	227	

NOTE :



C A . G I .

C:\Thermostatic Chamber\Test Files vers 1,1
Whirlpool\Neeasael

Description:
DD410-43°C-Pull-Down-Pos.max-(00000007)

ID Chamber: Chamber 1
Position B

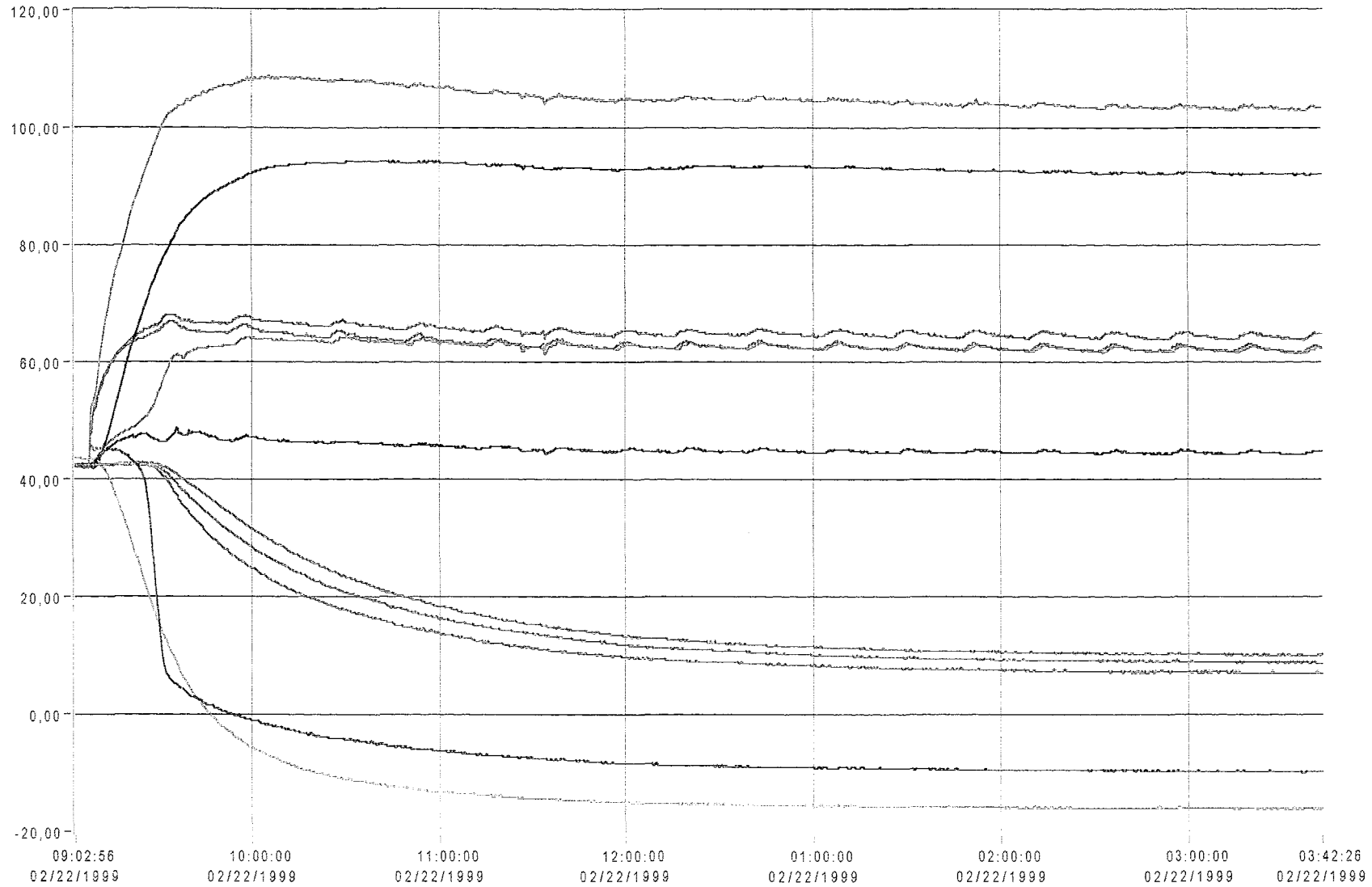
Sampling
Time(sec): 30

Test Start: 22/02/1999
09.02.56

Not acquired



appliances engineering



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.



C A . G I .

C:\Thermostatic Chamber\Test Files vers 1,1\
Whirlpool\Neeasae\DD410-38°C-Pull

Description: DD410-38°C-Pull
down(00000007)

ID Chamber: Chamber 1
Position B

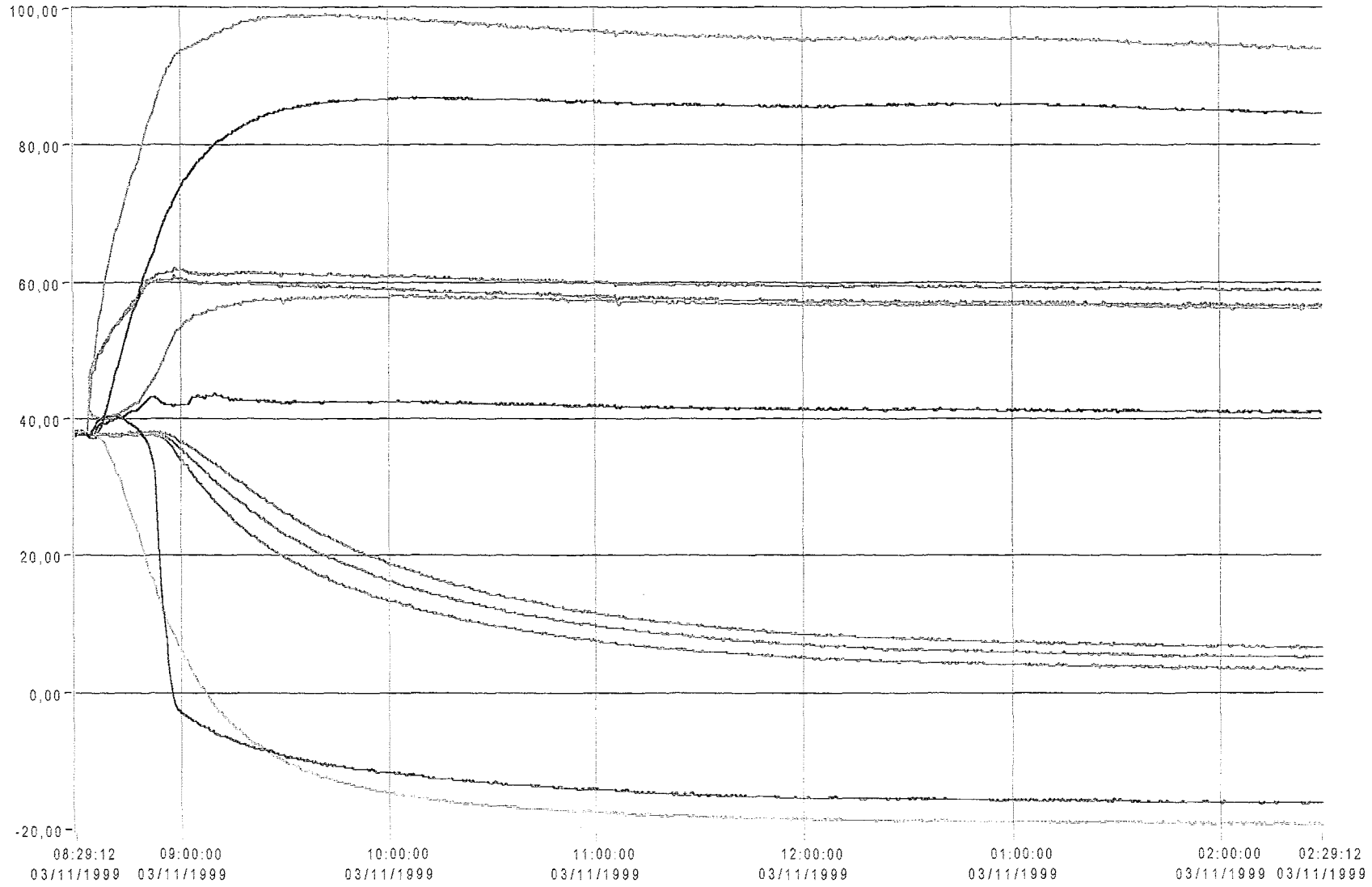
Sampling
Time(sec): 30

Test Start: 11/03/1999
08.29.12

Test Stop: 11/03/1999
14.33.39



appliances engineering



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°00000007) Class T

TYPE of TEST : STORAGE TEST

Date	29/04/99		Compressor : GL 90 AN	
Storage load	[Kg]	45	Condenser : wires and tubes	
Refrigerant R 134a	[gr]	210		

Ambient temperature		[°C]	43		38		18	
Thermostat setting			3 / 7		4 / 7		3.5 / 7	
T.C.			ON	OFF	ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	+4.8	-16.6	+4.3	-18.9	+4.0	-19.8
2	Damper bulb temp.	[°C]						
3	T 1 refrigerator temp.	[°C]	+10.7	+8.6	+8.7	+6.2	+3.4	+2.8
4	T 2 refrigerator temp.	[°C]	+9.7	+6.8	+7.9	+4.2	+2.7	+1.7
5	T 3 refrigerator temp.	[°C]	+8.8	+4.7	+7.2	+2.2	+1.6	-0.2
6	T package 1	[°C]	-13.1	-13.6	-14.2	-14.9	-16.4	-16.8
7	T package 2	[°C]	-13.4	-14.0	-14.5	-15.2	-16.7	-16.8
8	T package 3	[°C]	-17.4	-17.5	-19.0	-19.2	-20.8	-20.8
9	T package 4	[°C]	-17.2	-17.3	-18.8	-19.0	-20.6	-20.6
10	T package 5	[°C]						
11	T package 6	[°C]						
12	Compressor temp.	[°C]	76.6	89.1	68.5	81.8	47.1	55.6
13	Condenser in temp.	[°C]	47.9	99.3	43.0	91.0	22.4	64.6
14	Condenser out temp.	[°C]	44.1	61.1	39.7	54.6	15.8	27.3
15	Suction pipe temp.	[°C]	46.5	43.4	41.0	38.9	20.9	20.0
	Refrig. temp. (Avr)	[°C]	+8.2		+6.1		+2.0	
	Warmer package	[°C]	-13.1		-14.2		-16.4	
	Average of packages	[°C]	-15.4		-16.8		-18.7	
	Test Time	[h]	24		24		24	
	Running Time	[%]	78.3		69.1		25.2	
	Energy consumption	[Kwh/24h]	4.085		3.412		1.220	
	Voltage	[Volt]	220		220		220	
	Current	[A]	1.99	1.83	1.98	1.85	1.97	1.91
	Power	[Watt]	270	210	260	202	255	217

NOTE :



appliances engineering

DD410-43°C-Cons-Pos3(00000007).dat

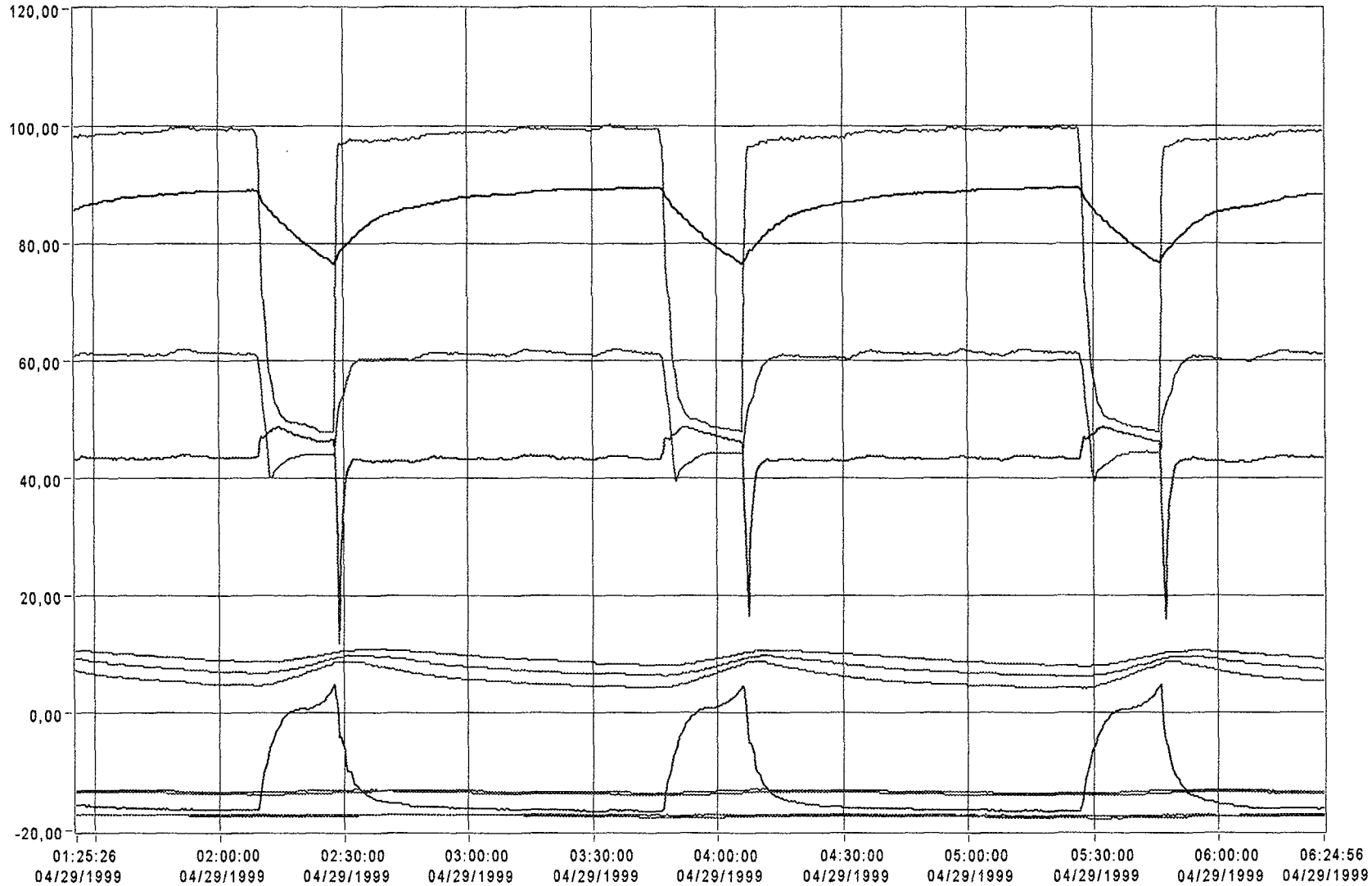
Descrizione DD410-43°C-Storage test-Pos3(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 28/04/1999 10.26.56

Fine test: 29/04/1999 08.36.20



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.



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DD410-38°C-Cons-Pos4(00000007).dat

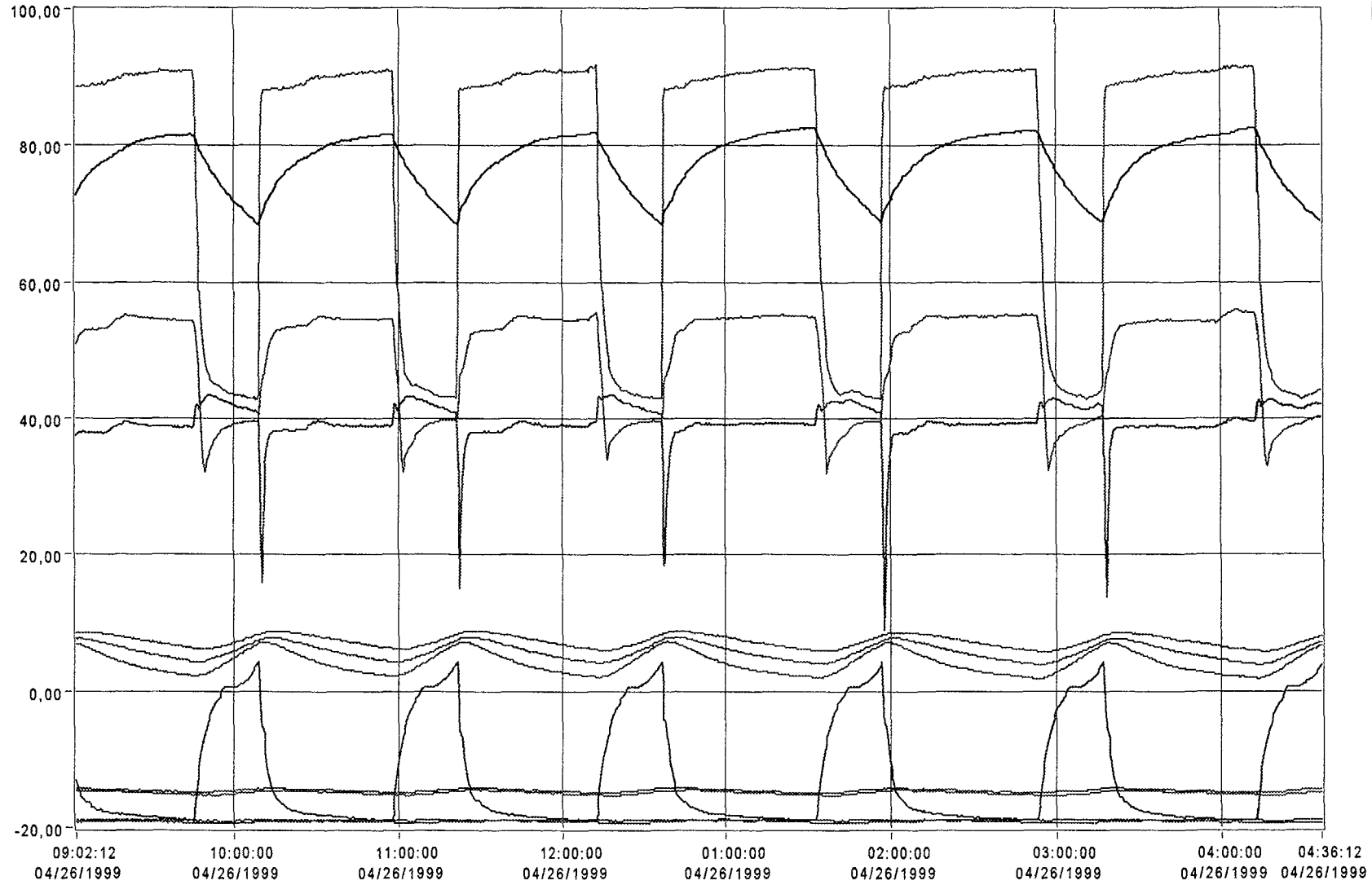
Descrizione DD410-38°C-Storage test-Pos4(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 26/04/1999 09.02.12

Fine test: 26/04/1999 16.36.51



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

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appliances engineering

DD410-18°C-Cons-Pos3.5(00000007).dat

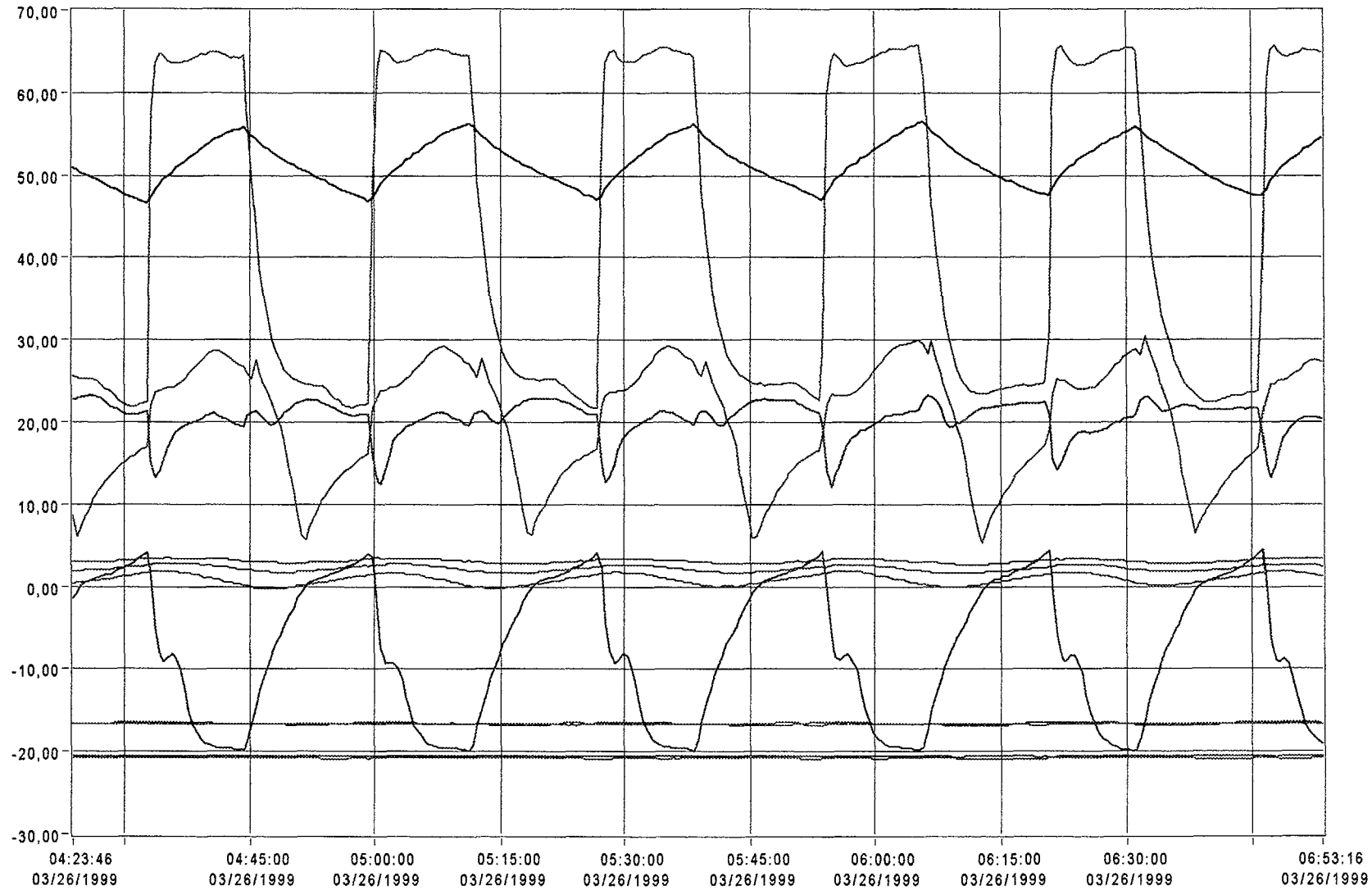
Descrizione DD410-18°C-Storage test-Pos3.5(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 26/03/1999 16.23.46

Fine test: 27/03/1999 08.22.36



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°00000007) Class T

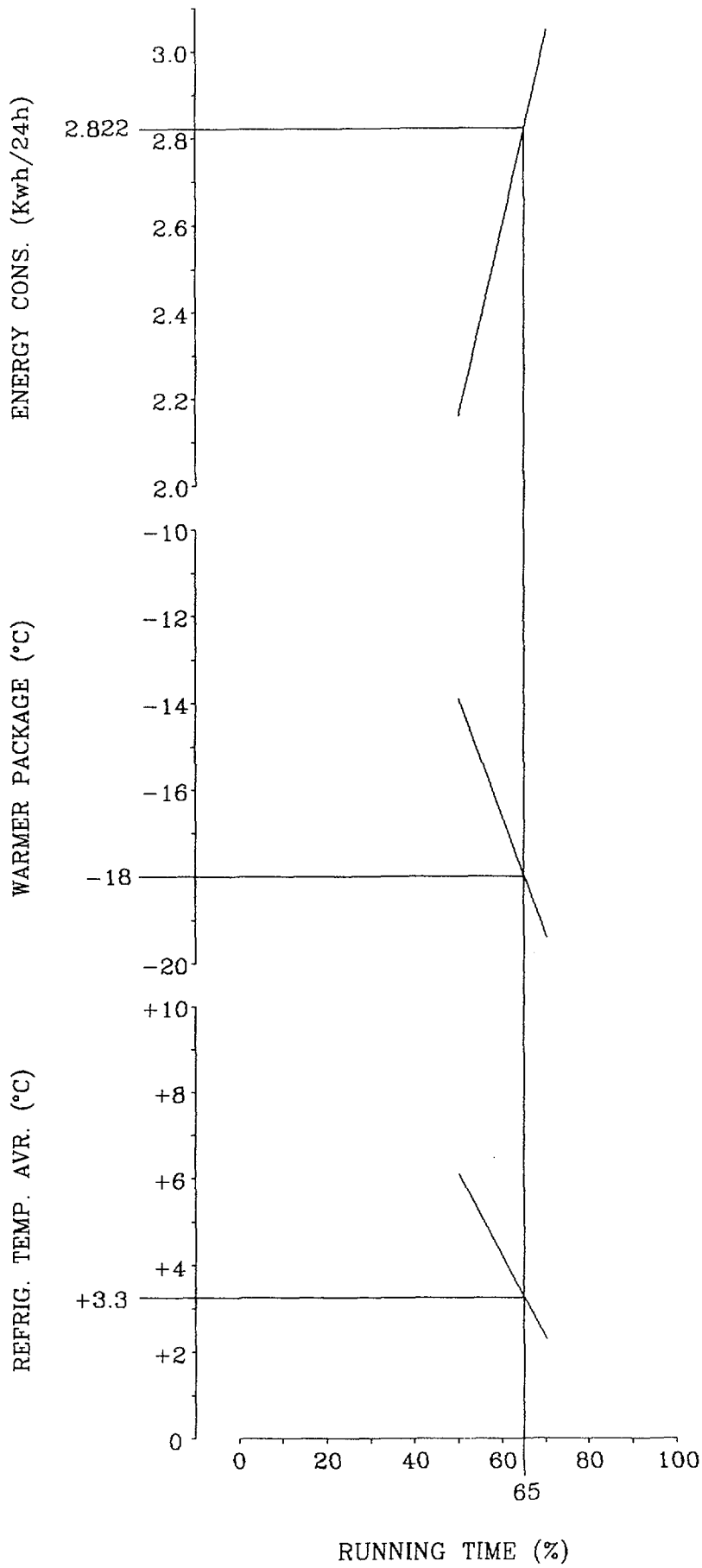
TYPE of TEST : ENERGY CONSUMPTION

Date	21/04/99		Compressor : GL 90 AN
Ambient temperature	[°C]	32	Condenser : wires and tubes
Storage load	[Kg]	45	
Refrigerant R 134a	[gr]	210	

Thermostat setting		4 / 7		3 / 7		
T.C.		ON	OFF	ON	OFF	
1	Thermostat bulb temp. [°C]	+4.8	-18.9	+4.1	-17.7	
2	Damper bulb temp. [°C]					
3	T 1 refrigerator temp. [°C]	+6.5	+4.8	+7.8	+7.1	
4	T 2 refrigerator temp. [°C]	+5.4	+3.2	+6.8	+5.7	
5	T 3 refrigerator temp. [°C]	+4.4	+1.3	+5.7	+3.8	
6	T package 1 [°C]	-16.5	-17.3	-13.9	-14.1	
7	T package 2 [°C]	-16.7	-17.2	-14.2	-14.3	
8	T package 3 [°C]	-20.7	-20.8	-18.3	-18.3	
9	T package 4 [°C]	-20.4	-20.5	-18.0	-18.1	
10	T package 5 [°C]					
11	T package 6 [°C]					
12	Compressor temp. [°C]	66.7	77.3	66.5	74.0	
13	Condenser in temp. [°C]	38.5	86.3	37.8	84.6	
14	Condenser out temp. [°C]	33.4	49.9	30.8	47.5	
15	Suction pipe temp. [°C]	36.6	36.4	36.5	34.2	Extrapolated
						at -18 [°C]
	Refrig. temp. (Avr) [°C]	+4.3		+6.1		+3.3
	Warmer package [°C]	-16.5		-13.9		-18.0
	Average of packages [°C]	-18.8		-16.1		
	Test Time [h]	24		24		
	Running Time [%]	59.5		50		65
	Energy consumption [Kwh/24h]	2.580		2.160		2.822
	Voltage [Volt]	220		220		
	Current [A]	1.98	1.96	2.02	1.90	
	Power [Watt]	270	219	275	230	

NOTE :

DD 410
ENERGY CONSUMPTION (with load) AT 32°C





appliances engineering

DD410-32°C-Energy cons-Pos4(00000007).dat

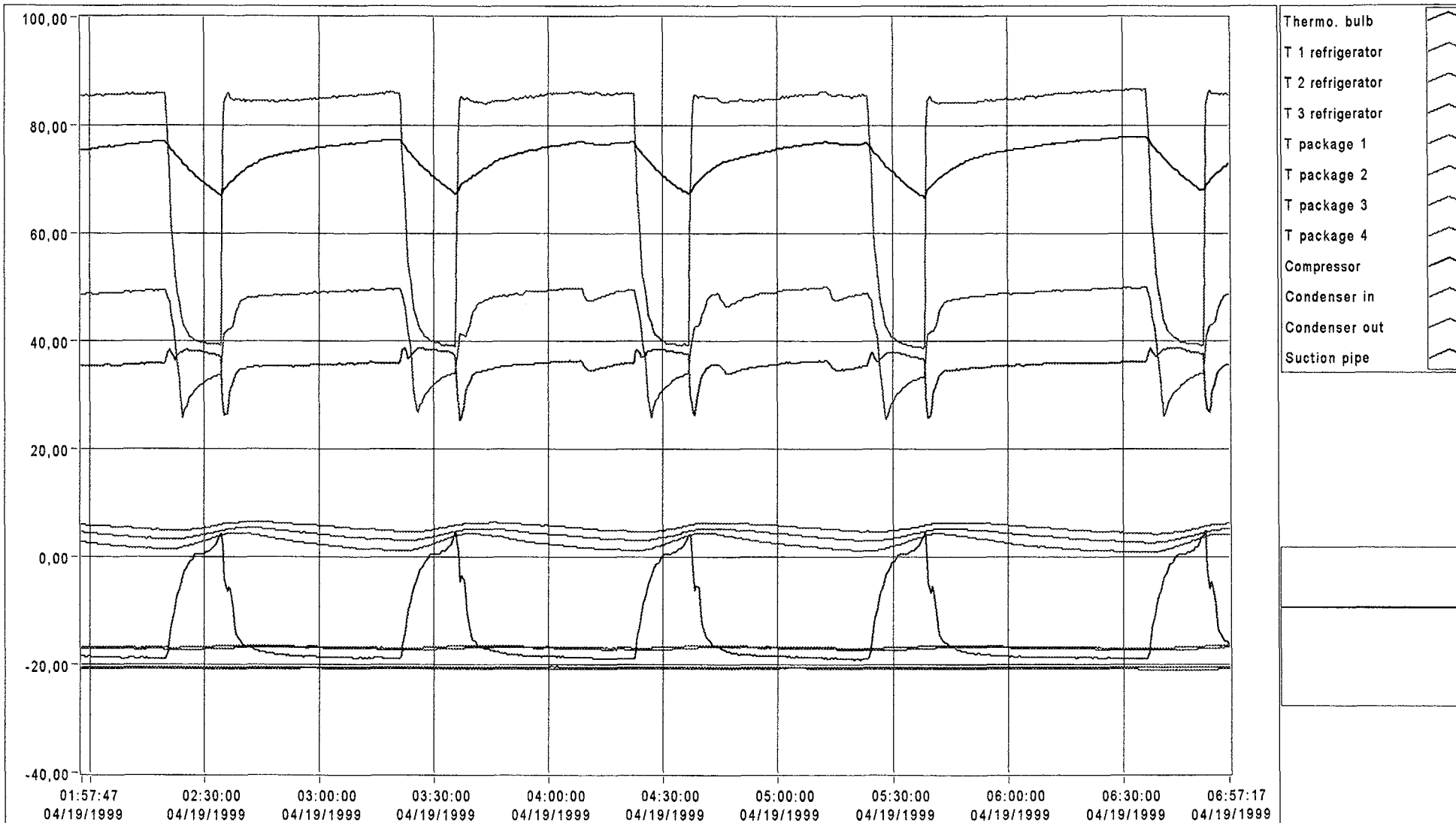
Descrizione DD410-32°C-Energy cons-Pos4(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 19/04/1999 08.58.17

Fine test: 20/04/1999 08.58.15



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appliances engineering

DD410-32°C-Energy cons-Pos3(00000007).dat

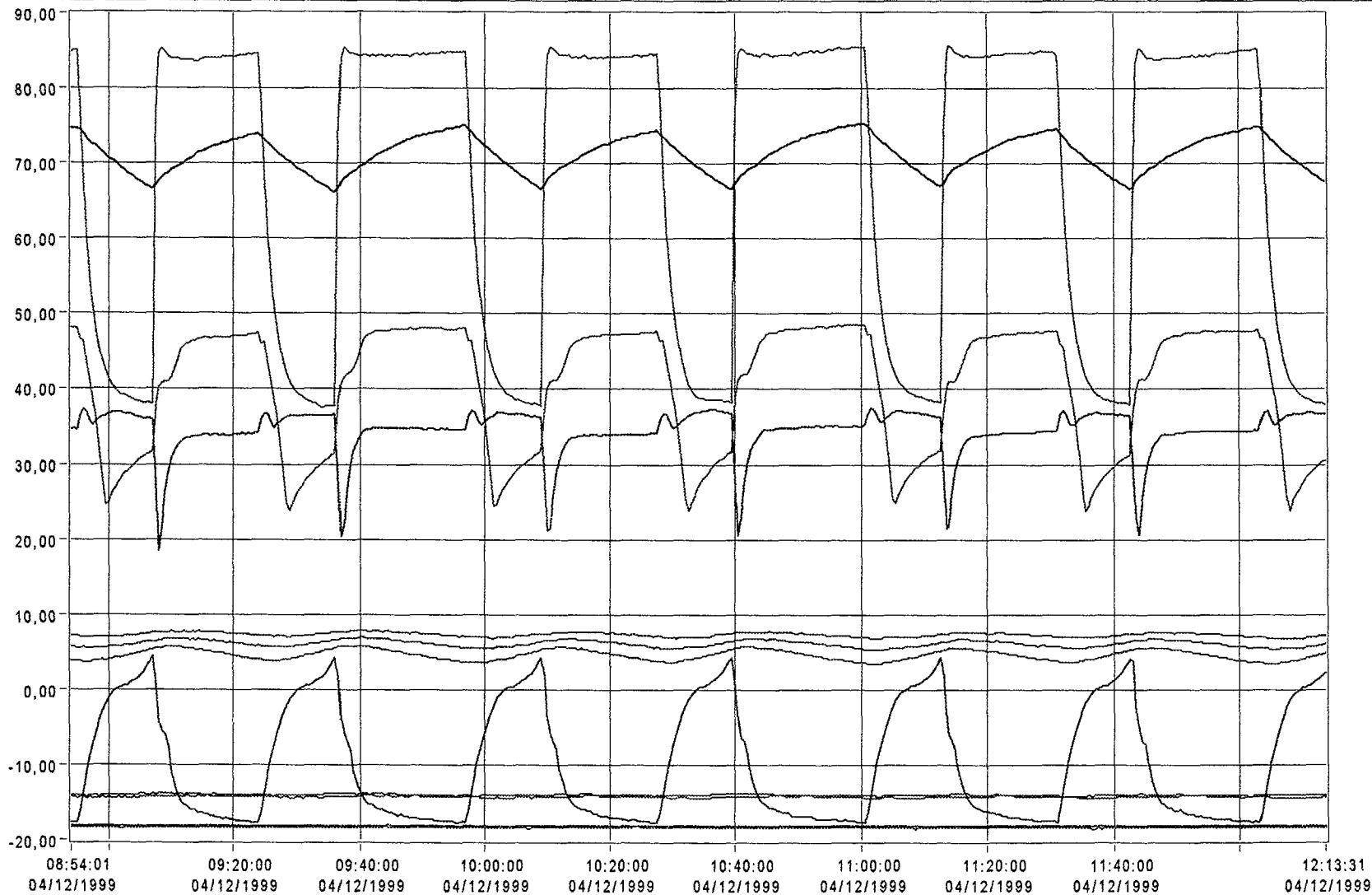
Descrizione DD410-32°C-Energy cons-Pos3(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 12/04/1999 08.54.01

Fine test: 13/04/1999 08.37.58



Thermo. bulb
T 1 refrigerator
T 2 refrigerator
T 3 refrigerator
T package 1
T package 2
T package 3
T package 4
Compressor
Condenser in
Condenser out
Suction pipe

Hardware & Software by CA.GI.



WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°00000007) Class T

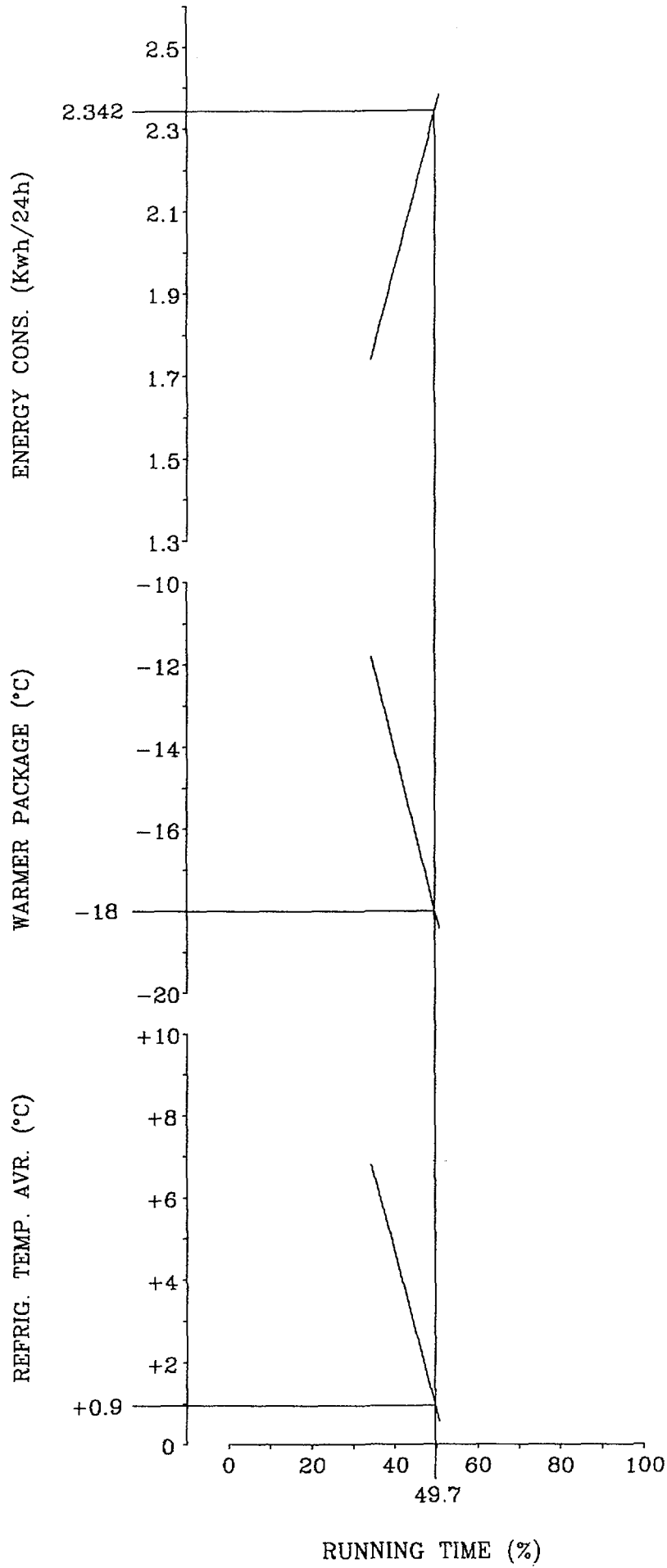
TYPE of TEST : ENERGY CONSUMPTION

Date	07/04/99		Compressor : GL 90 AN
Ambient temperature	[°C]	25	Condenser : wires and tubes
Storage load	[Kg]	45	
Refrigerant R 134a	[gr]	210	

Thermostat setting		3.5 / 7		2 / 7		
T.C.		ON	OFF	ON	OFF	
1	Thermostat bulb temp. [°C]	+4.6	-20.1	+4.3	-16.8	
2	Damper bulb temp. [°C]					
3	T 1 refrigerator temp. [°C]	+5.2	+4.3	+7.9	+7.6	
4	T 2 refrigerator temp. [°C]	+4.3	+3.0	+7.3	+6.8	
5	T 3 refrigerator temp. [°C]	+3.3	+1.1	+6.2	+5.2	
6	T package 1 [°C]	-15.3	-15.5	-11.8	-11.9	
7	T package 2 [°C]	-15.5	-15.8	-12.0	-12.1	
8	T package 3 [°C]	-19.8	-19.9	-16.0	-16.0	
9	T package 4 [°C]	-19.5	-19.6	-15.9	-16.0	
10	T package 5 [°C]					
11	T package 6 [°C]					
12	Compressor temp. [°C]	57.8	66.1	56.8	62.4	
13	Condenser in temp. [°C]	31.5	75.7	30.9	74.9	
14	Condenser out temp. [°C]	25.0	37.4	21.7	36.5	
15	Suction pipe temp. [°C]	29.8	27.2	29.4	27.1	Extrapolated
						at -18[°C]
	Refrig. temp. (Avr) [°C]	+3.5		+6.8		+0.9
	Warmer package [°C]	-15.3		-11.8		-18.0
	Average of packages [°C]	-17.6		-14.0		
	Test Time [h]	24		24		
	Running Time [%]	43		34.5		49.7
	Energy consumption [Kwh/24h]	2.080		1.740		2.342
	Voltage [Volt]	220		220		
	Current [A]	1.97	1.86	2.05	1.94	
	Power [Watt]	265	216	280	236	

NOTE :

DD 410
ENERGY CONSUMPTION (with load) AT 25°C





appliances engineering

DD410-25°C-Energy cons-Pos3.5(00000007).dat

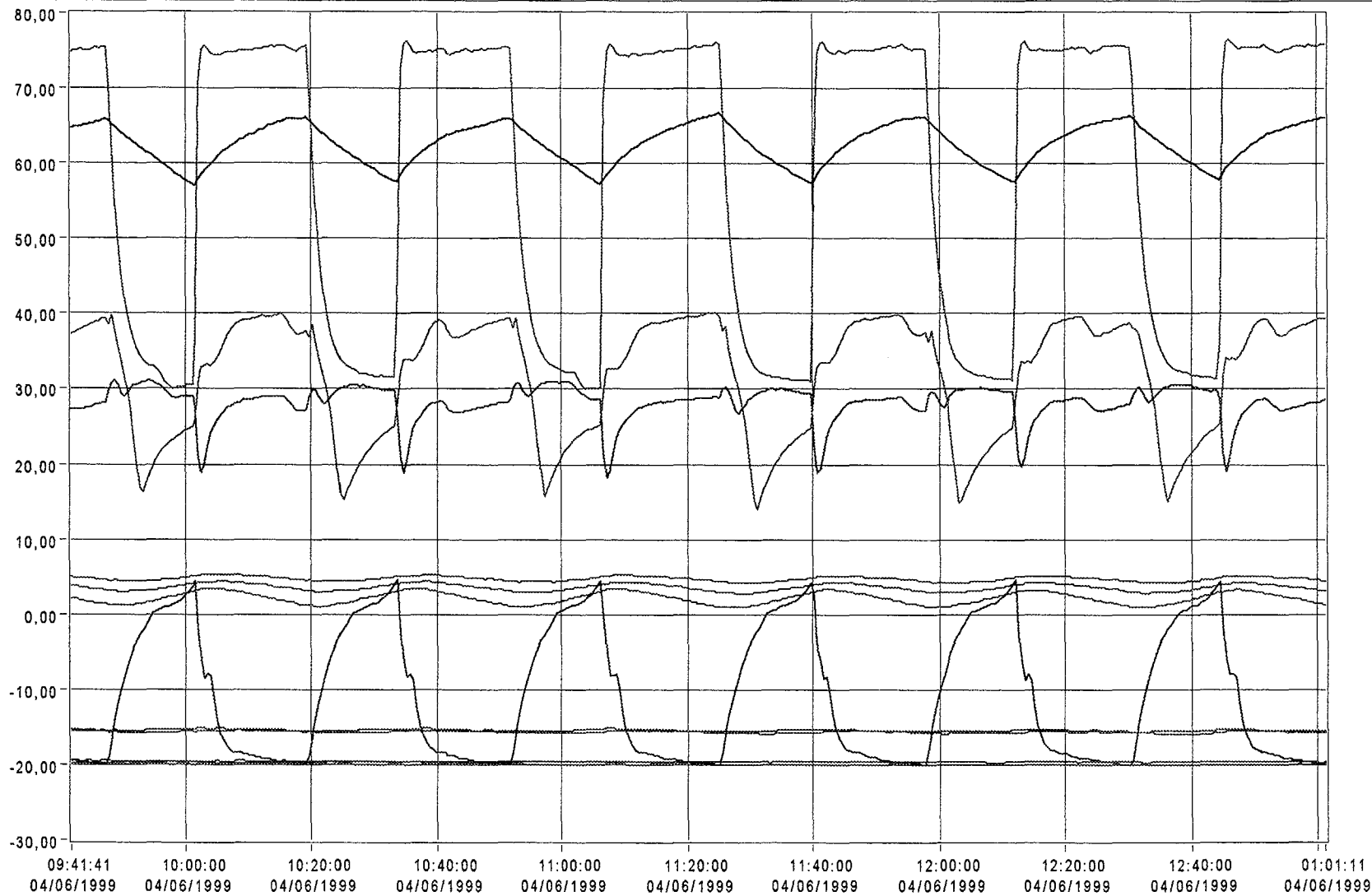
Descrizione DD410-25°C-Energy cons-Pos3.5(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 06/04/1999 09.41.41

Fine test: 07/04/1999 08.34.41



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

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appliances engineering

DD410-25°C-Energy cons-Pos2(00000007).dat

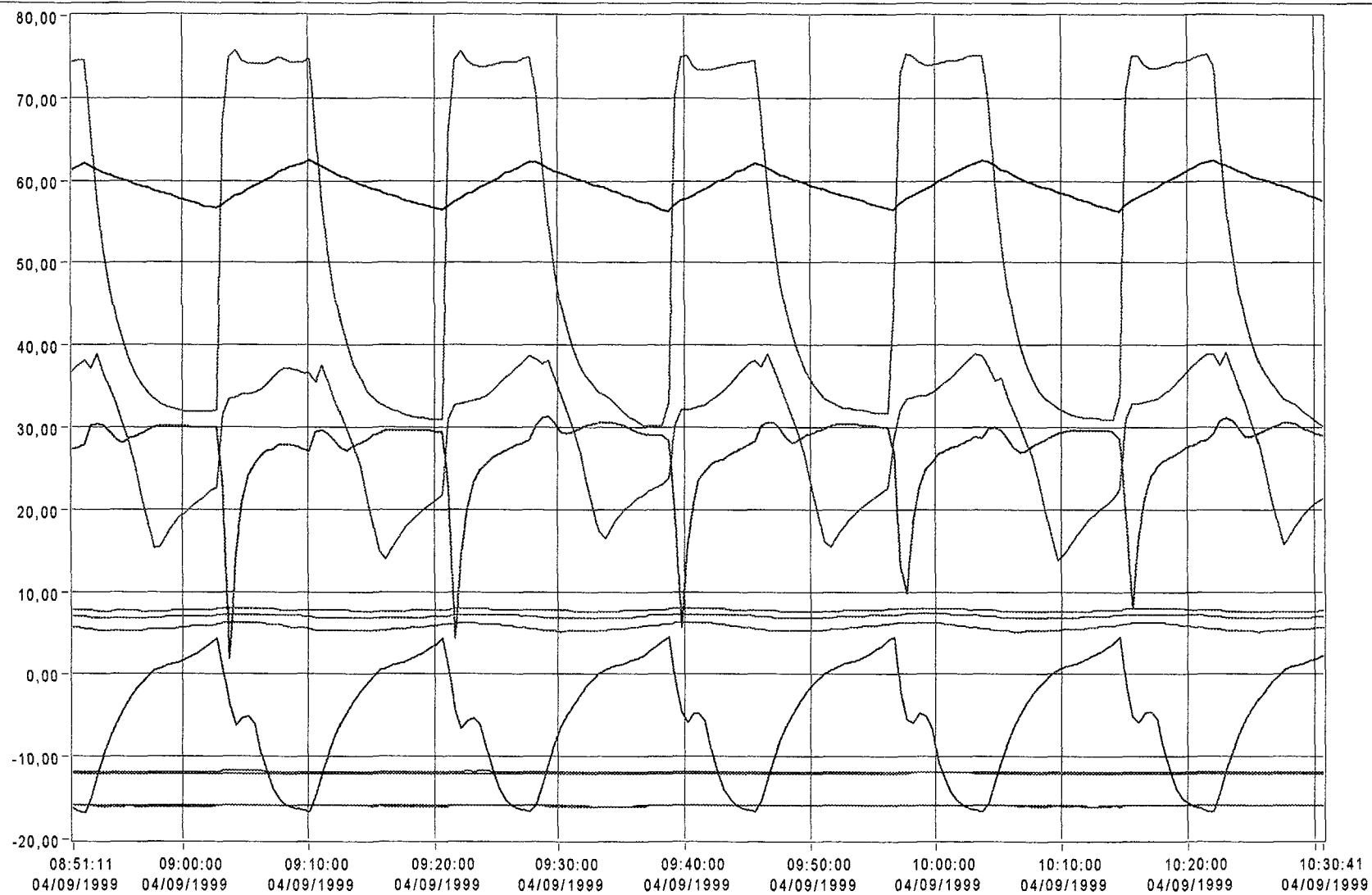
Descrizione DD410-25°C-Energy cons-Pos2(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 09/04/1999 08.51.11

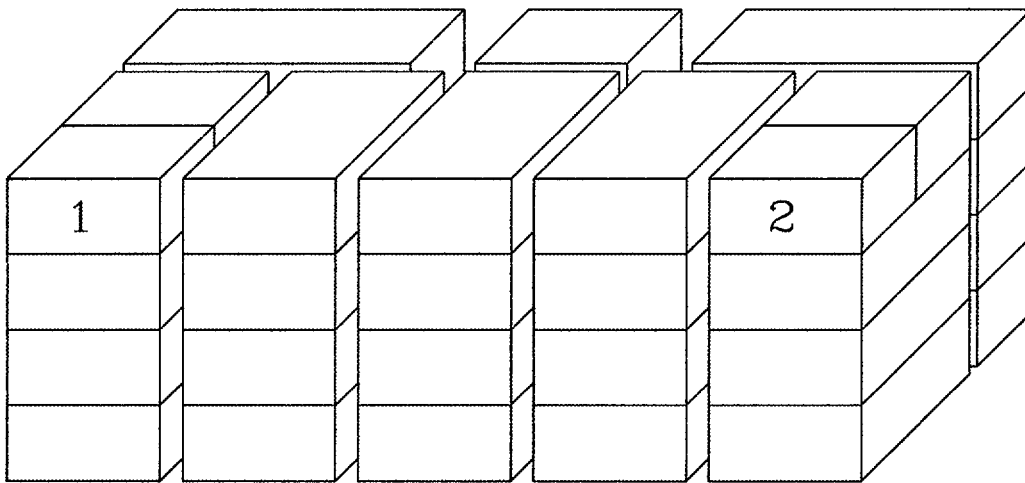
Fine test: 10/04/1999 08.10.09



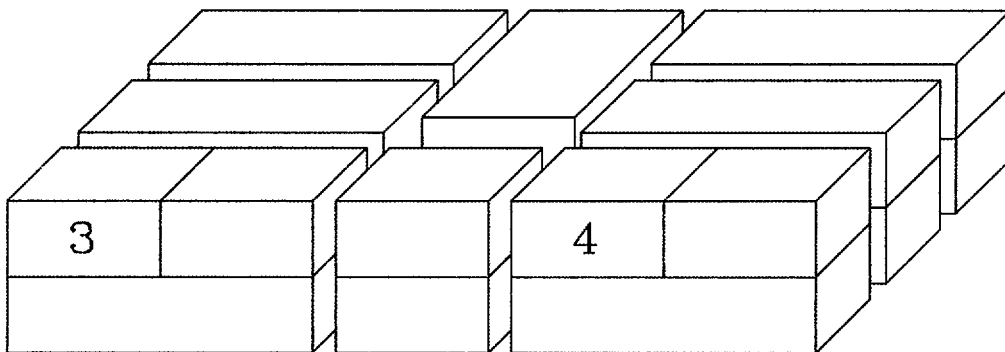
- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

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DD 410
LOADING SCHEME
TOTAL PACKAGES 45 Kg



30 Kg
(SHELF)



15 Kg
(BOTTOM)



WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°00000007) Class T

TYPE of TEST : ELECTRICAL TEST (low starting voltage)

Date	06/05/99	
Ambient temperature	[°C]	43
Refrigerant R 134a	[gr]	210
Compressor : GL 90 AN		
Condenser : wires and tubes		

			Pull down min	
1	Thermostat bulb temp.	[°C]	-16.7	
2	T 1 refrigerator temp.	[°C]	+6.5	
3	T 2 refrigerator temp.	[°C]	+4.8	
4	T 3 refrigerator temp.	[°C]	+2.8	
5	T 1 freezer temp.	[°C]		
6	T 2 freezer temp.	[°C]	-19.1	
7	T 3 freezer temp.	[°C]		
8	Compressor temp.	[°C]	84.6	
9	Condenser in temp.	[°C]	94.3	
10	Condenser out temp.	[°C]	59.8	
11	Oil cooler in temp.	[°C]	60.8	
12	Oil cooler out temp.	[°C]	62.2	
13	Suction pipe temp.	[°C]	42.9	
	Refrig. temp. (Avr)	[°C]	+4.7	
	Freezer temp. (Avr)	[°C]	-19.1	
	Test Time	[h]	6	
	Voltage	[Volt]	187	
	Frequency	[Hz]	50	
	Current	[A]	1.52	
	Power	[Watt]	182	

Lower starting voltage test at 43°C : 182 Volts

NOTE :



appliances engineering

DD410-43°C-Pull down min(00000007).dat

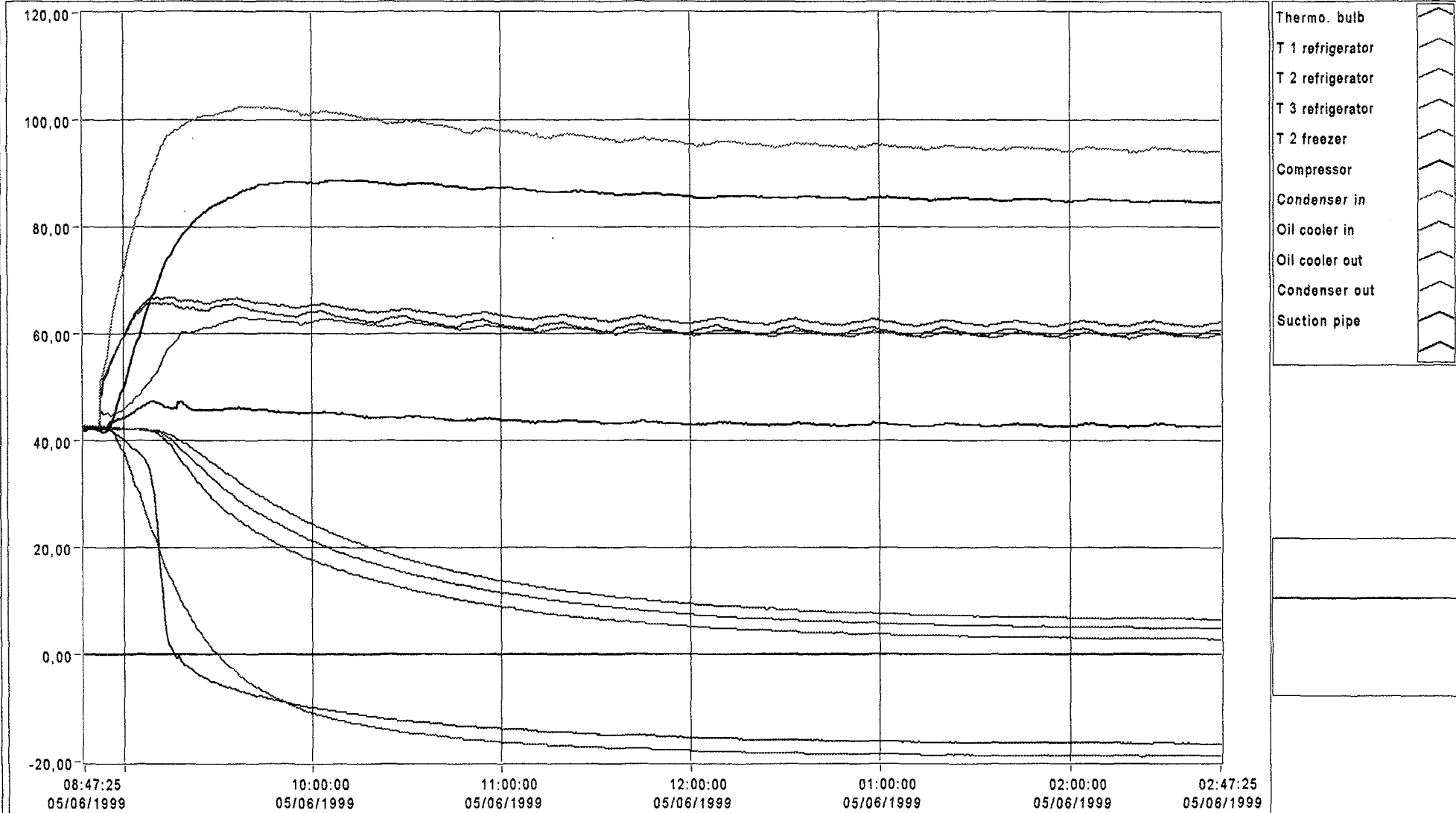
Descrizione DD410-43°C-Pull down min(00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 06/05/1999 08.47.25

Fine test: 06/05/1999 14.49.31



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DD410-43°C-Lowest start. volt. test (00000007).dat

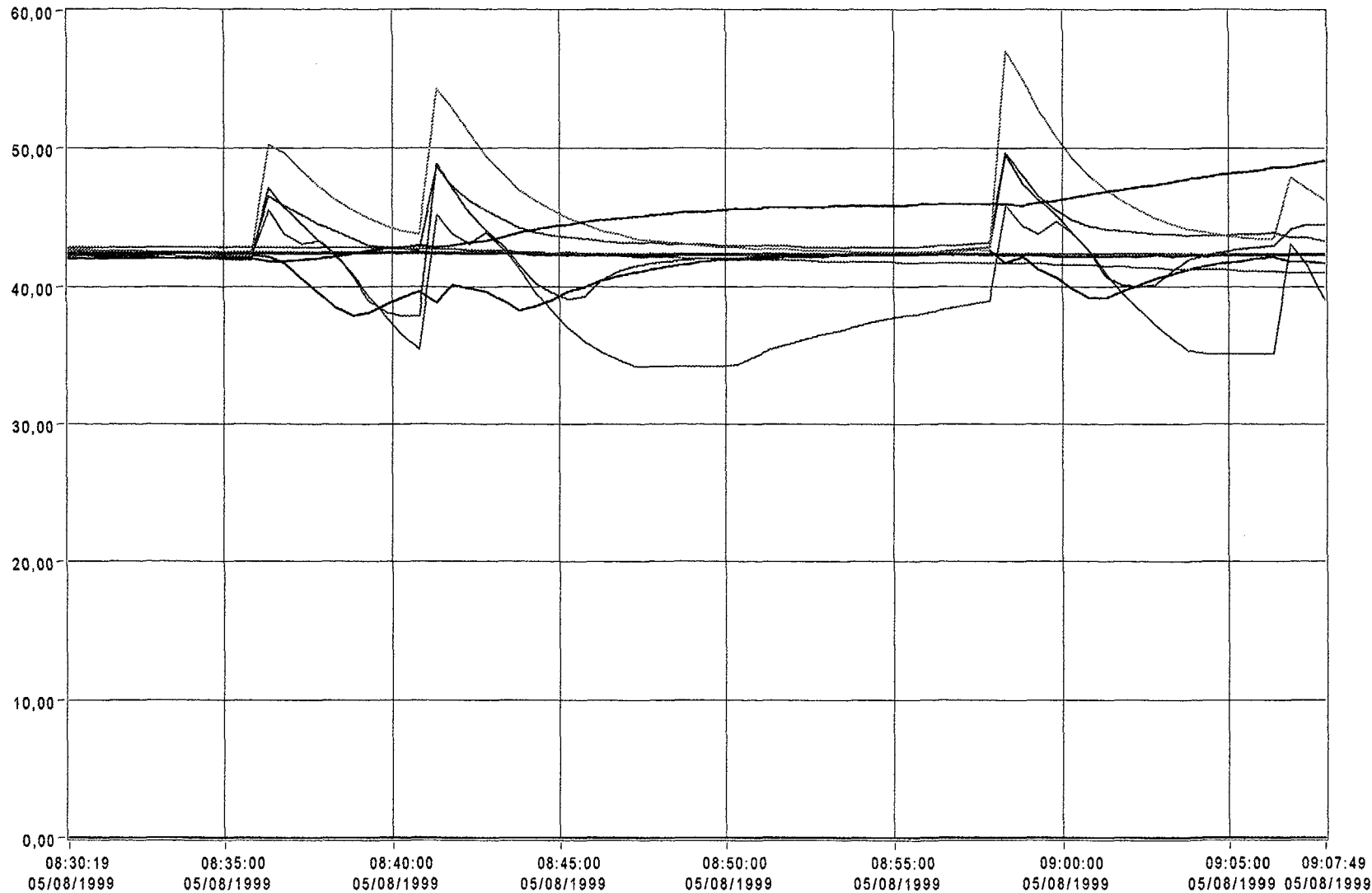
Descrizione DD410-43°C-Lowest start. volt. test (00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 08/05/1999 08.30.19

Fine test: 08/05/1999 09.08.20



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL : DD 410 (N°00000007) Class T

TYPE of TEST : ELECTRICAL TEST (low starting voltage)

Date	11/05/99	
Ambient temperature	[°C]	38
Refrigerant R 134a	[gr]	210
Compressor : GL 90 AN		
Condenser : wires and tubes		

		Pull down min	
1	Thermostat bulb temp.	[°C]	-19.0
2	T 1 refrigerator temp.	[°C]	+3.8
3	T 2 refrigerator temp.	[°C]	+2.1
4	T 3 refrigerator temp.	[°C]	+0.1
5	T 1 freezer temp.	[°C]	
6	T 2 freezer temp.	[°C]	-21.4
7	T 3 freezer temp.	[°C]	
8	Compressor temp.	[°C]	79.2
9	Condenser in temp.	[°C]	87.5
10	Condenser out temp.	[°C]	54.4
11	Oil cooler in temp.	[°C]	55.1
12	Oil cooler out temp.	[°C]	56.8
13	Suction pipe temp.	[°C]	39.8
Refrig. temp. (Avr)		[°C]	+2.0
Freezer temp. (Avr)		[°C]	-21.4
Test Time		[h]	6
Voltage		[Volt]	187
Frequency		[Hz]	50
Current		[A]	1.47
Power		[Watt]	169

Lower starting voltage test at 38°C : 182 Volts

NOTE :



appliances engineering

DD410-38°C-Pull down min (00000007).dat

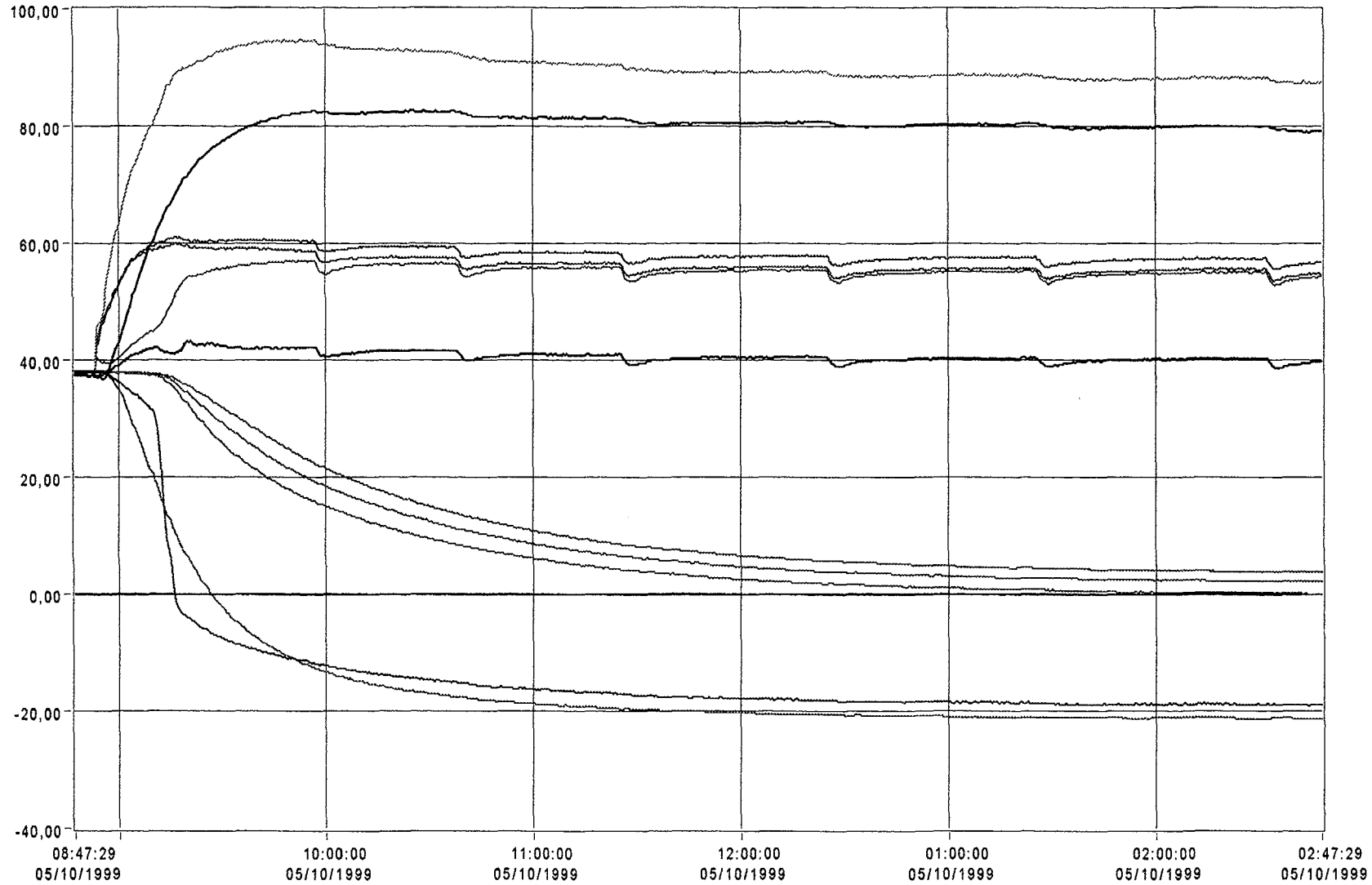
Descrizione DD410-38°C-Pull down min (00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 10/05/1999 08.47.29

Fine test: 10/05/1999 14.53.36



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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appliances engineering

DD410-38°C-Lowest start. volt. test (00000007).dat

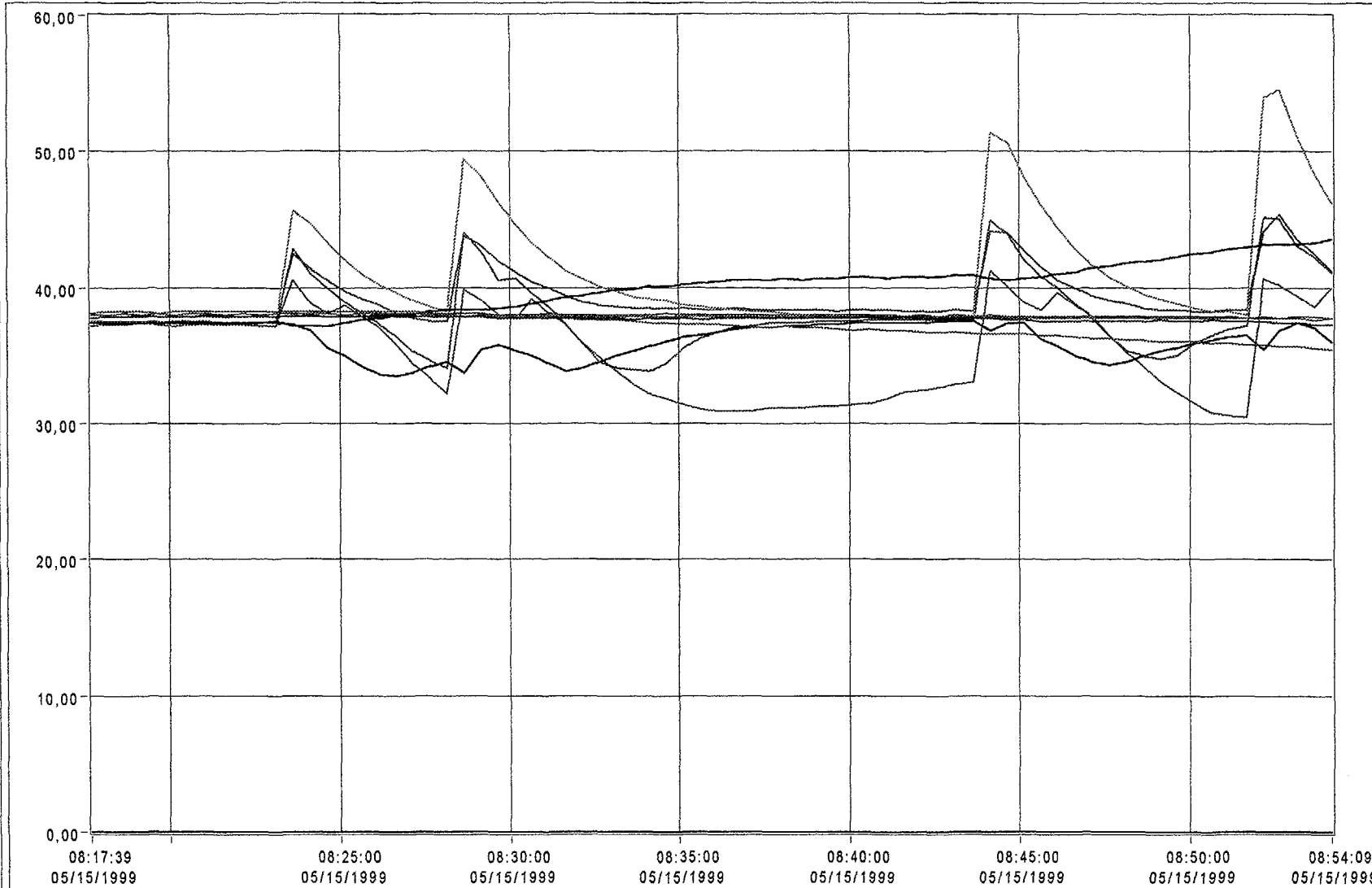
Descrizione DD410-38°C-Lowest start volt. test (00000007)

ID Posizione: CAMERA 1 POSIZIONE B

Sampling Time: 30

Inizio test: 15/05/1999 08.17.39

Fine test: 15/05/1999 08.54.40



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.

22210-5



PERFORMANCES TESTS

MODEL

WHIRLPOOL-NEEASAE

DD460 - N° 00000002

DD460 - N° 00000002 - Class T

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PULL DOWN MIN (187V)	
LOW STARTING VOLTAGE	



WHIRLPOOL EUROPE

APPLIANCE: DD460		UNITS	R 12	R 134a
REFRIGERANT	Charge	[gr]	220	290
STRUCTURE	H x W x D	[mm]	1710x715x625	1710x715x625
	Ref.gross volume	[litres]	317(ABS inner liner)	317(ABS inner liner)
	Frz.gross volume	[litres]	98(aluminium inner liner)	98(aluminium inner liner)
	TOTAL GROSS	[litres]	415	415
	Ref.net volume	[litres]	307	307
	Frz. net volume	[litres]	98	98
	TOTAL NET	[litres]	405	405
	ADJUSTED	[litres]		
COMPRESSOR	Model	name	Embraco B3118B	Zanussi GL 90 AN
	Capacity Ashrae	[kcal/h]	165	200
	C.O.P.	[kcal/Wh]		1.000
DISCHARGE	Lenght of pipe	[mm]		
	Diam.(e)/Diam.(i)	[mm]		
CONDENSER	Type	name	Wires and tubes(double)	Wires and tubes(double)
	Widh	[mm]	630-630	630-630
	Height	[mm]	1080-320	1080-320
	Area (1 face)	[m^2]		
	Number of pipe		22-7	22-7
	Lenght of pipe	[m]		
	Diam.(e)/Diam.(i)	[mm]	4.76/3.36	4.76/3.36
	Volume	[litres]		
FILTER	Weight	[grams]	9	9
CAPILLARY	N2 flow rate	[l/min]	7.3	6.5
	Lenght	[mm]	2500	3000
	Inside diameter	[mm]	0.70	0.70
REFRIGERATOR EVAPORATOR	Type	name	Roll Bond(aluminium)	Roll Bond(aluminium)
	Widh	[mm]	570	570
	Height	[mm]	290	290
	Area (1 face)	[m^2]	0.1653	0.1653
	Number of pipe			
	Lenght of pipe	[m]		
	Diam.(e)/Diam.(i)	[mm]		
	Volume	[litres]	0.08146	0.08146
FREEZER EVAPORATOR	Type	name	Foamed in(alum.coil 4 faces)	Foamed in(alum.coil 4 faces)
	Widh	[mm]	Upper lower 500-sides 350	Upper lower 500-sides 350
	Height	[mm]	340-340	340-340
	Area (1 face)	[m^2]		
	Number of pipe		10-7	10-7
	Lenght of pipe	[m]		
	Diam.(e)/Diam.(i)	[mm]	9.5/8(pressed 11)	9.5/8(pressed 11)
	Volume	[litres]		
THERMOSTAT	Type		Atea A13 0057 (-13/+4.5 -26/+4.5)	Atea A13 0057 (-13/+4.5 -26/+4.5)
TYPE CIRCUIT			C8	C8



WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°0000002) Class T

TYPE of TEST : CHARGE DETERMINATION

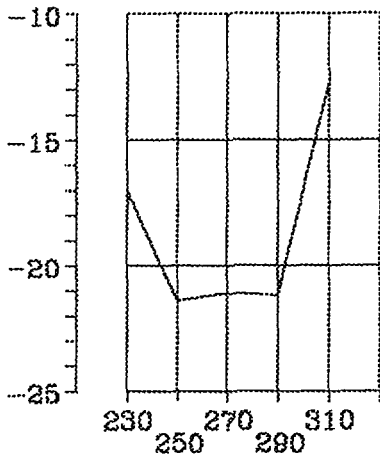
Date	22/02/99	Compressor : GL 90 AN
Ambient temperature	[°C] 43	Condenser : wires and tubes
Refrigerant R 134a	[gr] 290	

T.C.	Charge	[gr]	230	250	270	290	310
	Thermostat setting		CC				
1	Thermostat bulb temp.	[°C]	-17.0	-21.4	-21.1	-21.2	-12.7
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+14.1	+0.7	+0.1	-0.4	+5.4
4	T 2 refrigerator temp.	[°C]	+13.4	-0.7	-1.0	-1.7	+4.2
5	T 3 refrigerator temp.	[°C]	+11.9	-2.5	-3.0	-3.6	+2.3
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-23.9	-21.9	-21.6	-21.7	-14.1
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	80.8	79.7	80.7	80.4	69.3
10	Condenser in temp.	[°C]	100.0	92.9	94.1	93.7	93.3
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	57.4	57.1	57.7	57.0	56.7
13	Oil cooler in temp.	[°C]	40.1	40.5	41.2	41.8	57.3
14	Oil cooler out temp.	[°C]	58.3	58.5	59.1	58.0	59.0
15	Suction pipe temp.	[°C]	47.5	45.9	45.2	42.0	-6.7
	Refrig. temp. (Avr)	[°C]	+13.1	-0.8	-1.3	-1.9	+4.0
	Freezer temp. (Avr)	[°C]	-23.9	-21.9	-21.6	-21.7	-14.1
	Test Time	[h]	24	24	24	24	24
	Running Time	[%]	100	100	100	100	100
	Voltage	[Volt]	220	220	220	220	220
	Current	[A]	1.82	1.86	1.86	1.87	1.95
	Power	[Watt]	170	188	190	192	250

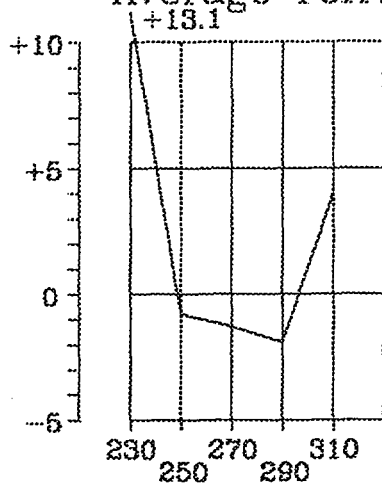
NOTE :

DD 460 Class T
 Charge determination R 134a at 43°C

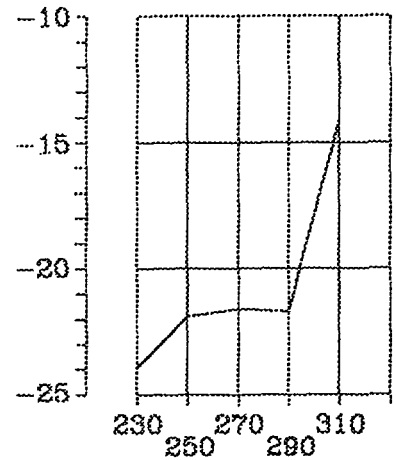
Thermostat



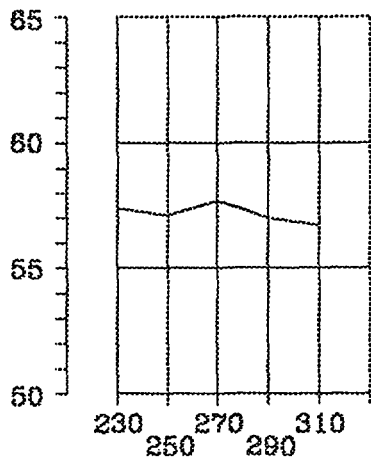
Average refr.



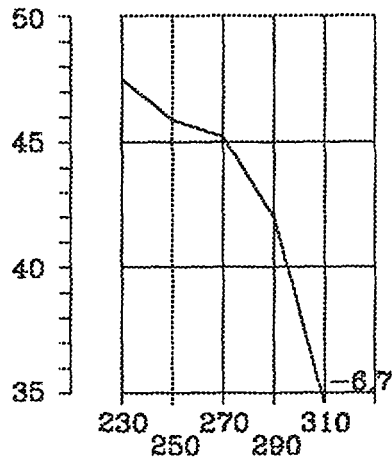
Average freez.



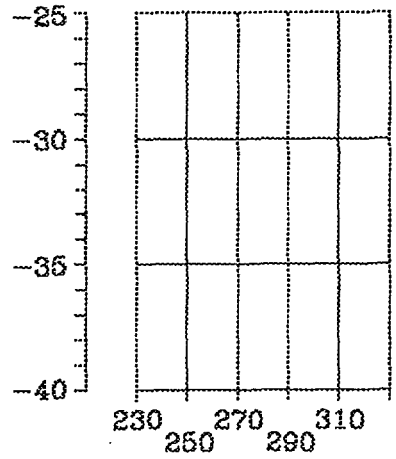
T. condens.



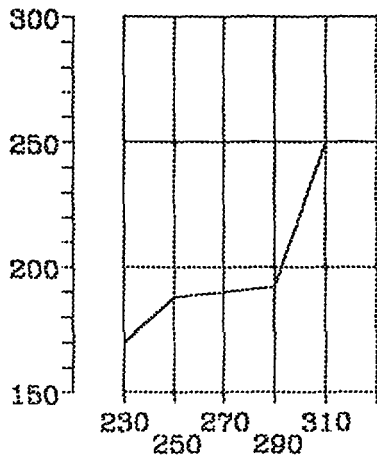
T. suction pipe



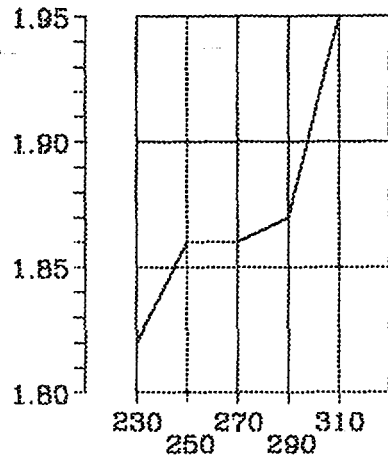
T. suction



Power



Current





WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°0000002) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	04/03/99	Compressor : GL 90 AN
Ambient temperature	[°C] 43	Condenser : wires and tubes
Refrigerant R 134a	[gr] 290	

Thermostat setting			CC	3 / 7		1 / 7	
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-18.8	+4.0	-17.2	+3.9	-13.8
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+0.6	+6.4	+4.6	+9.7	+9.3
4	T 2 refrigerator temp.	[°C]	-0.7	+5.7	+3.0	+8.9	+8.1
5	T 3 refrigerator temp.	[°C]	-2.3	+4.7	+0.9	+7.4	+6.1
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-23.0	-14.6	-20.0	-10.7	-12.1
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	91.6	77.5	92.5	74.2	81.2
10	Condenser in temp.	[°C]	106.1	44.2	106.6	44.0	99.9
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	54.2	43.0	54.7	40.7	48.9
13	Oil cooler in temp.	[°C]	43.7	49.1	43.6	47.3	42.6
14	Oil cooler out temp.	[°C]	62.4	46.6	63.2	48.0	60.3
15	Suction pipe temp.	[°C]	30.0	43.3	34.5	44.8	37.4
	Refrig. temp. (Avr)	[°C]	-0.8	+4.2		+8.2	
	Freezer temp. (Avr)	[°C]	-23.0	-17.3		-11.4	
	Test Time	[h]	24	24		24	
	Running Time	[%]	100	70.9		53.1	
	Energy consumption	[Kwh/24h]		4.080		3.330	
	Voltage	[Volt]	220	220		220	
	Current	[A]	1.91	2.30	1.90	2.41	1.92
	Power	[Watt]	229	371	231	390	241

NOTE :



C:\Thermostatic Chamber\Test Files vers 1,1
Whirlpool\Neeasae1

Description:
DD460-43°C-Vuoto-Pos3(0000002)

ID Chamber: Chamber 1
Position D

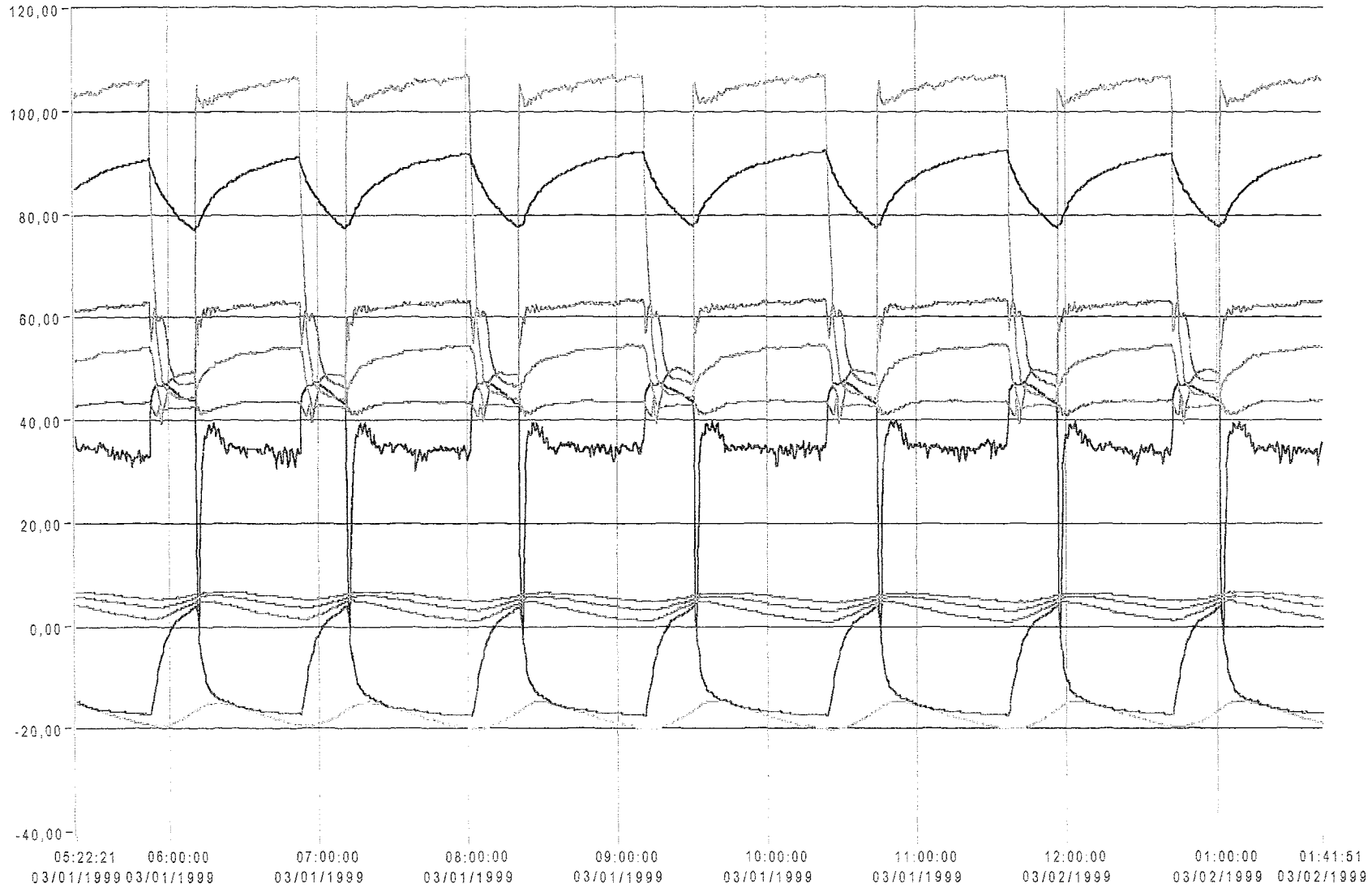
Sampling
Time(sec): 30

Test Start: 01/03/1999
17.22.21

Test Stop: 02/03/1999
08.25.12



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C:\Thermostatic Chamber\Test Files vers 1,1\
Whirlpool\Neeasael

Description:
DD460-43°C-Thermo.control-Pos1(00000002)

ID Chamber: Chamber 1
Position D

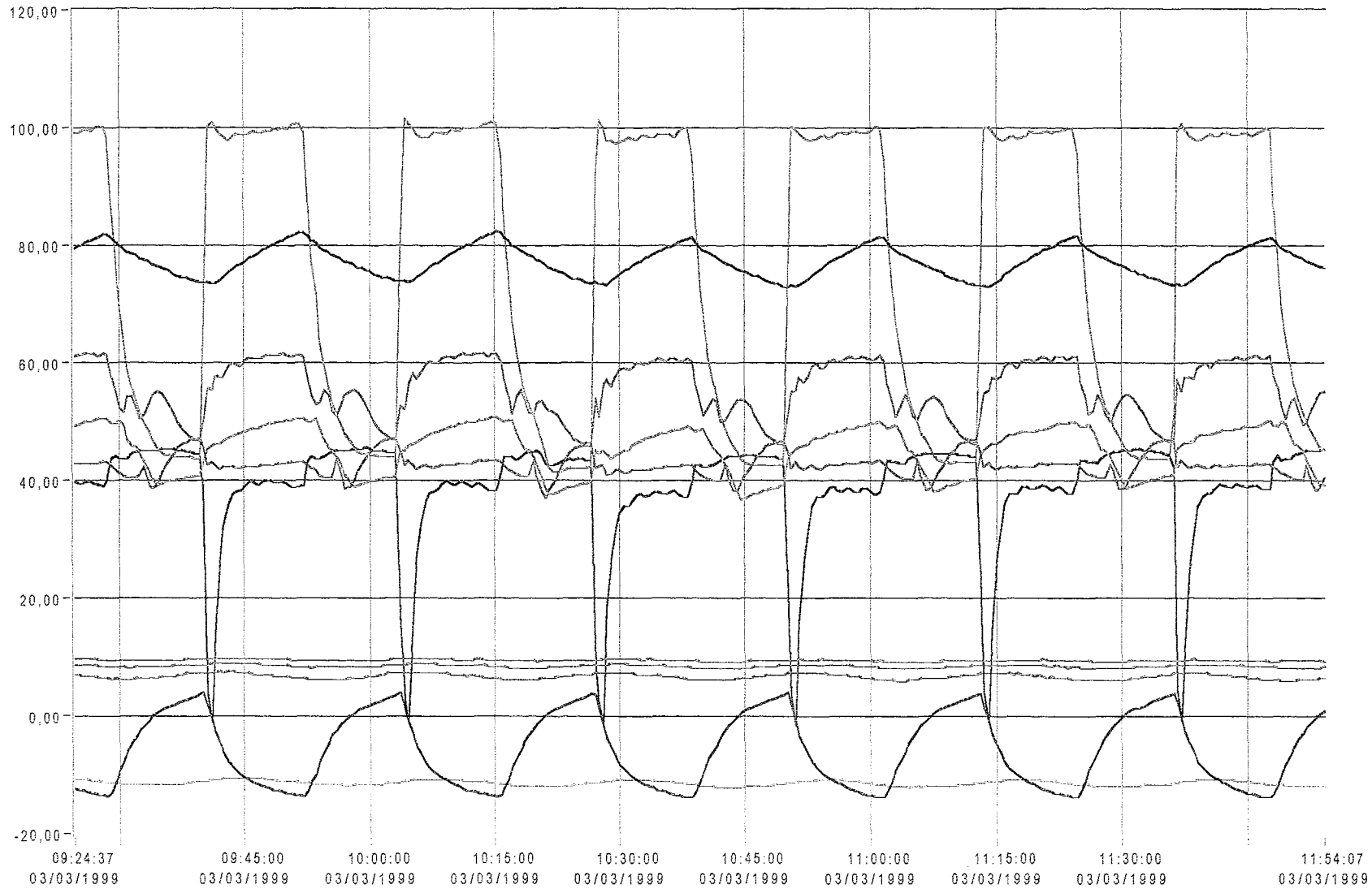
Sampling
Time(sec): 30

Test Start: 03/03/1999
09.24.37

Test Stop: 04/03/1999
08.39.24



appliances engineering



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.



WHIRLPOOL EUROPE

CABINET MODEL : **DD 460 (N°00000002) Class T**

TYPE of TEST : **THERMOSTAT CONTROL**

Date	10/03/99	Compressor : GL 90 AN
Ambient temperature	[°C] 38	Condenser : wires and tubes
Refrigerant R 134a	[gr] 290	

Thermostat setting			7 / 7	4 / 7		2 / 7	
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-21.2	+3.7	-19.7	+3.9	-15.3
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	-2.4	+5.3	+2.4	+8.4	+7.9
4	T 2 refrigerator temp.	[°C]	-3.8	+4.7	+0.6	+7.7	+6.8
5	T 3 refrigerator temp.	[°C]	-5.5	+4.0	-1.4	+6.5	+4.9
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-25.1	-14.5	-22.3	-11.3	-12.9
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	84.5	68.5	84.8	66.9	74.9
10	Condenser in temp.	[°C]	99.1	39.8	98.8	39.0	93.4
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	48.9	38.6	48.9	36.3	44.6
13	Oil cooler in temp.	[°C]	38.2	44.3	38.4	42.5	37.8
14	Oil cooler out temp.	[°C]	58.0	42.4	57.8	41.3	57.0
15	Suction pipe temp.	[°C]	20.0	38.3	27.3	39.6	35.6
	Refrig. temp. (Avr)	[°C]	-3.9	+2.6		+7.0	
	Freezer temp. (Avr)	[°C]	-25.1	-18.4		-12.1	
	Test Time	[h]	24	24		24	
	Running Time	[%]	100	63.3		45.1	
	Energy consumption	[Kwh/24h]		3.444		2.655	
	Voltage	[Volt]	220	220		220	
	Current	[A]	1.93	2.28	1.91	2.32	1.94
	Power	[Watt]	225	361	221	372	233

NOTE :



C A . G I .

C:\Thermostatic Chamber\Test Files vers 1,1\Whirlpool\Neeasael

Description: DD460-38°C-Thermostat control-Pos4(00000002)

ID Chamber: Chamber 1
Position D

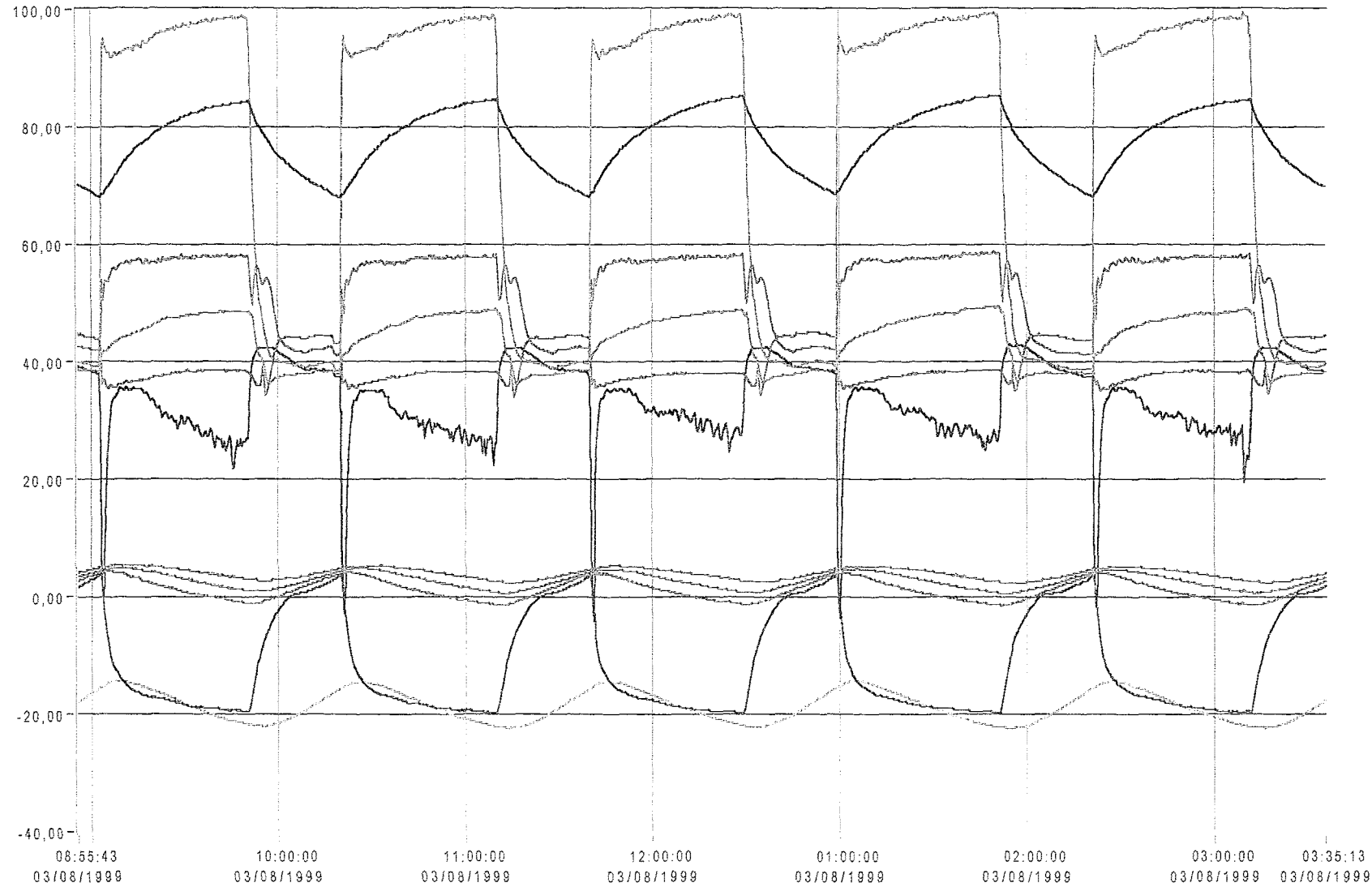
Sampling
Time(sec): 30

Test Start: 08/03/1999
08.55.43

Test Stop: 09/03/1999
08.35.00



appliances engineering



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.



C A . G I .

C:\Thermostatic Chamber\Test Files vers 1,1\
Whirlpool\Neeasael

Description: DD460-38°C-Thermostat
control-Pos2(00000002)

ID Chamber: Chamber 1
Position D

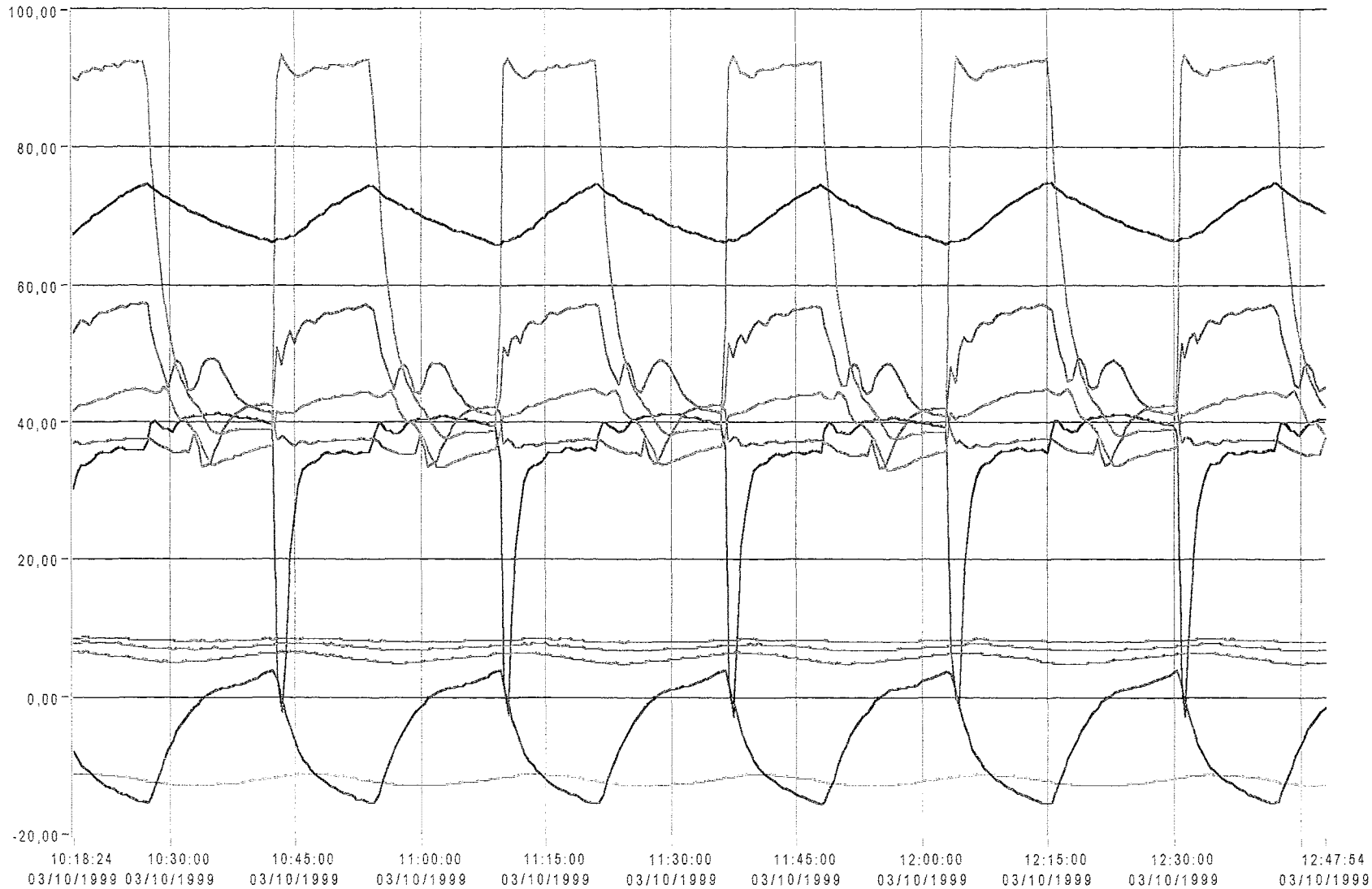
Sampling
Time(sec): 30

Test Start: 10/03/1999
10.18.24

Test Stop: 10/03/1999
16.08.21



appliances engineering



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe



WHIRLPOOL EUROPE

CABINET MODEL :	DD 460 (N°00000002) Class T
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TYPE of TEST :	LOADLESS RUNNING
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Date	15/03/99	Compressor : GL 90 AN
Ambient temperature	[°C] 32	Condenser : wires and tubes
Refrigerant R 134a	[gr] 290	

Thermostat setting		7 / 7					
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-23.7				
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	-6.2				
4	T 2 refrigerator temp.	[°C]	-7.7				
5	T 3 refrigerator temp.	[°C]	-9.2				
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-28.6				
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	76.1				
10	Condenser in temp.	[°C]	90.7				
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	42.3				
13	Oil cooler in temp.	[°C]	32.5				
14	Oil cooler out temp.	[°C]	52.2				
15	Suction pipe temp.	[°C]	9.3				
	Refrig. temp. (Avr)	[°C]	-7.7				
	Freezer temp. (Avr)	[°C]	-28.6				
	Test Time	[h]	24				
	Running Time	[%]	100				
	Energy consumption	[Kwh/24h]					
	Voltage	[Volt]	220				
	Current	[A]	1.88				
	Power	[Watt]	204				

NOTE :



WHIRLPOOL EUROPE

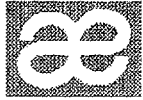
CABINET MODEL : **DD 460 (N°0000002) Class T**

TYPE of TEST : **THERMOSTAT CONTROL**

Date	18/03/99	Compressor : GL 90 AN
Ambient temperature	[°C] 25	Condenser : wires and tubes
Refrigerant R 134a	[gr] 290	

Thermostat setting			4 / 7		2 / 7			
T.C.			ON	OFF	ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	+3.6	-20.1	+3.6	-16.0		
2	Damper bulb temp.	[°C]						
3	T 1 refrigerator temp.	[°C]	+5.0	+4.0	+6.4	+6.1		
4	T 2 refrigerator temp.	[°C]	+4.7	+2.7	+6.1	+5.5		
5	T 3 refrigerator temp.	[°C]	+3.9	+0.9	+5.1	+3.9		
6	T 1 freezer temp.	[°C]						
7	T 2 freezer temp.	[°C]	-12.9	-17.5	-13.1	-14.8		
8	T 3 freezer temp.	[°C]						
9	Compressor temp.	[°C]	48.9	62.0	46.4	53.6		
10	Condenser in temp.	[°C]	27.0	75.4	26.2	70.4		
11	Condenser m.p. temp.	[°C]						
12	Condenser out temp.	[°C]	26.0	31.4	21.5	29.9		
13	Oil cooler in temp.	[°C]	30.8	25.1	29.3	25.0		
14	Oil cooler out temp.	[°C]	29.4	45.8	29.7	41.8		
15	Suction pipe temp.	[°C]	27.0	25.1	28.0	34.0		
	Refrig. temp. (Avr)	[°C]	+3.5		+5.5			
	Freezer temp. (Avr)	[°C]	-15.2		-13.9			
	Test Time	[h]	24		24			
	Running Time	[%]	34.1		31.8			
	Energy consumption	[Kwh/24h]	1.844		1.767			
	Voltage	[Volt]	220		220			
	Current	[A]	2.24	1.91	2.28	1.91		
	Power	[Watt]	340	201	353	216		

NOTE :



appliances engineering

DD460-25°C-Vuoto-Pos4(00000002).dat

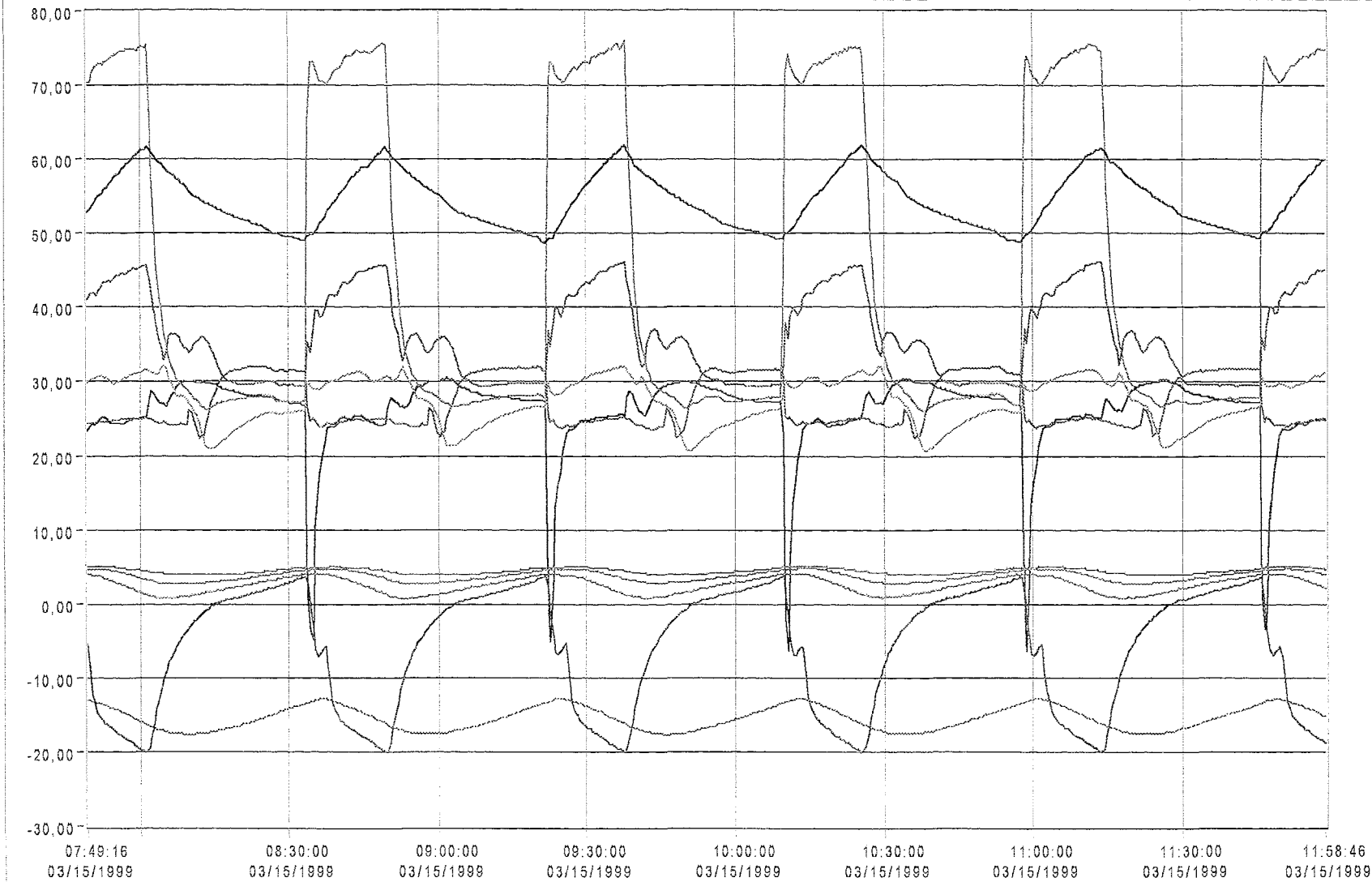
Descrizione DD460-25°C-Thermostat control-Pos4(00000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

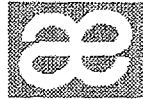
Inizio test: 15/03/1999 11.30.16

Non rilevata



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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appliances engineering

DD460-25°C-Vuoto-Pos2(00000002).dat

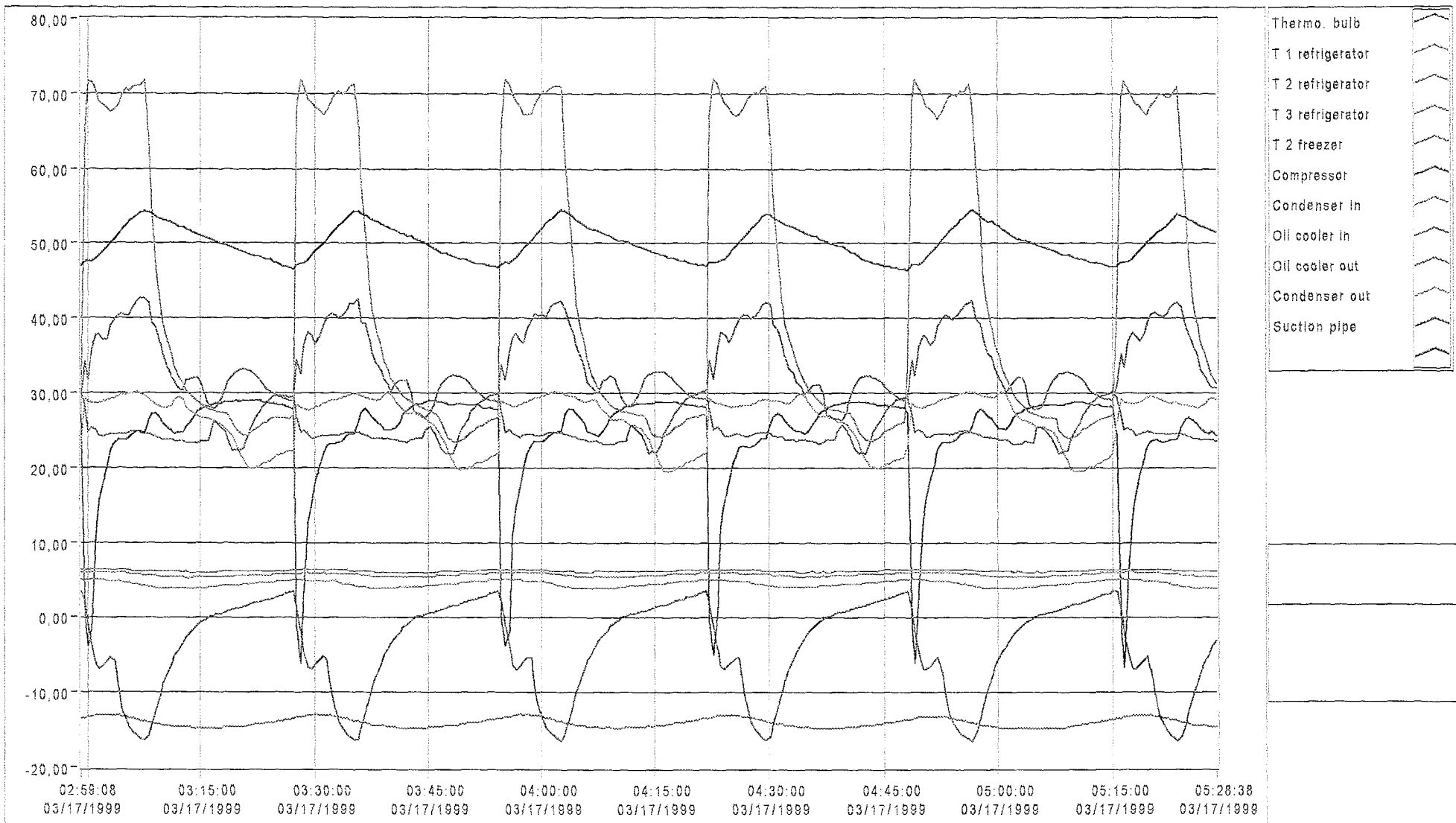
Descrizione DD460-25°C-Thermostat control-Pos2(00000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 17/03/1999 14.59.08

Fine test: 18/03/1999 08.46.41



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WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000002) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	23/03/99		Compressor : GL 90 AN
Ambient temperature	[°C]	18	Condenser : wires and tubes
Refrigerant R 134a	[gr]	290	

T.C.	Thermostat setting		5 / 7		3 / 7		ON	OFF
			ON	OFF	ON	OFF		
1	Thermostat bulb temp.	[°C]	+3.4	-23.1	+3.4	-18.8		
2	Damper bulb temp.	[°C]						
3	T 1 refrigerator temp.	[°C]	+3.8	+1.5	+5.0	+4.7		
4	T 2 refrigerator temp.	[°C]	+3.7	+0.1	+4.8	+4.2		
5	T 3 refrigerator temp.	[°C]	+3.6	-1.7	+4.2	+2.8		
6	T 1 freezer temp.	[°C]						
7	T 2 freezer temp.	[°C]	-10.9	-21.3	-14.4	-17.1		
8	T 3 freezer temp.	[°C]						
9	Compressor temp.	[°C]	37.3	55.4	36.1	42.9		
10	Condenser in temp.	[°C]	19.8	66.3	20.2	56.0		
11	Condenser m.p. temp.	[°C]						
12	Condenser out temp.	[°C]	18.3	23.1	19.4	22.2		
13	Oil cooler in temp.	[°C]	23.2	17.9	23.3	17.5		
14	Oil cooler out temp.	[°C]	21.9	40.3	22.0	35.5		
15	Suction pipe temp.	[°C]	19.8	17.5	20.8	18.2		
	Refrig. temp. (Avr)	[°C]	+1.8		+4.3			
	Freezer temp. (Avr)	[°C]	-16.1		-15.7			
	Test Time	[h]	24		24			
	Running Time	[%]	26.7		25.0			
	Energy consumption	[Kwh/24h]	1.352		1.328			
	Voltage	[Volt]	220		220			
	Current	[A]	2.32	1.86	2.19	1.88		
	Power	[Watt]	325	190	324	200		

NOTE :



appliances engineering

DD460-18°C-Vuoto-Pos5(00000002).dat

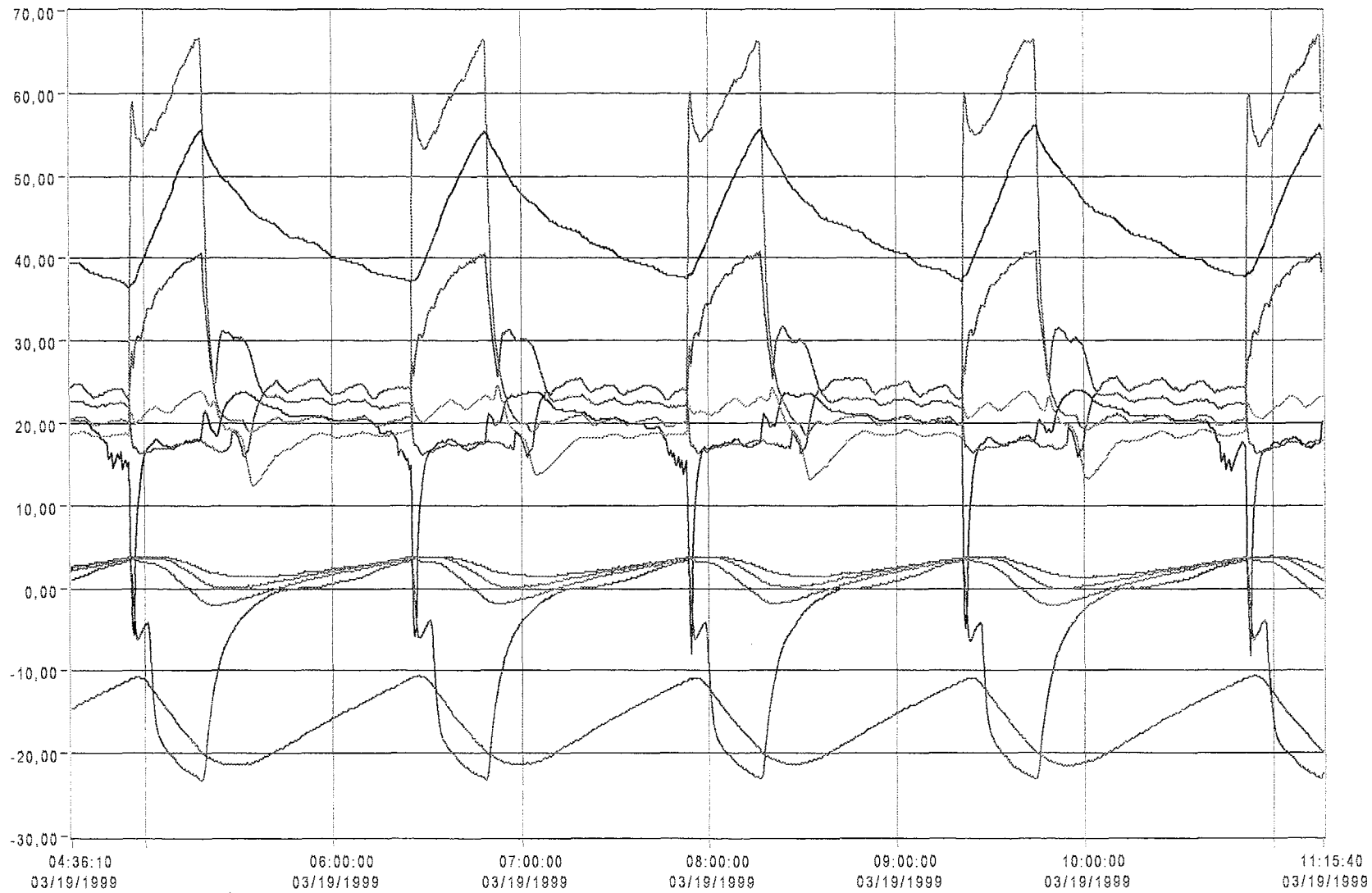
Descrizione DD460-18°C-Thermostat control-Pos5(00000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 19/03/1999 16.36.10

Fine test: 20/03/1999 08.35.57



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.



appliances engineering

DD460-18°C-Vuoto-Pos3(00000002).dat

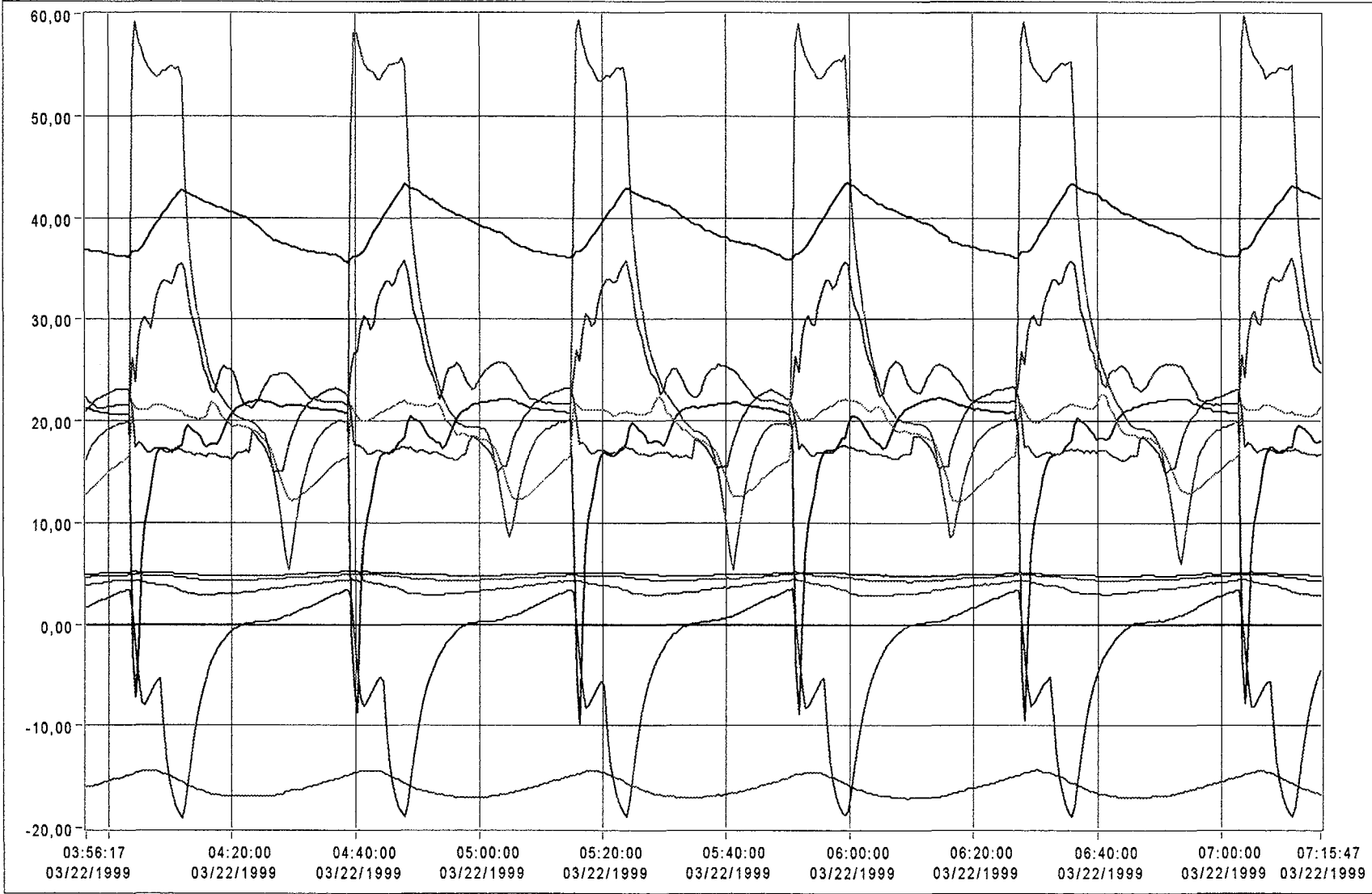
Descrizione DD460-18°C-Thermostat control-Pos3(00000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 22/03/1999 15.56.17

Fine test: 23/03/1999 08.48.39



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL :	DD 460 (N°00000002) Class T
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TYPE of TEST :	PULL DOWN
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Date	04/03/99	Compressor : GL 90 AN
Refrigerant R 134a	[gr] 290	Condenser : wires and tubes

	Ambient temperature	[°C]	43	38	
	Thermostat setting		CC	CC	
T.C.					
1	Thermostat bulb temp.	[°C]	-18.6	-20.8	
2	Damper bulb temp.	[°C]			
3	T 1 refrigerator temp.	[°C]	+1.3	-1.2	
4	T 2 refrigerator temp.	[°C]	-0.2	-2.6	
5	T 3 refrigerator temp.	[°C]	-1.9	-4.3	
6	T 1 freezer temp.	[°C]			
7	T 2 freezer temp.	[°C]	-23.0	-24.7	
8	T 3 freezer temp.	[°C]			
9	Compressor temp.	[°C]	91.1	85.7	
10	Condenser in temp.	[°C]	106.3	99.4	
11	Condenser m.p. temp.	[°C]			
12	Condenser out temp.	[°C]	54.2	49.6	
13	Oil cooler in temp.	[°C]	43.6	38.6	
14	Oil cooler out temp.	[°C]	62.6	58.5	
15	Suction pipe temp.	[°C]	30.1	20.1	
	Refrig. temp. (Avr)	[°C]	-0.3	-2.7	
	Freezer temp. (Avr)	[°C]	-23.0	-24.7	
	Test Time	[h]	6	6	
	Running Time	[%]	100	100	
	Energy consumption	[Kwh/24h]			
	Voltage	[Volt]	220	220	
	Current	[A]	1.95	1.86	
	Power	[Watt]	236	216	

NOTE :



C A . G I .

C:\Thermostatic Chamber\Test Files vers 1,1\ Whirlpool\Neeasae\

Description: DD460-43°C-Pull down-PosMax(00000002)

ID Chamber: Chamber 1
Position D

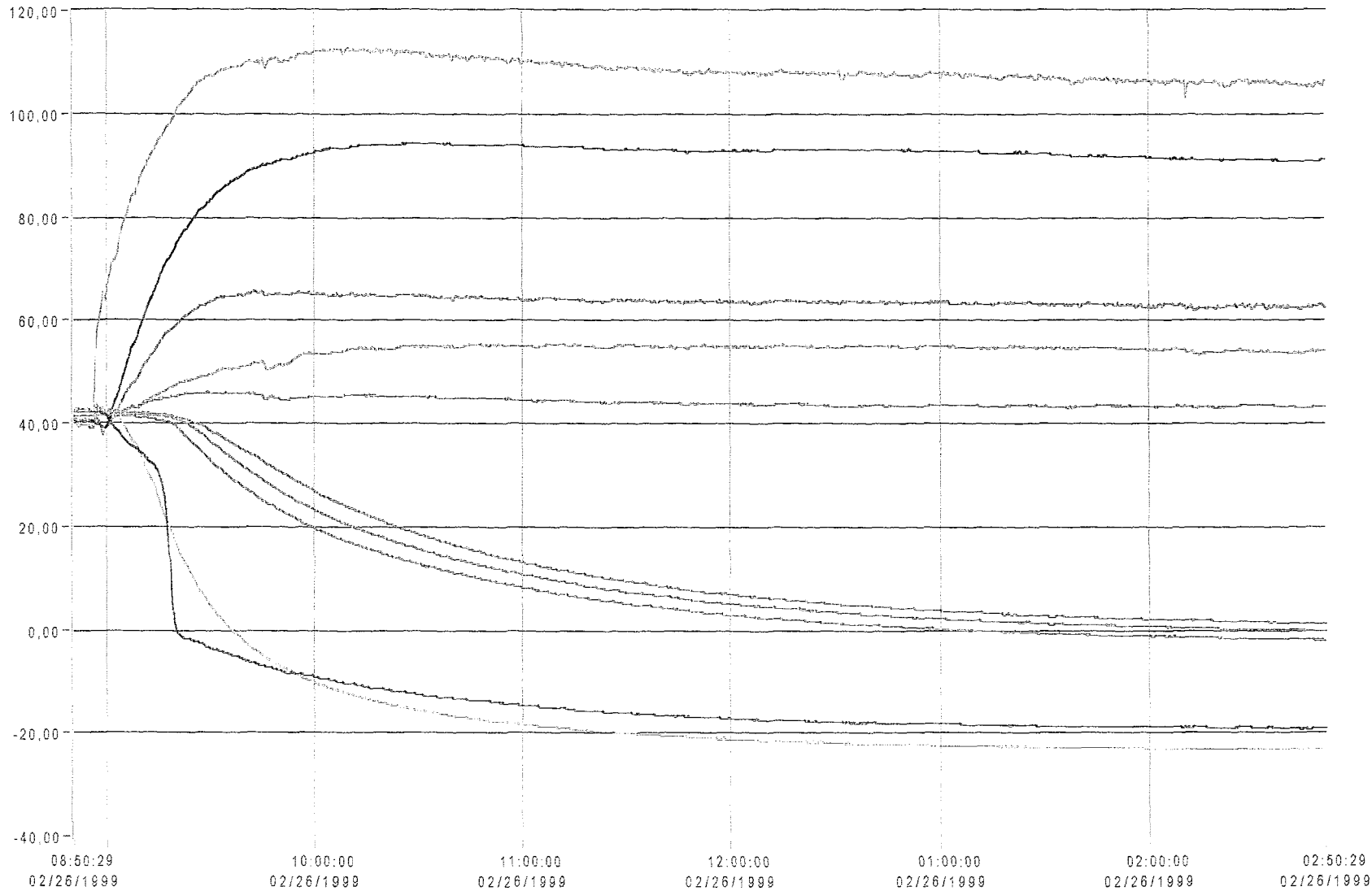
Sampling
Time(sec): 30

Test Start: 26/02/1999
08.50.29

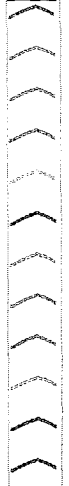
Test Stop: 27/02/1999
08.01.16



appliances engineering



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe



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C:\Thermostatic Chamber\Test Files vers 1,1\
Whirlpool\Neeasae\DD460-38°C-Pull

Description: DD460-38°C-Pull
down(00000002)

ID Chamber: Chamber 1
Position D

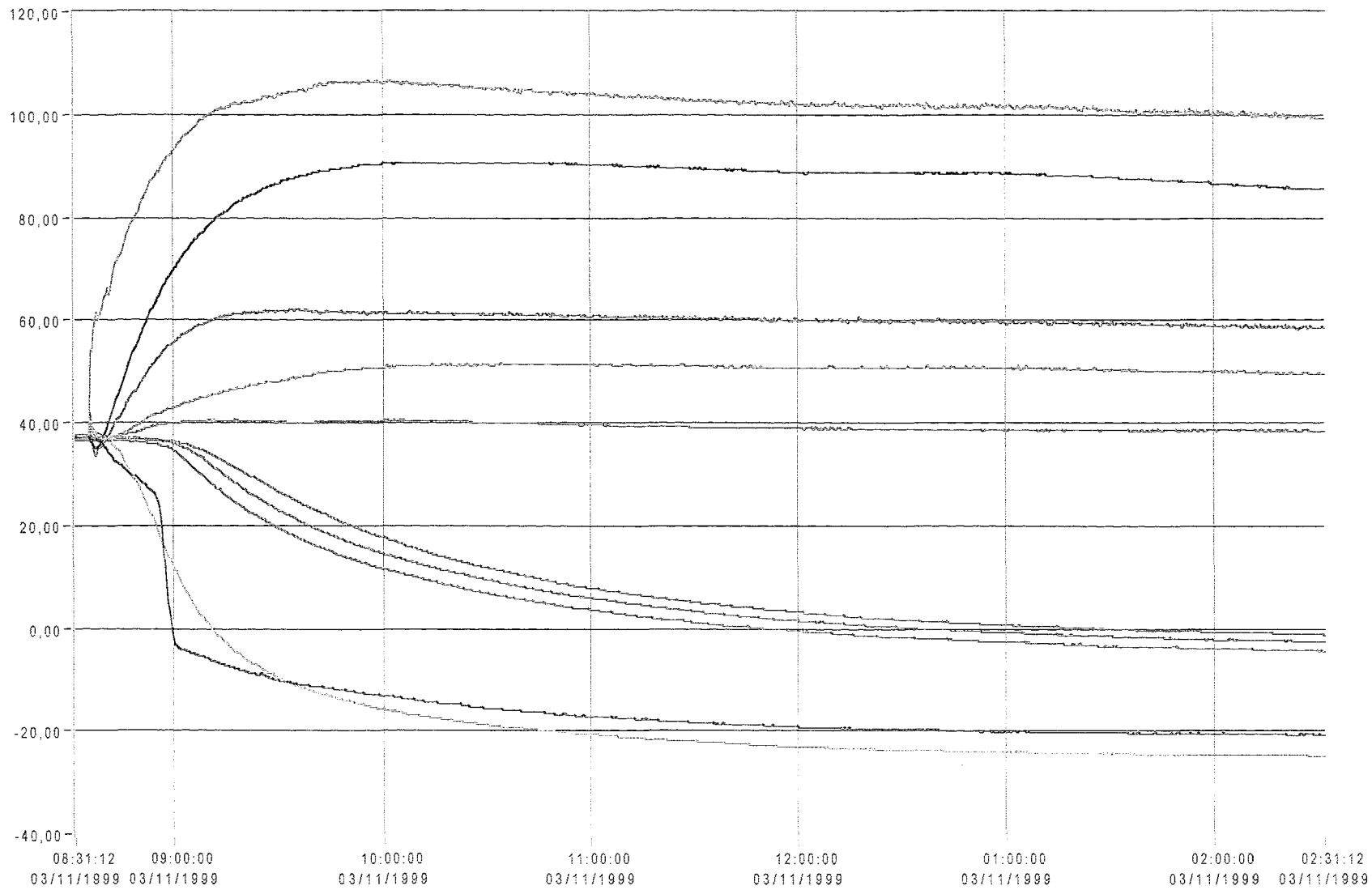
Sampling
Time(sec): 30

Test Start: 11/03/1999
08.31.12

Test Stop: 11/03/1999
14.34.09



appliances engineering



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe



WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000002) Class T

TYPE of TEST : STORAGE TEST

Date	29/04/99		Compressor : GL 90 AN					
Storage load	[Kg]	45	Condenser : wires and tubes					
Refrigerant R 134a	[gr]	290						
Ambient temperature	[°C]	43		38		18		
Thermostat setting		3 / 7		4 / 7		6 / 7		
T.C.		ON	OFF	ON	OFF	ON	OFF	
1	Thermostat bulb temp.	[°C]	+3.9	-17.5	+3.6	-20.1	+3.4	-25.3
2	Damper bulb temp.	[°C]						
3	T 1 refrigerator temp.	[°C]	+6.6	+4.5	+5.5	+0.7	+5.8	-6.6
4	T 2 refrigerator temp.	[°C]	+6.0	+2.8	+5.1	-0.9	+5.7	-8.2
5	T 3 refrigerator temp.	[°C]	+5.2	+0.8	+4.7	-2.8	+5.5	-9.8
6	T package 1	[°C]	-16.8	-17.9	-18.1	-20.0	-16.4	-21.4
7	T package 2	[°C]	-14.7	-15.5	-16.3	-17.6	-15.2	-18.8
8	T package 3	[°C]	-19.1	-19.3	-20.7	-21.1	-19.8	-21.4
9	T package 4	[°C]	-18.3	-18.5	-20.0	-20.3	-19.6	-20.8
10	T package 5	[°C]						
11	T package 6	[°C]						
12	Compressor temp.	[°C]	75.1	90.9	65.6	86.7	26.8	64.3
13	Condenser in temp.	[°C]	44.0	105.6	39.3	100.7	19.3	78.0
14	Condenser out temp.	[°C]	42.4	52.4	38.0	47.3	18.2	26.1
15	Suction pipe temp.	[°C]	42.2	33.6	37.0	26.9	18.5	11.0
	Refrig. temp. (Avr)	[°C]	+4.3		+2.0		-1.3	
	Warmer package	[°C]	-14.7		-16.3		-15.2	
	Average of packages	[°C]	-17.5		-19.3		-19.2	
	Test Time	[h]	24		24		24	
	Running Time	[%]	74.8		66		27.4	
	Energy consumption	[Kwh/24h]	4.198		3.641		1.506	
	Voltage	[Volt]	220		220		220	
	Current	[A]	2.24	1.90	2.24	1.89	2.14	1.78
	Power	[Watt]	351	236	347	222	311	188

NOTE :



appliances engineering

DD460-43°C-Cons-Pos3(00000002).dat

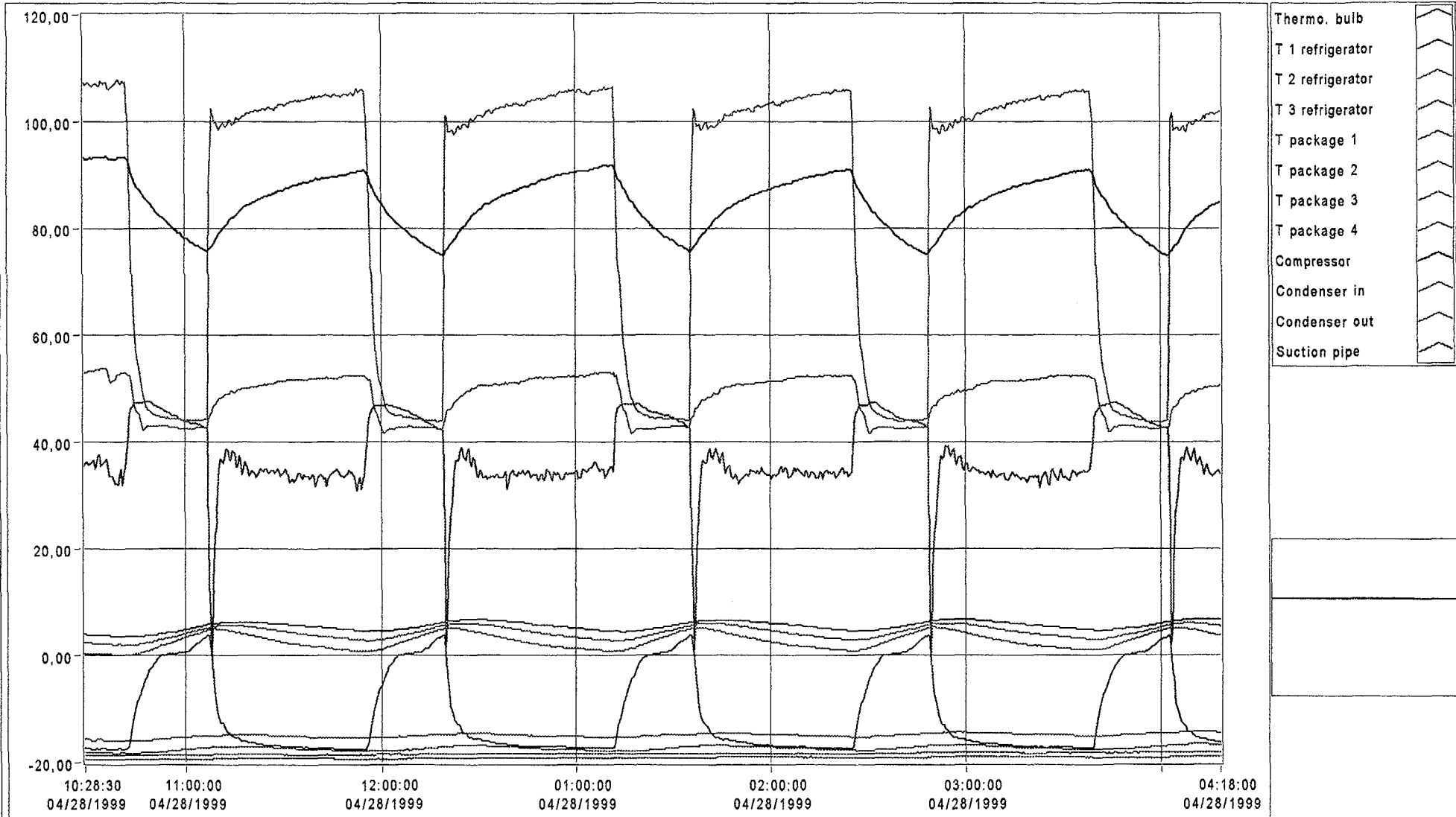
Descrizione DD460-43°C-Storage test-Pos3(00000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 28/04/1999 10.28.30

Fine test: 29/04/1999 08.36.54



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DD460-38°C-Cons-Pos4(00000002).dat

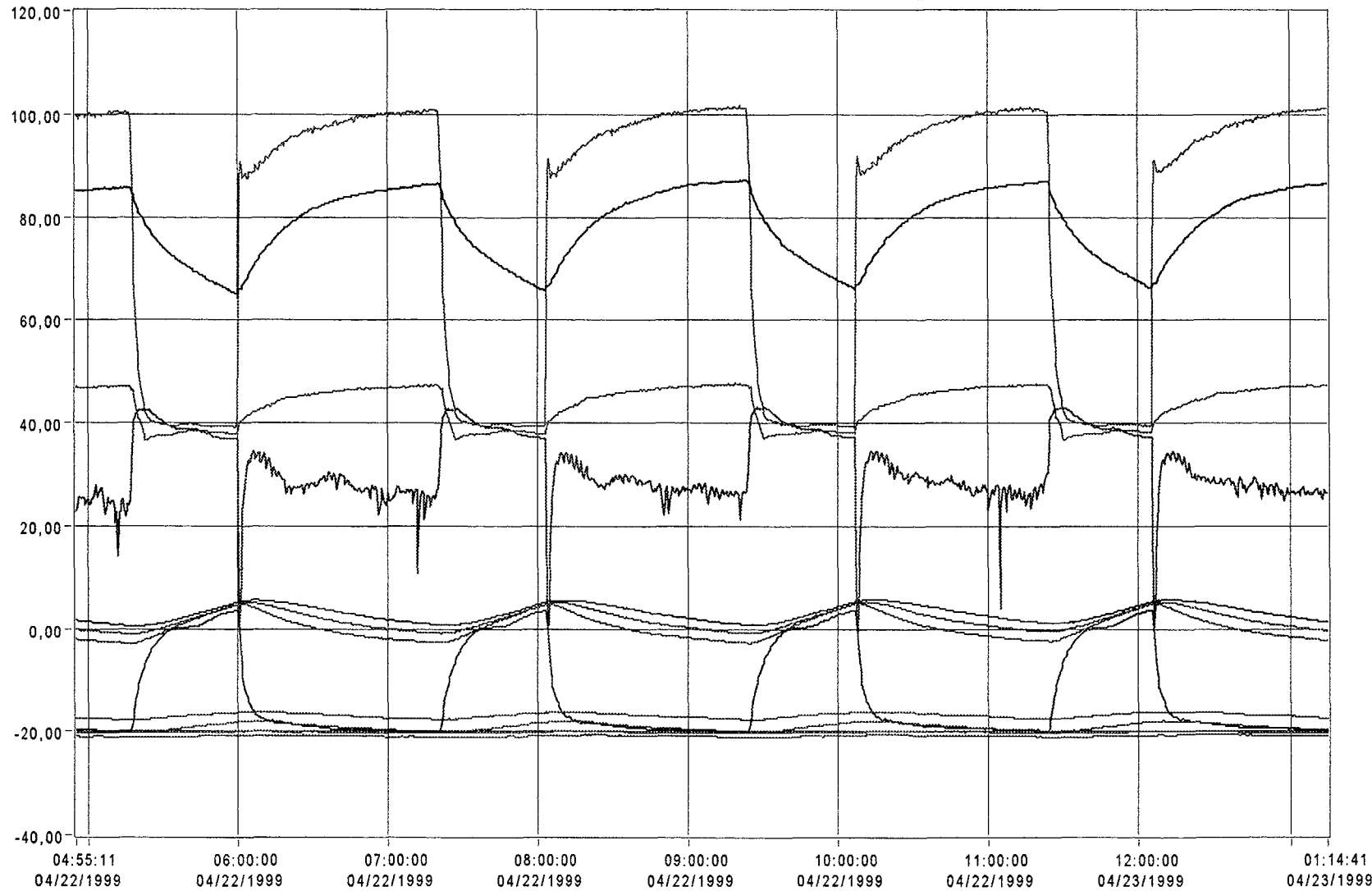
Descrizione DD460-38°C-Storage test-Pos4(00000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 22/04/1999 16.55.11

Fine test: 23/04/1999 08.35.28



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.



appliances engineering

DD460-18°C-Cons-Pos6(00000002).dat

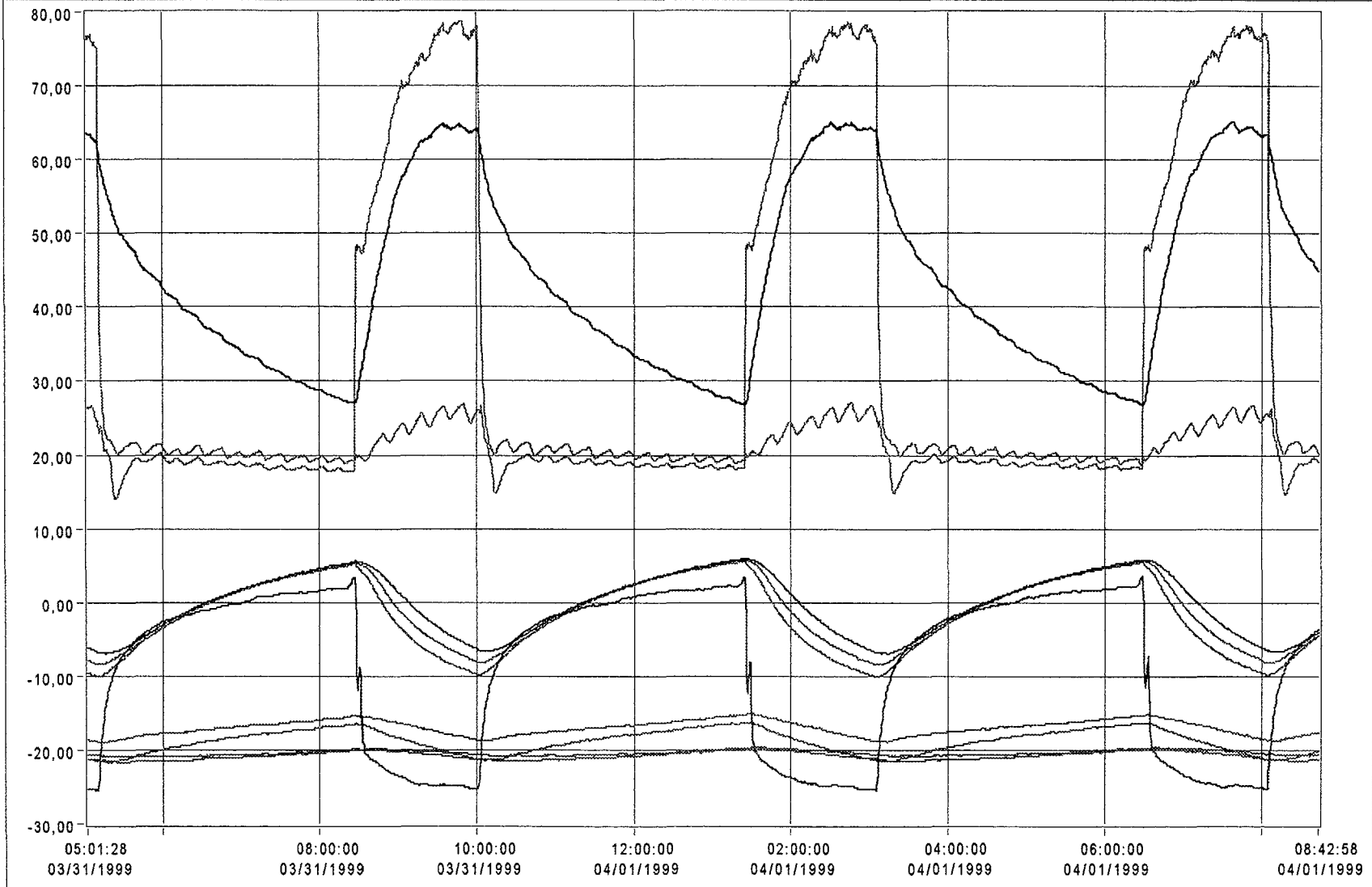
Descrizione DD460-18°C-Storage test-Pos6(00000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 31/03/1999 17.01.28

Fine test: 01/04/1999 08.43.48



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.



WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000002) Class T

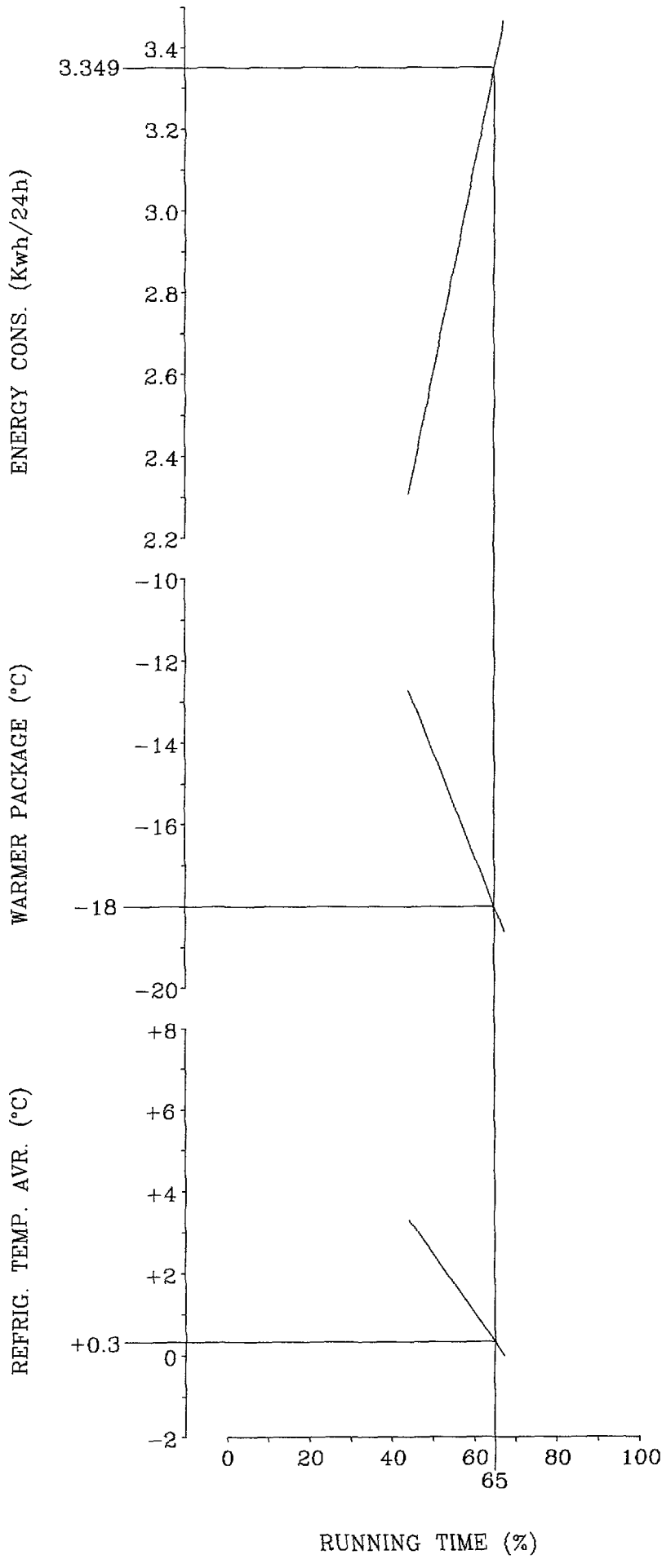
TYPE of TEST : ENERGY CONSUMPTION

Date	21/04/99		Compressor : GL 90 AN
Ambient temperature	[°C]	32	Condenser : wires and tubes
Storage load	[Kg]	45	
Refrigerant R 134a	[gr]	290	

Thermostat setting		5 / 7		4 / 7		
T.C.		ON	OFF	ON	OFF	
1	Thermostat bulb temp. [°C]	+3.7	-22.8	+3.6	-19.7	
2	Damper bulb temp. [°C]					
3	T 1 refrigerator temp. [°C]	+5.8	-4.0	+5.6	+3.3	
4	T 2 refrigerator temp. [°C]	+5.4	-5.3	+5.3	+1.6	
5	T 3 refrigerator temp. [°C]	+5.2	-6.9	+4.8	-0.5	
6	T package 1 [°C]	-19.8	-23.4	-15.0	-16.1	
7	T package 2 [°C]	-18.6	-21.3	-12.7	-13.3	
8	T package 3 [°C]	-23.2	-24.1	-17.5	-17.8	
9	T package 4 [°C]	-22.7	-23.2	-17.0	-17.2	
10	T package 5 [°C]					
11	T package 6 [°C]					
12	Compressor temp. [°C]	53.4	79.1	57.9	74.3	
13	Condenser in temp. [°C]	33.9	93.4	32.9	90.7	
14	Condenser out temp. [°C]	33.1	41.7	32.0	39.3	
15	Suction pipe temp. [°C]	31.8	26.7	31.8	27.3	Interpolated
						at -18 [°C]
	Refrig. temp. (Avr) [°C]	0.0		+3.3		+0.3
	Warmer package [°C]	-18.6		-12.7		-18.0
	Average of packages [°C]	-22.0		-15.8		
	Test Time [h]	24		24		
	Running Time [%]	67.3		44.3		65
	Energy consumption [Kwh/24h]	3.467		2.309		3.349
	Voltage [Volt]	220		220		
	Current [A]	2.20	1.84	1.98	1.88	
	Power [Watt]	324	206	262	210	

NOTE :

DD 460
ENERGY CONSUMPTION (with load) AT 32°C





appliances engineering

DD460-32°C-Energy cons-Pos5(00000002).dat

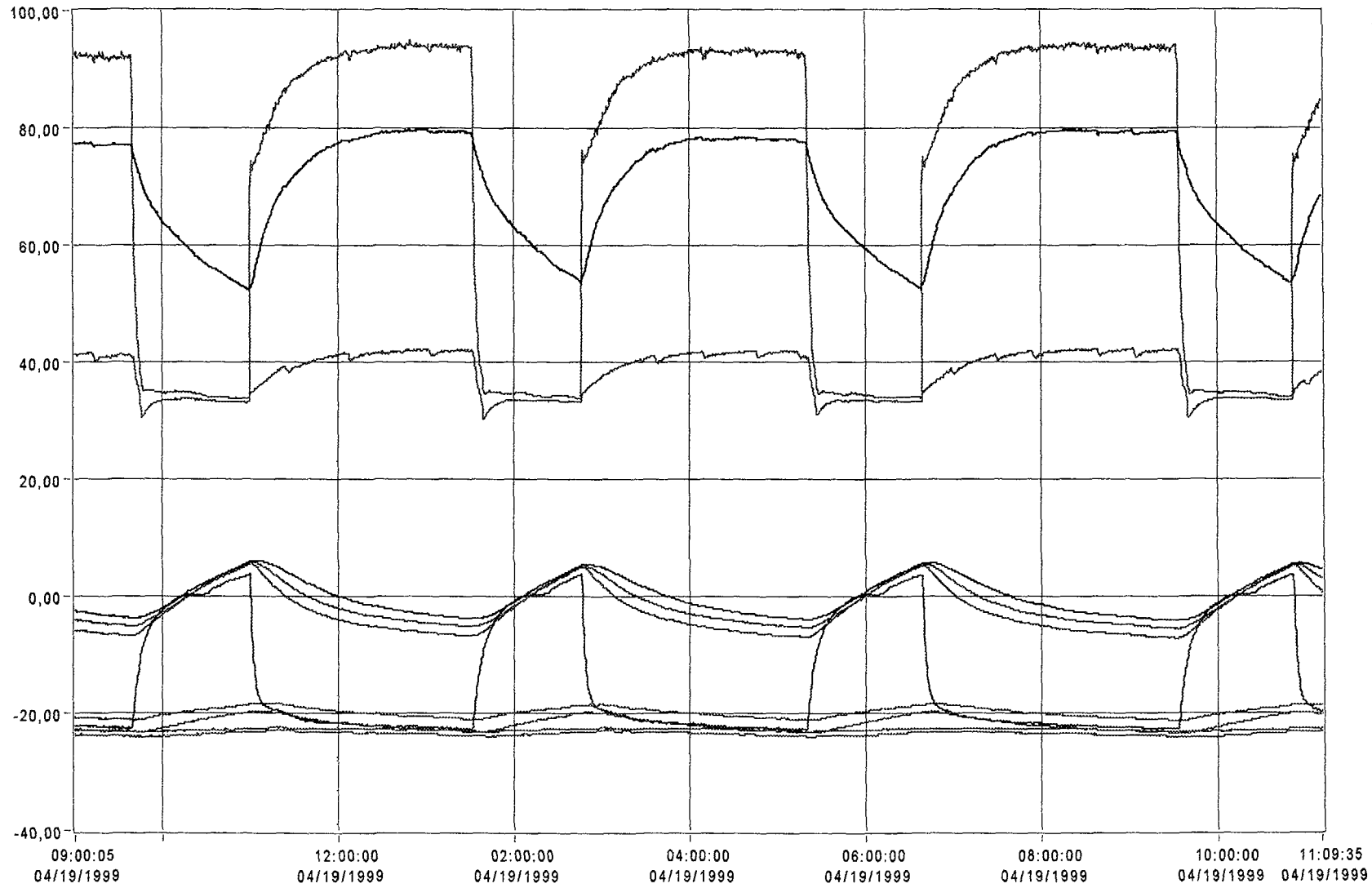
Descrizione DD460-32°C-Energy cons-Pos5(00000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 19/04/1999 09.00.05

Fine test: 20/04/1999 09.00.03



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

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appliances engineering

DD460-32°C-Energy cons-Pos4(00000002).dat

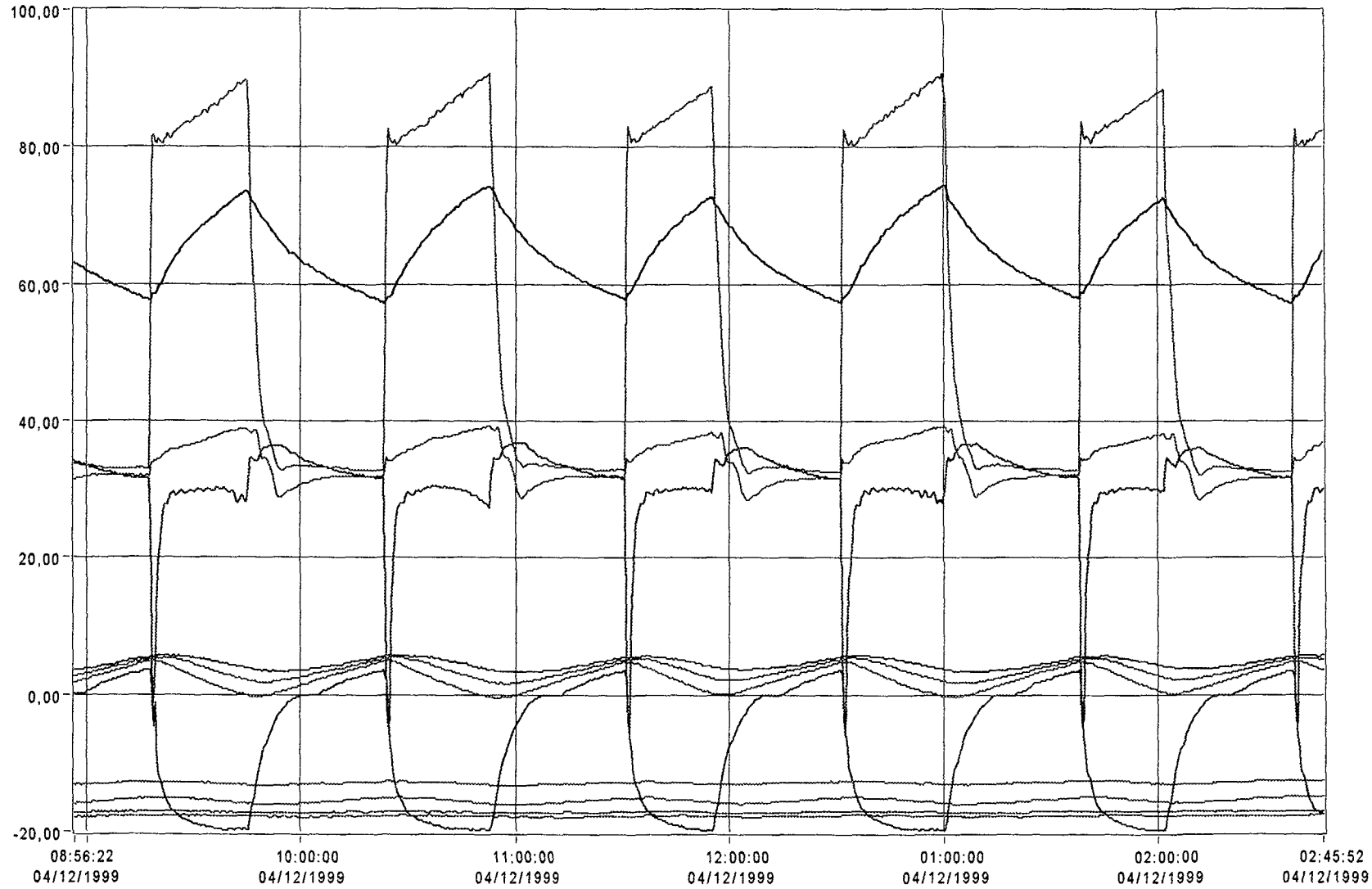
Descrizione DD460-32°C-Energy cons-Pos4(00000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 12/04/1999 08.56.22

Fine test: 13/04/1999 08.38.20



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000002) Class T

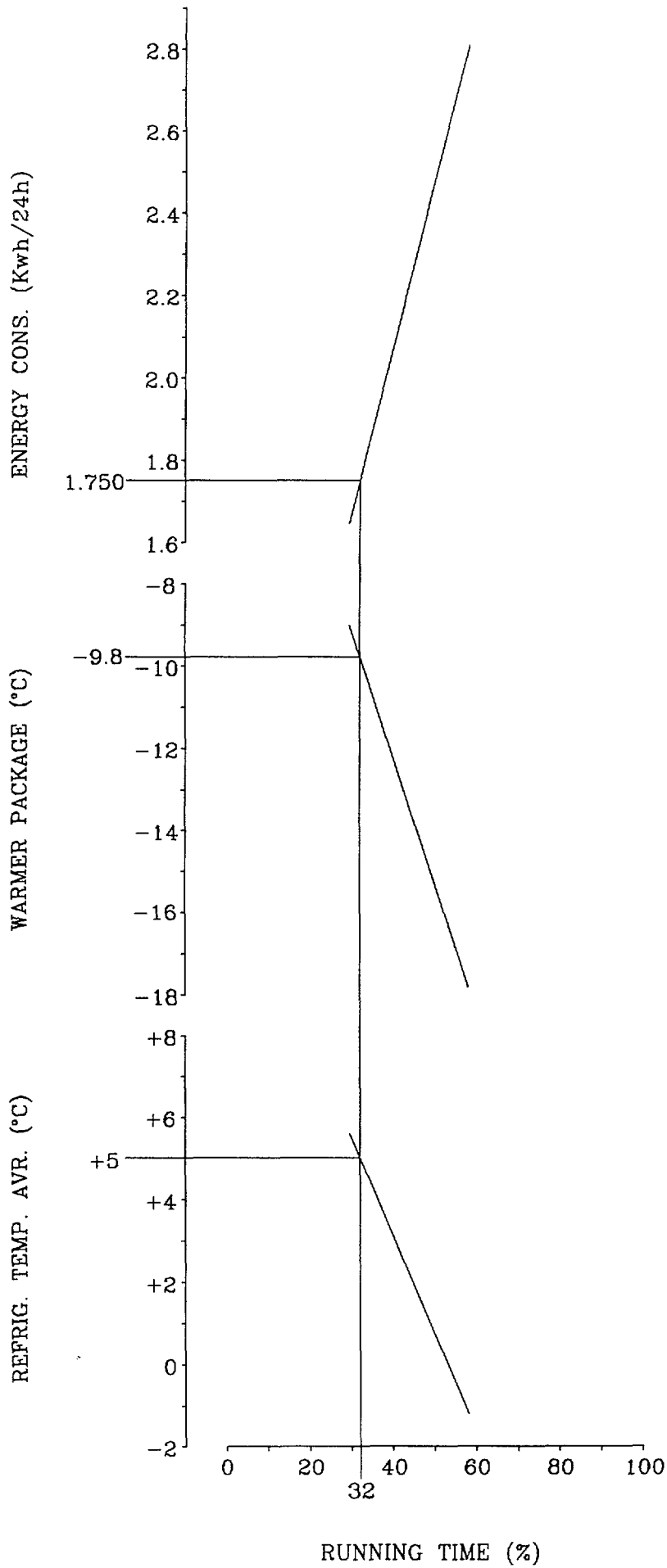
TYPE of TEST : ENERGY CONSUMPTION

Date	07/04/99		Compressor : GL 90 AN
Ambient temperature	[°C]	25	Condenser : wires and tubes
Storage load	[Kg]	45	
Refrigerant R 134a	[gr]	290	

Thermostat setting		6 / 7		3 / 7		
T.C.		ON	OFF	ON	OFF	
1	Thermostat bulb temp. [°C]	+3.7	-25.3	+4.0	-17.5	
2	Damper bulb temp. [°C]					
3	T 1 refrigerator temp. [°C]	+6.9	-7.8	+6.6	+6.2	
4	T 2 refrigerator temp. [°C]	+6.8	-9.1	+6.2	+5.5	
5	T 3 refrigerator temp. [°C]	+6.5	-10.6	+5.3	+4.0	
6	T package 1 [°C]	-19.0	-24.7	-11.7	-11.9	
7	T package 2 [°C]	-17.8	-22.3	-9.0	-9.1	
8	T package 3 [°C]	-23.0	-24.8	-14.3	-14.4	
9	T package 4 [°C]	-22.8	-23.9	-13.8	-13.9	
10	T package 5 [°C]					
11	T package 6 [°C]					
12	Compressor temp. [°C]	36.8	69.1	46.2	53.6	
13	Condenser in temp. [°C]	25.9	82.7	27.1	71.6	
14	Condenser out temp. [°C]	25.6	33.8	23.9	29.7	
15	Suction pipe temp. [°C]	24.9	2.3	27.5	24.6	Interpolated
						at +5[°C]
	Refrig. temp. (Avr) [°C]	-1.2		+5.6		+5.0
	Warmer package [°C]	-17.8		-9.0		-9.8
	Average of packages [°C]	-22.3		-12.3		
	Test Time [h]	24		24		
	Running Time [%]	58.1		29.5		32
	Energy consumption [Kwh/24h]	2.809		1.647		1.750
	Voltage [Volt]	220		220		
	Current [A]	2.22	1.87	2.20	1.90	
	Power [Watt]	323	211	340	218	

NOTE :

DD 460
ENERGY CONSUMPTION (with load) AT 25°C





appliances engineering

DD460-25°C-Energy cons-Pos6(0000002).dat

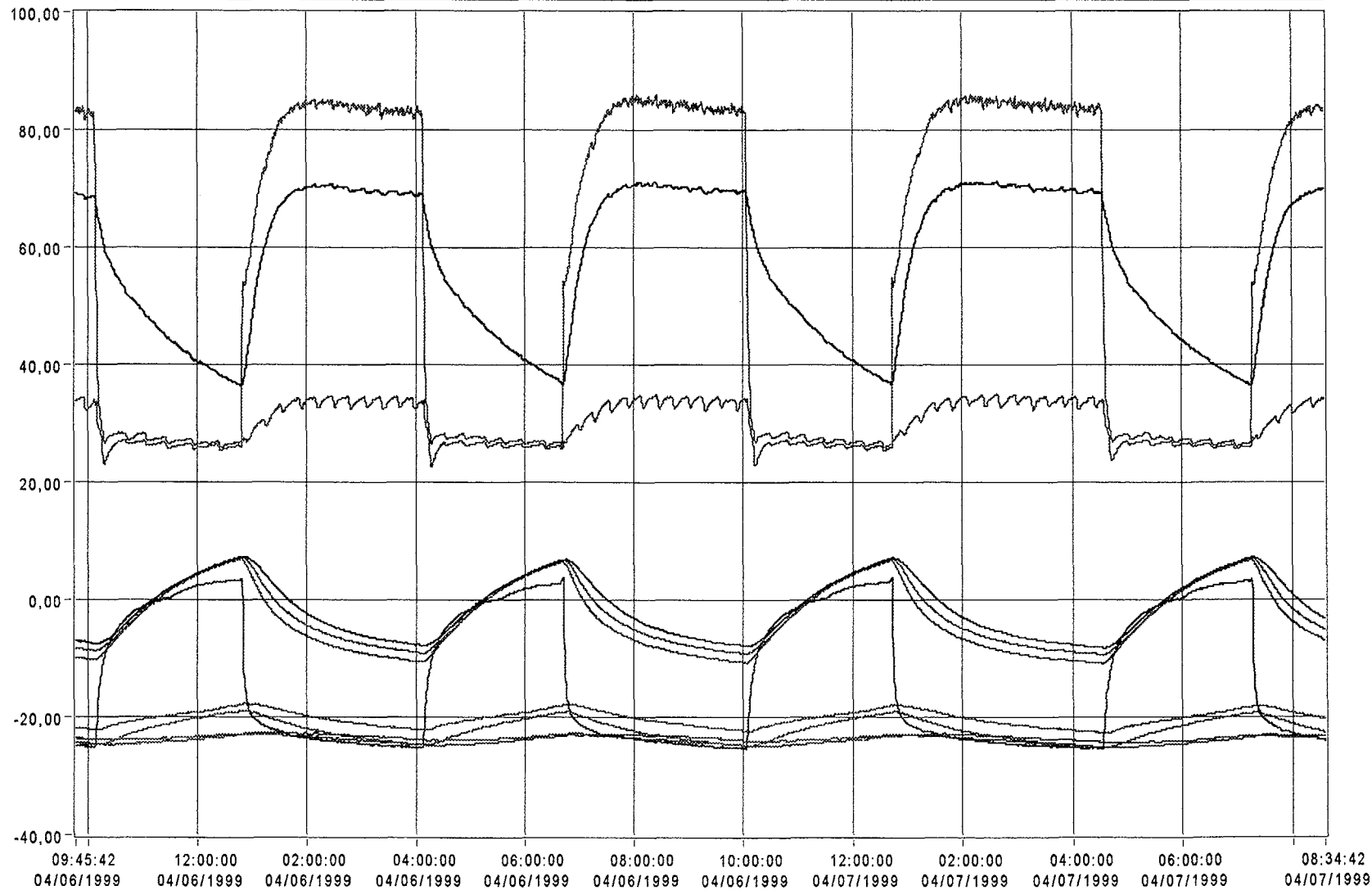
Descrizione DD460-25°C-Energy cons-Pos6(0000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 06/04/1999 09.45.42

Fine test: 07/04/1999 08.35.43



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

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DD460-25°C-Energy cons-Pos3(00000002).dat

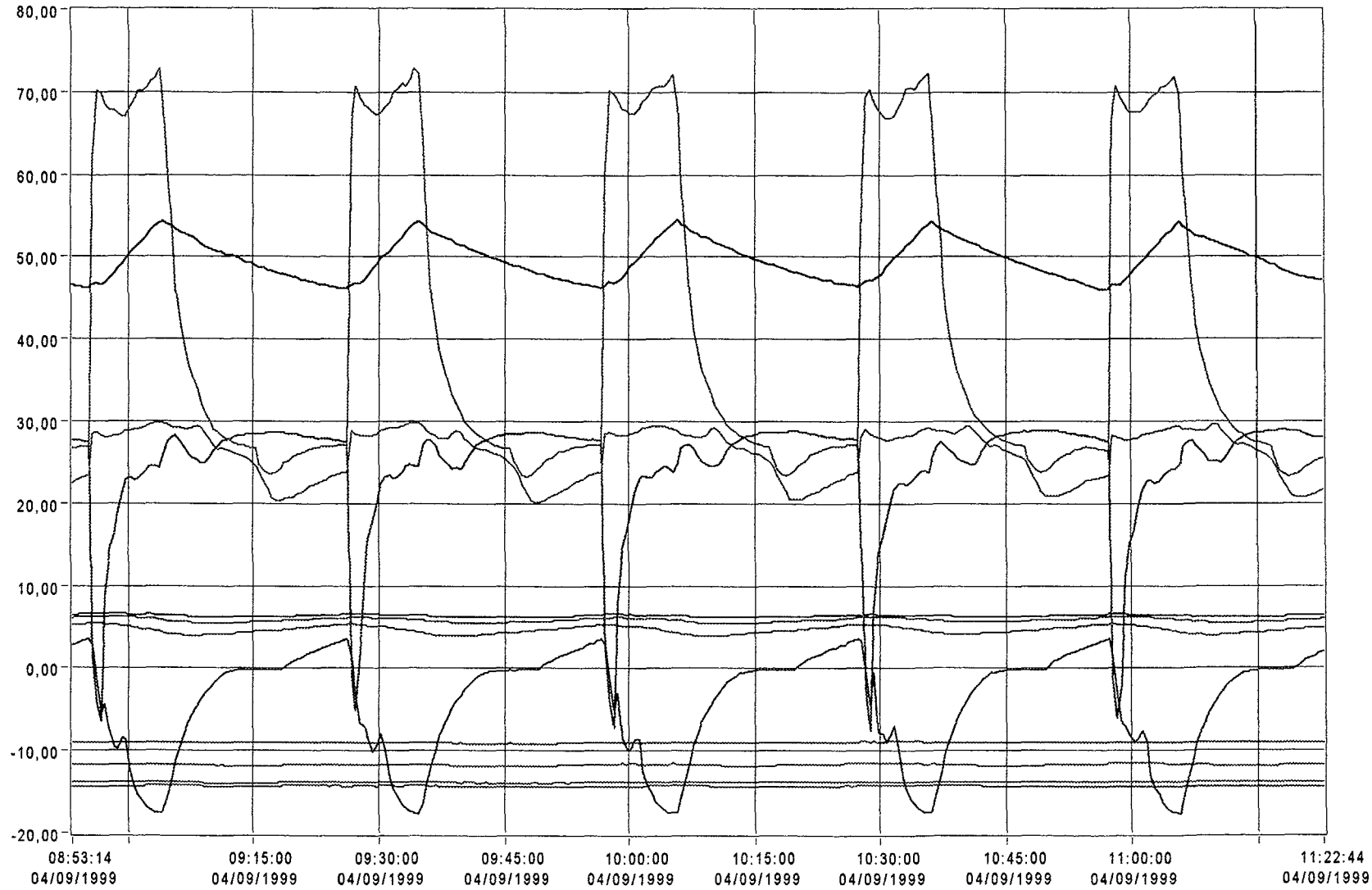
Descrizione DD460-25°C-Energy cons-Pos3(00000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 09/04/1999 08.53.14

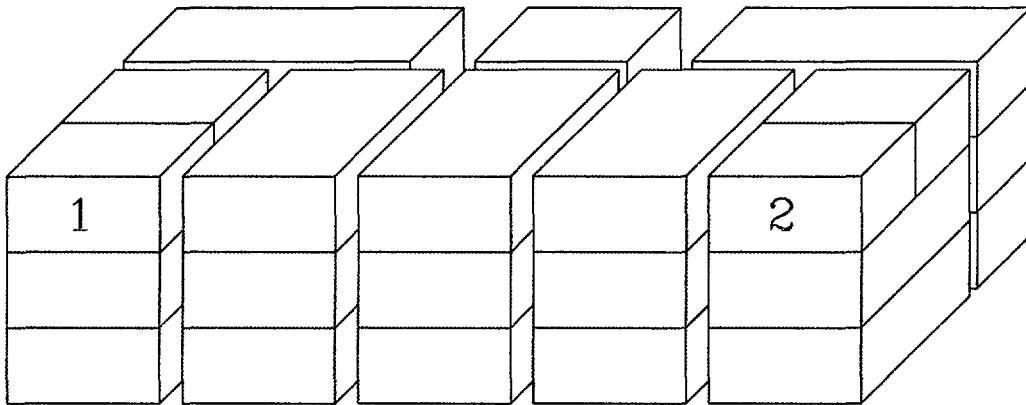
Fine test: 10/04/1999 08.10.41



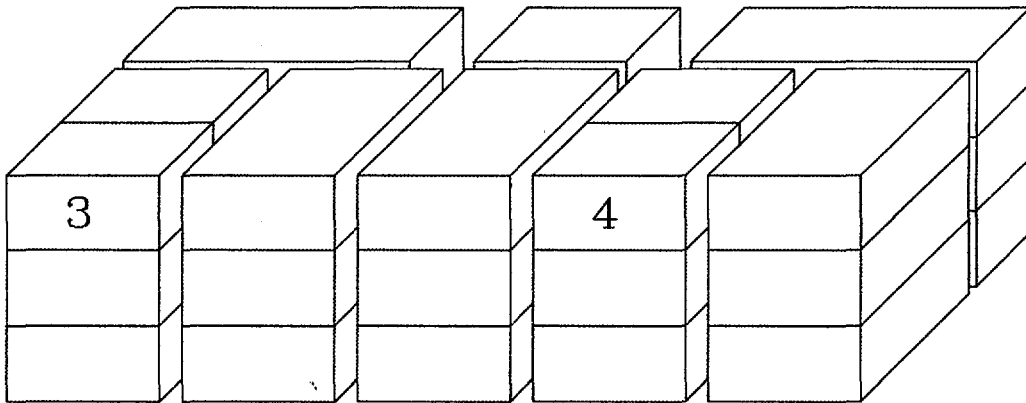
- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T package 1
- T package 2
- T package 3
- T package 4
- Compressor
- Condenser in
- Condenser out
- Suction pipe

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DD 460
LOADING SCHEME
TOTAL PACKAGES 45 Kg



22.5 Kg
(SHELF)



22.5 Kg
(BOTTOM)



WHIRLPOOL EUROPE

CABINET MODEL : **DD 460 (N°00000002) Class T**

TYPE of TEST : **ELECTRICAL TEST (low starting voltage)**

Date	06/05/99	
Ambient temperature	[°C]	43
Refrigerant R 134a	[gr]	290
Compressor : GL 90 AN		
Condenser : wires and tubes		

		Pull down min	
1	Thermostat bulb temp.	[°C]	-19.0
2	T 1 refrigerator temp.	[°C]	+1.4
3	T 2 refrigerator temp.	[°C]	-0.1
4	T 3 refrigerator temp.	[°C]	-1.9
5	T 1 freezer temp.	[°C]	
6	T 2 freezer temp.	[°C]	-23.2
7	T 3 freezer temp.	[°C]	
8	Compressor temp.	[°C]	86.5
9	Condenser in temp.	[°C]	101.6
10	Condenser out temp.	[°C]	51.0
11	Oil cooler in temp.	[°C]	43.3
12	Oil cooler out temp.	[°C]	61.6
13	Suction pipe temp.	[°C]	25.2
	Refrig. temp. (Avr)	[°C]	-0.2
	Freezer temp. (Avr)	[°C]	-23.2
	Test Time	[h]	6
	Voltage	[Volt]	187
	Frequency	[Hz]	50
	Current	[A]	1.60
	Power	[Watt]	206

Lower starting voltage test at 43°C : 187 Volts

NOTE :



appliances engineering

DD460-43°C-Pull down min-(00000002).dat

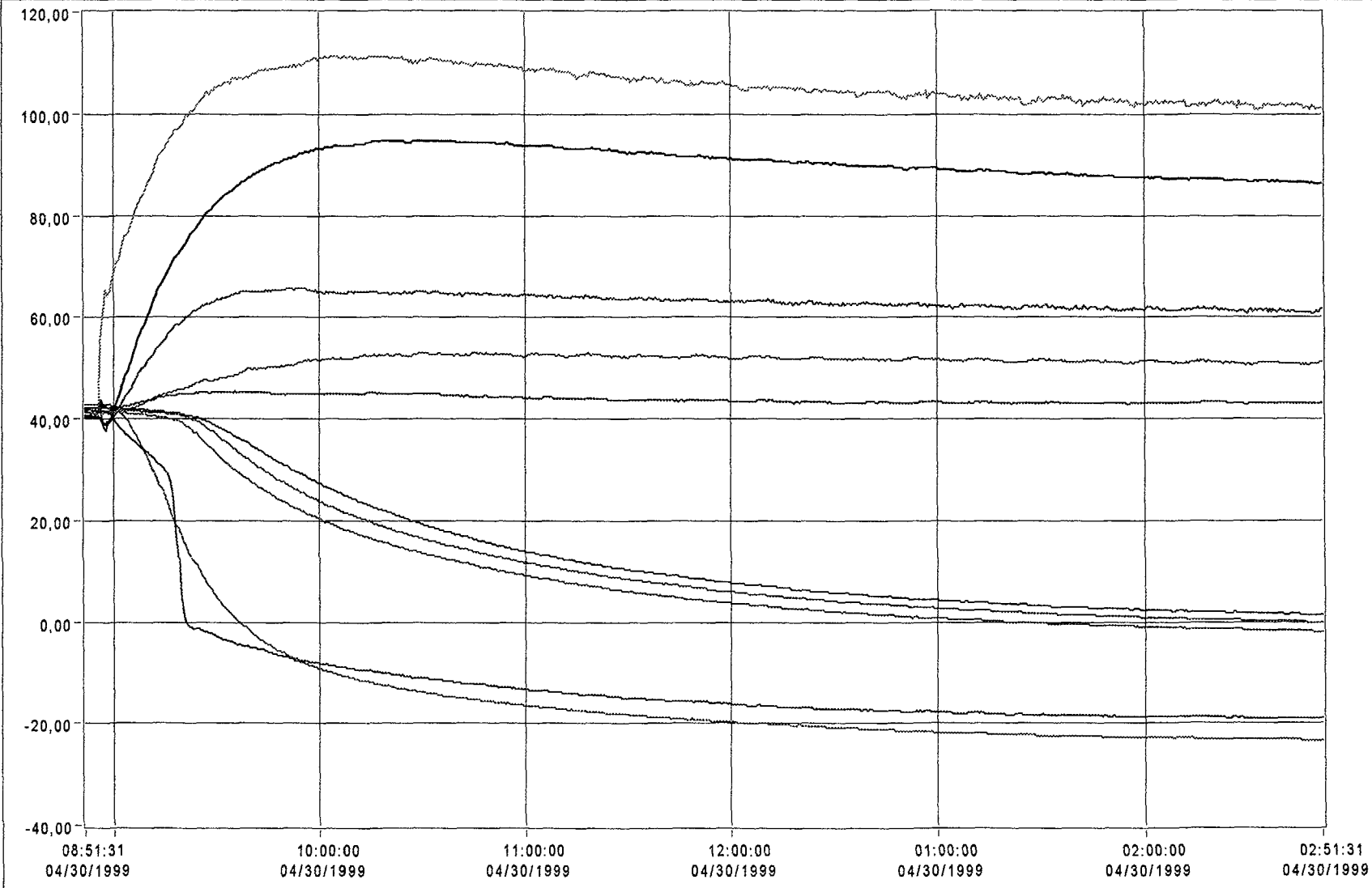
Descrizione DD460-43°C-Pull down min-(00000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 30/04/1999 08.51.31

Fine test: 30/04/1999 14.54.39



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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DD460-43°C-Lowest start. volt. test (00000002).dat

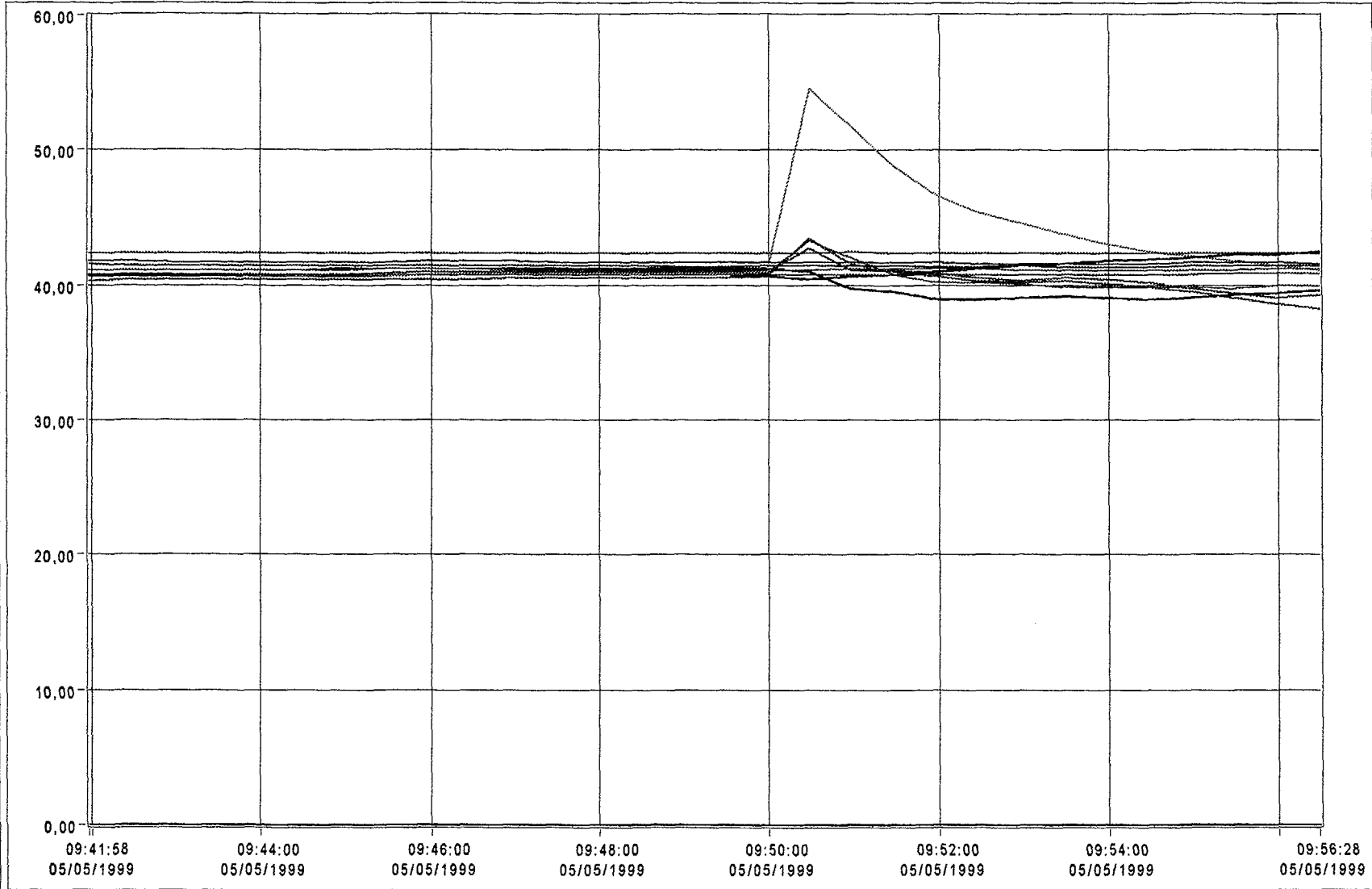
Descrizione DD460-43°C-Lowest start. volt. test (00000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 05/05/1999 09.41.58

Fine test: 05/05/1999 09.56.59



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000002) Class T

TYPE of TEST : ELECTRICAL TEST (low starting voltage)

Date	11/05/99	
Ambient temperature	[°C]	38
Refrigerant R 134a	[gr]	290
Compressor : GL 90 AN		
Condenser : wires and tubes		

			Pull down min	
1	Thermostat bulb temp.	[°C]	-21.4	
2	T 1 refrigerator temp.	[°C]	-1.8	
3	T 2 refrigerator temp.	[°C]	-3.2	
4	T 3 refrigerator temp.	[°C]	-4.9	
5	T 1 freezer temp.	[°C]		
6	T 2 freezer temp.	[°C]	-25.6	
7	T 3 freezer temp.	[°C]		
8	Compressor temp.	[°C]	80.0	
9	Condenser in temp.	[°C]	95.0	
10	Condenser out temp.	[°C]	41.8	
11	Oil cooler in temp.	[°C]	38.7	
12	Oil cooler out temp.	[°C]	57.0	
13	Suction pipe temp.	[°C]	21.0	
	Refrig. temp. (Avr)	[°C]	-3.3	
	Freezer temp. (Avr)	[°C]	-25.6	
	Test Time	[h]	6	
	Voltage	[Volt]	187	
	Frequency	[Hz]	50	
	Current	[A]	1.58	
	Power	[Watt]	198	

Lower starting voltage test at 38°C : 187 Volts

NOTE :



appliances engineering

DD460-38°C-Pull down min (00000002).dat

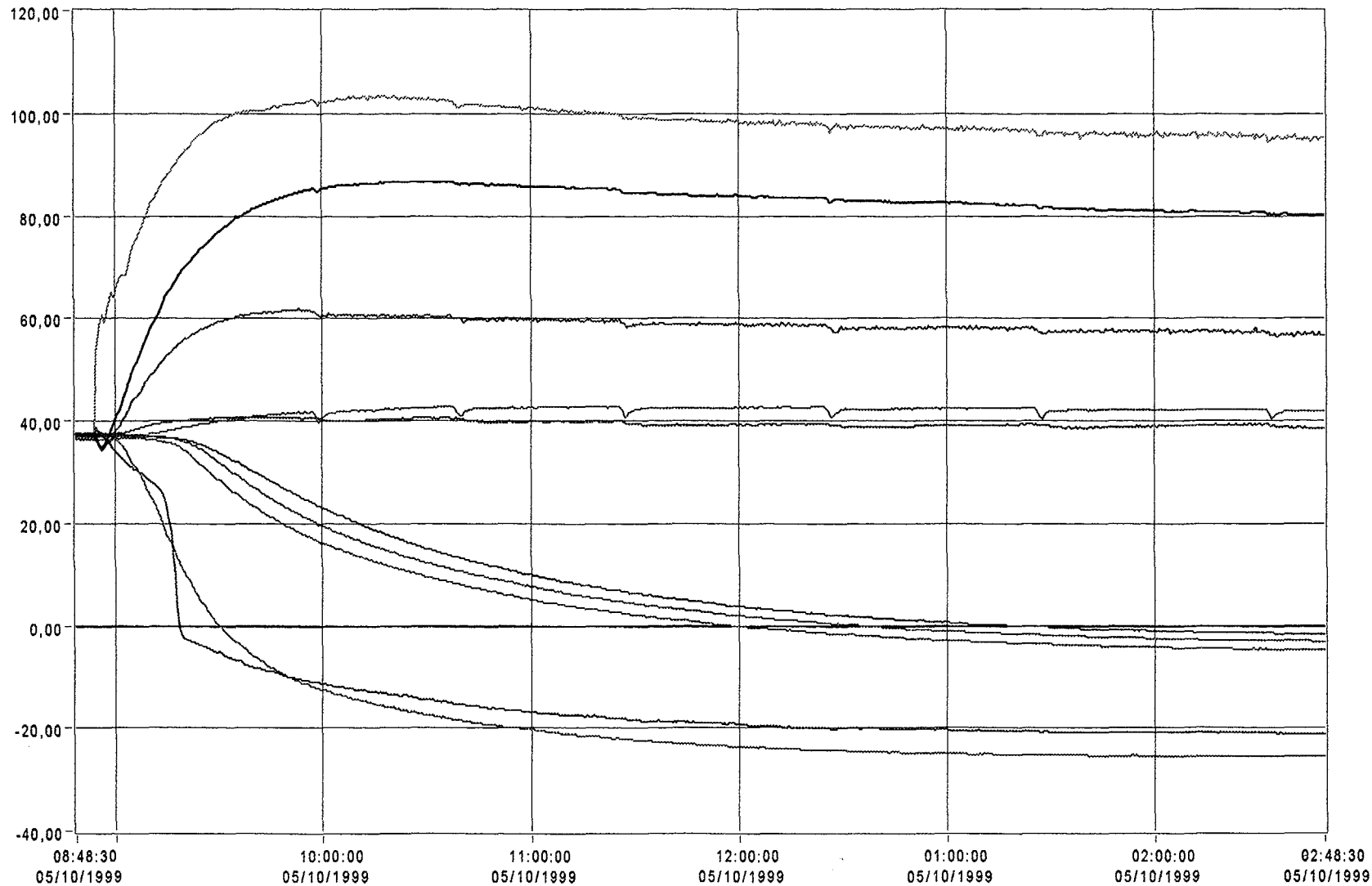
Descrizione DD460-38°C-Pull down min (00000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 10/05/1999 08.48.30

Fine test: 10/05/1999 14.53.36



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe



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DD460-38°C-Lowest start. volt. test (0000002).dat

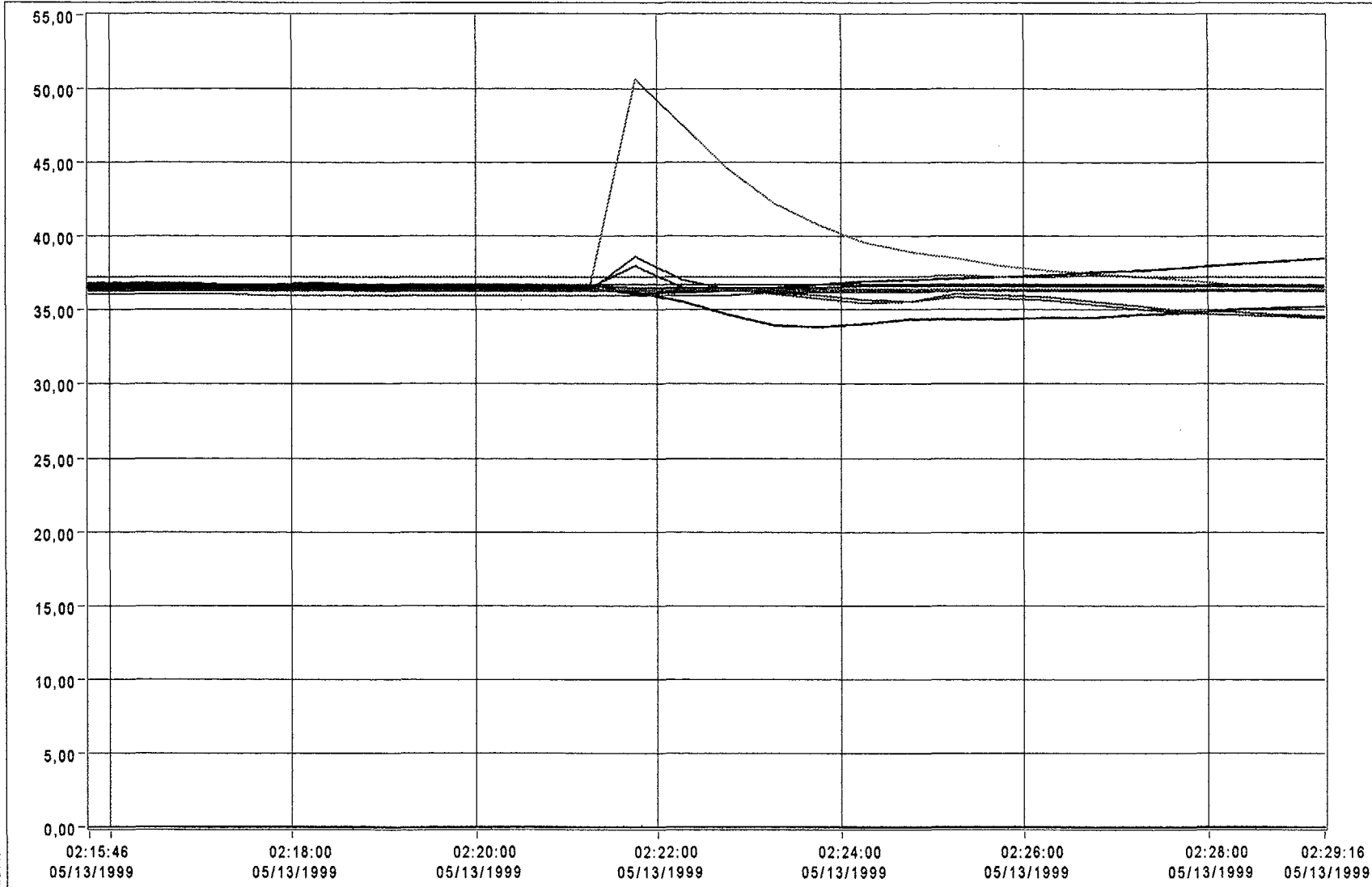
Descrizione DD460-38°C-Lowest start. volt. test (0000002)

ID Posizione: CAMERA 1 POSIZIONE D

Sampling Time: 30

Inizio test: 13/05/1999 14.15.46

Fine test: 13/05/1999 14.29.47



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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22210-6



PERFORMANCES TESTS

MODEL

WHIRLPOOL-NEEASAE

DD460 - N° 00000003

DD460 - N° 00000003 - Class T

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PULL DOWN MIN (187V)	
LOW STARTING VOLTAGE	
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PULL DOWN MIN (187V)	
LOW STARTING VOLTAGE	



WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000003) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	31/05/99		Compressor : GL 90 AN
Ambient temperature	[°C]	43	Condenser : wires and tubes
Refrigerant R 134a	[gr]	290	

Thermostat setting			7 / 7	3 / 7		1 / 7	
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-18.8	+5.0	-17.8	+5.0	-15.6
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+0.1	+8.3	+6.3	+9.7	+8.7
4	T 2 refrigerator temp.	[°C]	-1.1	+7.7	+4.7	+9.0	+7.3
5	T 3 refrigerator temp.	[°C]	-3.3	+6.8	+2.2	+7.9	+4.9
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-22.0	-9.5	-17.4	-9.7	-14.3
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	79.4	66.9	78.2	66.1	75.3
10	Condenser in temp.	[°C]	96.6	41.6	98.1	43.8	96.8
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	57.1	38.6	56.9	37.3	54.9
13	Oil cooler in temp.	[°C]	40.7	40.8	45.4	42.8	48.6
14	Oil cooler out temp.	[°C]	59.7	46.2	59.7	45.8	58.9
15	Suction pipe temp.	[°C]	46.5	44.5	44.3	45.5	39.5
	Refrig. temp. (Avr)	[°C]	-1.4	+6.0		+7.9	
	Freezer temp. (Avr)	[°C]	-22.0	-13.4		-12.0	
	Test Time	[h]	24	24		24	
	Running Time	[%]	100	62.7		54.1	
	Energy consumption	[Kwh/24h]		3.305		2.992	
	Voltage	[Volt]	220	220		220	
	Current	[A]	1.76	2.20	1.83	2.19	1.82
	Power	[Watt]	185	341	201	339	206

NOTE :



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DD460-43°C-Vuoto-Pos4.5(00000003).dat

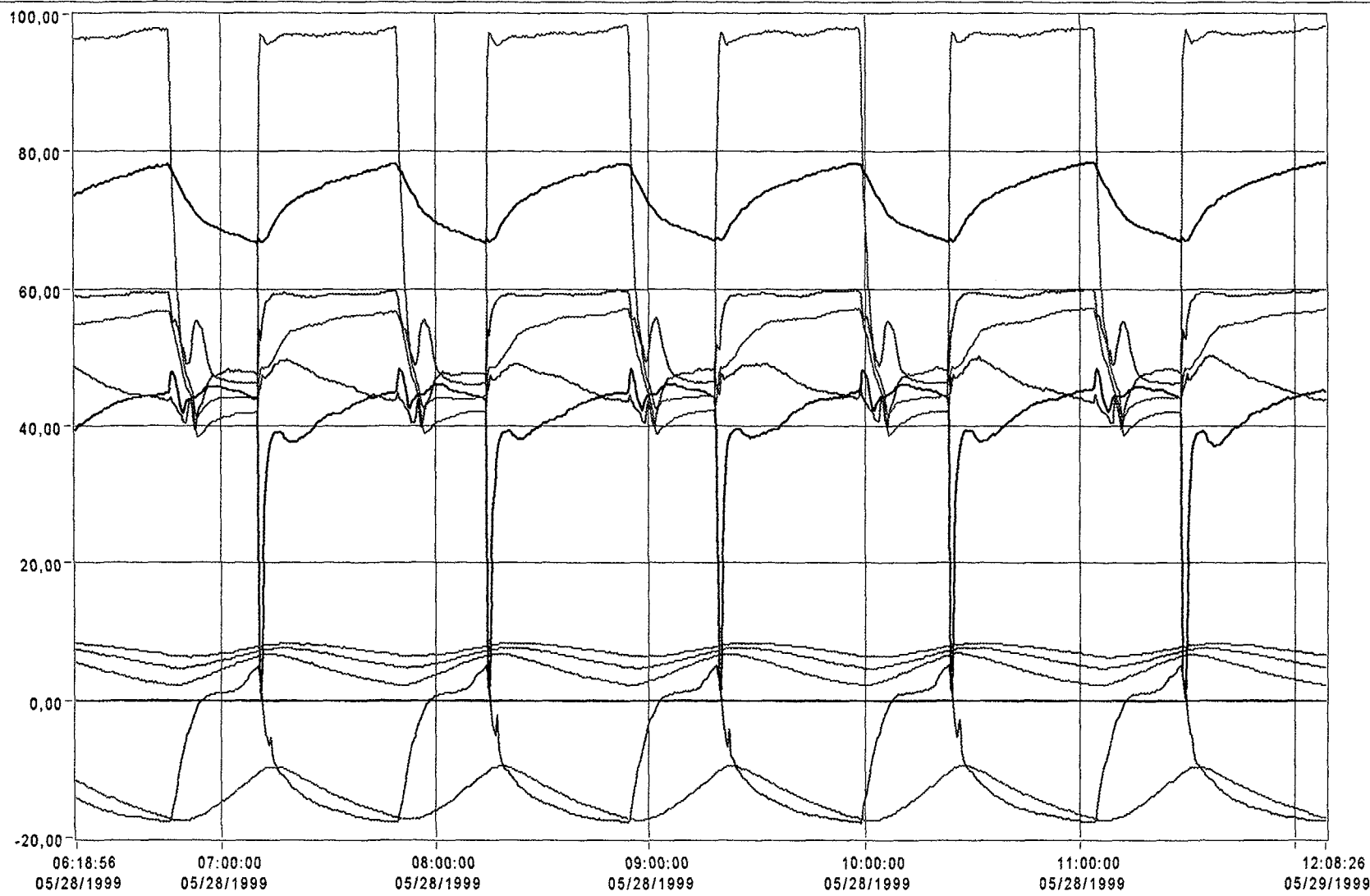
Descrizione DD460-43°C-Thermostat control-Pos4.5(00000003)

ID Posizione: CAMERA 2 POSIZIONE D

Sampling Time: 30

Inizio test: 28/05/1999 18.18.56

Fine test: 29/05/1999 08.14.11



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DD460-43°C-Vuoto-Pos3.5(00000003).dat

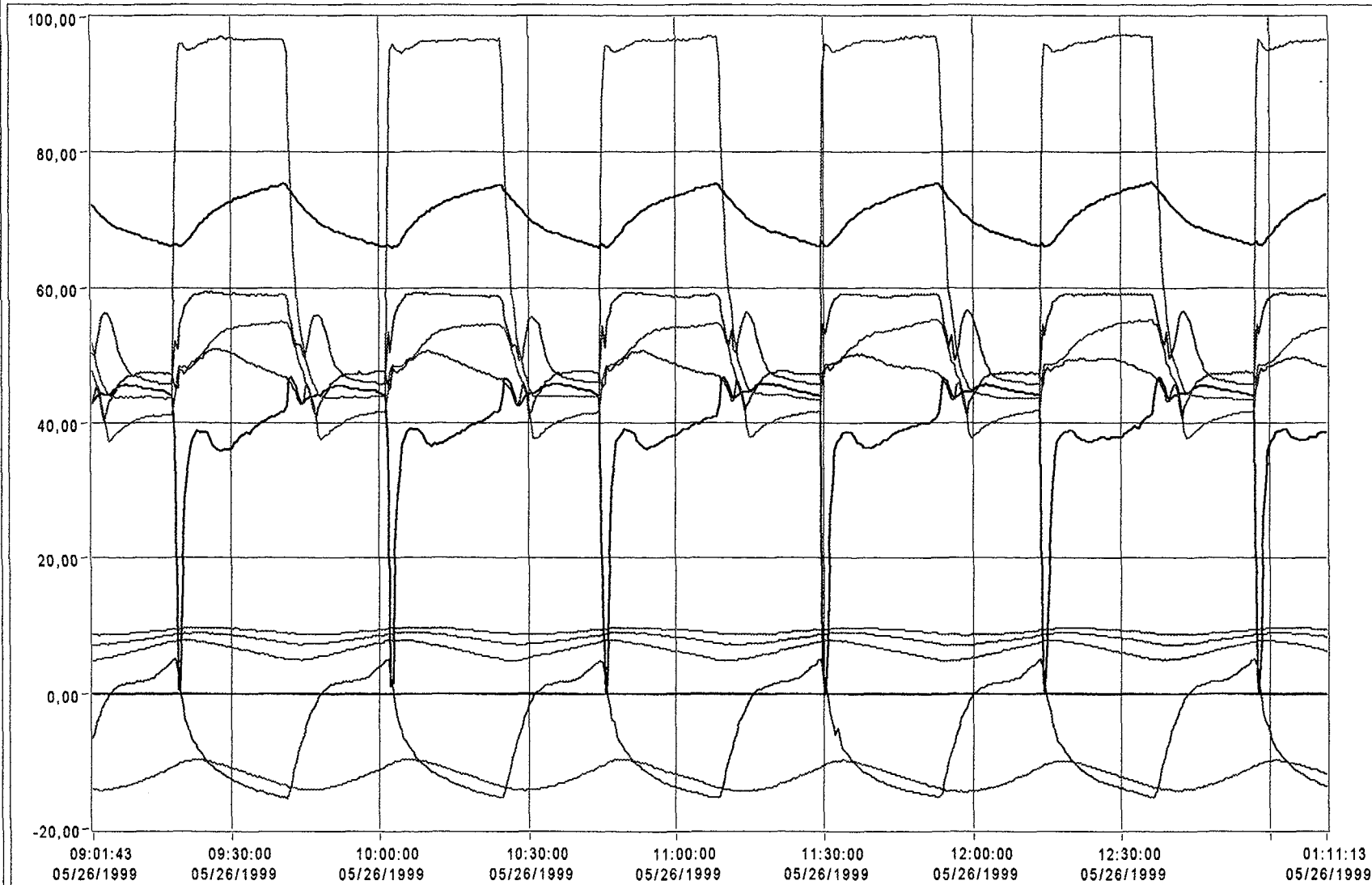
Descrizione DD460-43°C-Thermostat control-Pos3.5(00000003)

ID Posizione: CAMERA 2 POSIZIONE D

Sampling Time: 30

Inizio test: 26/05/1999 09.01.43

Fine test: 27/05/1999 08.39.08



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000003) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	03/06/99	Compressor : GL 90 AN
Ambient temperature	[°C] 38	Condenser : wires and tubes
Refrigerant R 134a	[gr] 290	

Thermostat setting			7 / 7	5.5 / 7		4.5 / 7	
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-21.9	+5.0	-20.3	+4.9	-17.9
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	-1.5	+6.5	+3.4	+8.1	+6.8
4	T 2 refrigerator temp.	[°C]	-2.8	+6.0	+1.6	+7.5	+5.3
5	T 3 refrigerator temp.	[°C]	-4.8	+5.4	-0.7	+6.6	+2.9
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-23.9	-8.9	-20.5	-9.8	-15.9
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	75.2	59.8	73.1	60.3	70.8
10	Condenser in temp.	[°C]	90.6	39.0	90.1	39.5	88.7
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	54.0	37.8	52.3	37.7	50.6
13	Oil cooler in temp.	[°C]	36.4	42.6	37.5	43.2	41.1
14	Oil cooler out temp.	[°C]	56.0	40.9	55.2	41.4	54.6
15	Suction pipe temp.	[°C]	44.1	39.1	42.4	40.0	39.8
	Refrig. temp. (Avr)	[°C]	-3.0	+3.7		+6.2	
	Freezer temp. (Avr)	[°C]	-23.9	-14.7		-12.8	
	Test Time	[h]	24	24		24	
	Running Time	[%]	100	57.7		48.6	
	Energy consumption	[Kwh/24h]		2.852		2.581	
	Voltage	[Volt]	220	220		220	
	Current	[A]	1.77	2.16	1.79	2.16	1.83
	Power	[Watt]	177	334	185	324	216

NOTE :



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DD460-38°C-Vuoto-Pos5.5(00000003).dat

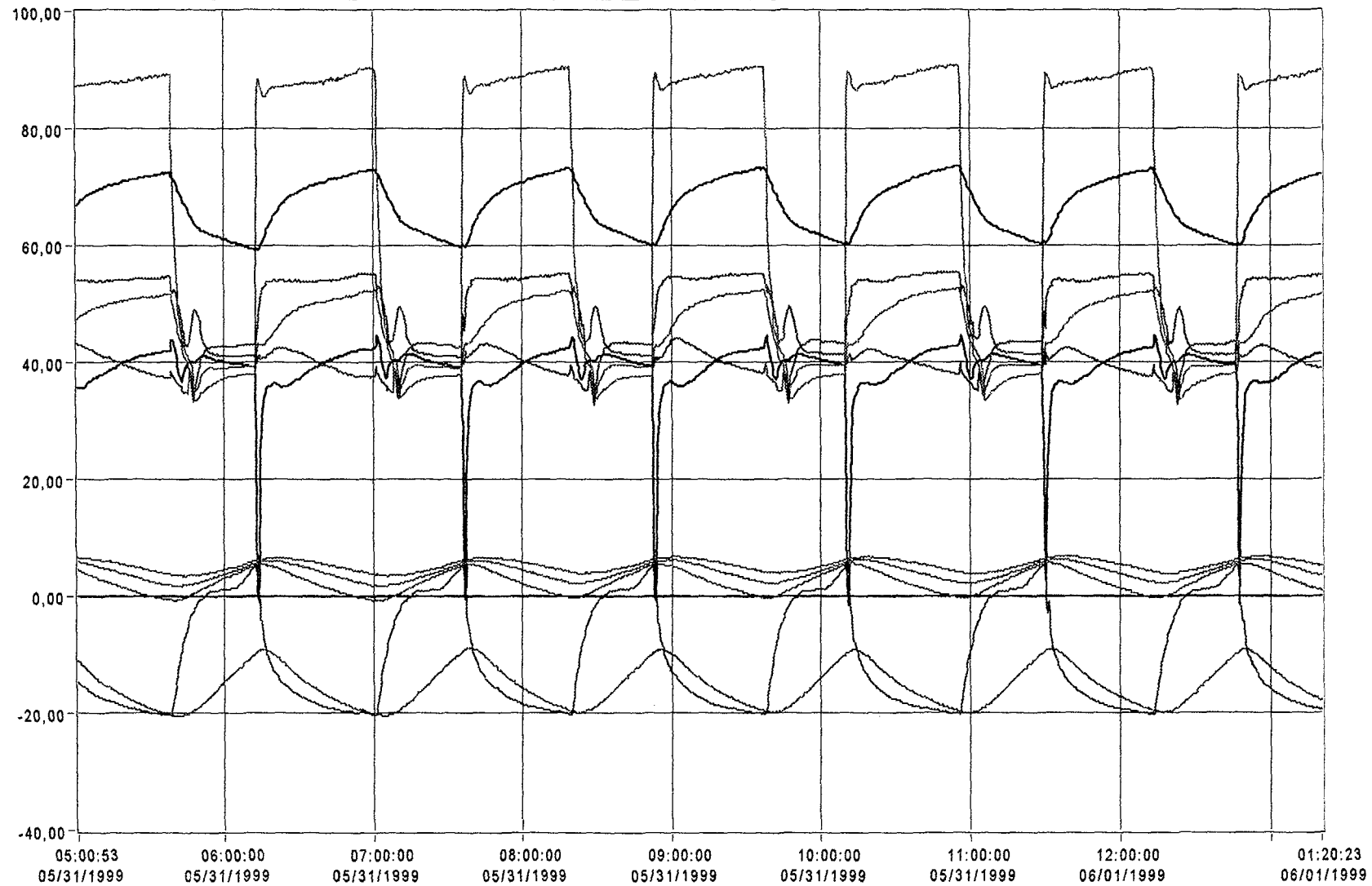
Descrizione DD460-38°C-Thermostat control-Pos5.5(00000003)

ID Posizione: CAMERA 2 POSIZIONE D

Sampling Time: 30

Inizio test: 31/05/1999 17.00.53

Fine test: 01/06/1999 08.46.10



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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DD460-38°C-Vuoto-Pos4.5(00000003).dat

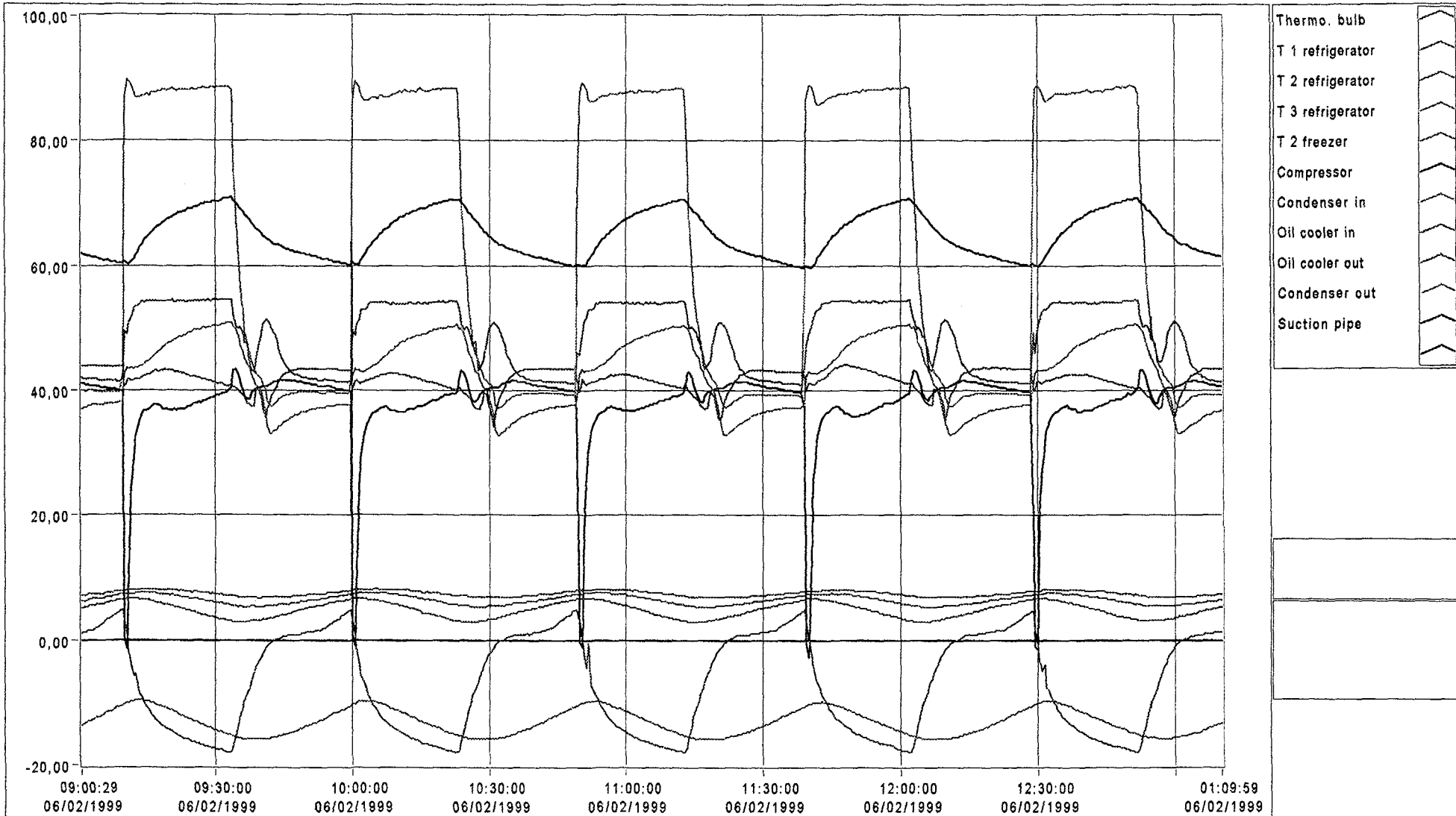
Descrizione DD460-38°C-Thermostat control-Pos4.5(00000003)

ID Posizione: CAMERA 2 POSIZIONE D

Sampling Time: 30

Inizio test: 02/06/1999 09.00.29

Fine test: 03/06/1999 08.45.58



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WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000003) Class T

TYPE of TEST : LOADLESS RUNNING

Date	04/06/99		Compressor : GL 90 AN
Ambient temperature	[°C]	32	Condenser : wires and tubes
Refrigerant R 134a	[gr]	290	

Thermostat setting		CC					
T.C.				ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	-24.3				
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	-3.6				
4	T 2 refrigerator temp.	[°C]	-4.8				
5	T 3 refrigerator temp.	[°C]	-6.6				
6	T 1 freezer temp.	[°C]					
7	T 2 freezer temp.	[°C]	-27.8				
8	T 3 freezer temp.	[°C]					
9	Compressor temp.	[°C]	70.0				
10	Condenser in temp.	[°C]	82.7				
11	Condenser m.p. temp.	[°C]					
12	Condenser out temp.	[°C]	48.5				
13	Oil cooler in temp.	[°C]	30.7				
14	Oil cooler out temp.	[°C]	50.5				
15	Suction pipe temp.	[°C]	39.4				
	Refrig. temp. (Avr)	[°C]	-5.0				
	Freezer temp. (Avr)	[°C]	-27.8				
	Test Time	[h]	24				
	Running Time	[%]	100				
	Energy consumption	[Kwh/24h]					
	Voltage	[Volt]	220				
	Current	[A]	1.76				
	Power	[Watt]	166				

NOTE :



WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000003) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	14/06/99	Compressor : GL 90 AN
Ambient temperature	[°C] 25	Condenser : wires and tubes
Refrigerant R 134a	[gr] 290	

T.C.	Thermostat setting		6 / 7		5 / 7		ON	OFF
			ON	OFF	ON	OFF		
1	Thermostat bulb temp.	[°C]	+4.7	-21.4	+4.7	-19.1		
2	Damper bulb temp.	[°C]						
3	T 1 refrigerator temp.	[°C]	+5.9	+3.4	+6.6	+5.5		
4	T 2 refrigerator temp.	[°C]	+5.7	+1.9	+6.3	+4.5		
5	T 3 refrigerator temp.	[°C]	+5.4	-0.4	+5.7	+2.5		
6	T 1 freezer temp.	[°C]						
7	T 2 freezer temp.	[°C]	-9.1	-19.3	-9.5	-15.4		
8	T 3 freezer temp.	[°C]						
9	Compressor temp.	[°C]	42.8	57.5	42.3	52.2		
10	Condenser in temp.	[°C]	26.6	70.4	26.4	70.7		
11	Condenser m.p. temp.	[°C]						
12	Condenser out temp.	[°C]	26.8	34.8	26.6	31.0		
13	Oil cooler in temp.	[°C]	30.1	27.1	30.2	28.5		
14	Oil cooler out temp.	[°C]	28.5	41.4	28.5	41.1		
15	Suction pipe temp.	[°C]	27.6	28.2	27.7	25.9		
	Refrig. temp. (Avr)	[°C]	+3.6		+5.2			
	Freezer temp. (Avr)	[°C]	-14.2		-12.4			
	Test Time	[h]	24		24			
	Running Time	[%]	32.2		28			
	Energy consumption	[Kwh/24h]	1.565		1.418			
	Voltage	[Volt]	220		220			
	Current	[A]	2.10	1.78	2.06	1.82		
	Power	[Watt]	310	180	299	188		

NOTE :



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DD460-25°C-Vuoto-Pos6(00000003).dat

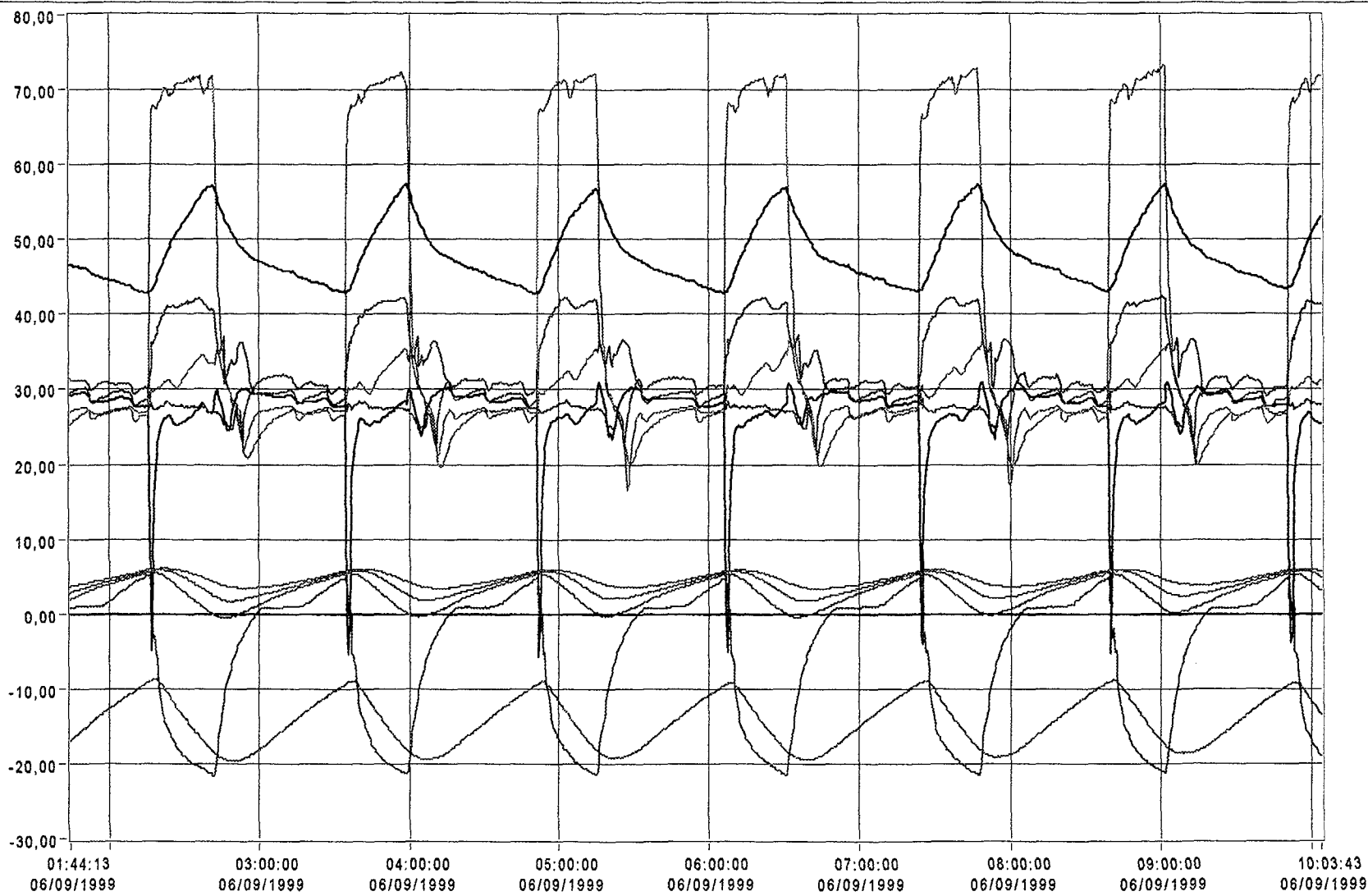
Descrizione DD460-25°C-Thermostat control-Pos6(00000003)

ID Posizione: CAMERA 2 POSIZIONE D

Sampling Time: 30

Inizio test: 09/06/1999 13.44.13

Fine test: 10/06/1999 08.45.04



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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DD460-25°C-Vuoto-Pos5(00000003).dat

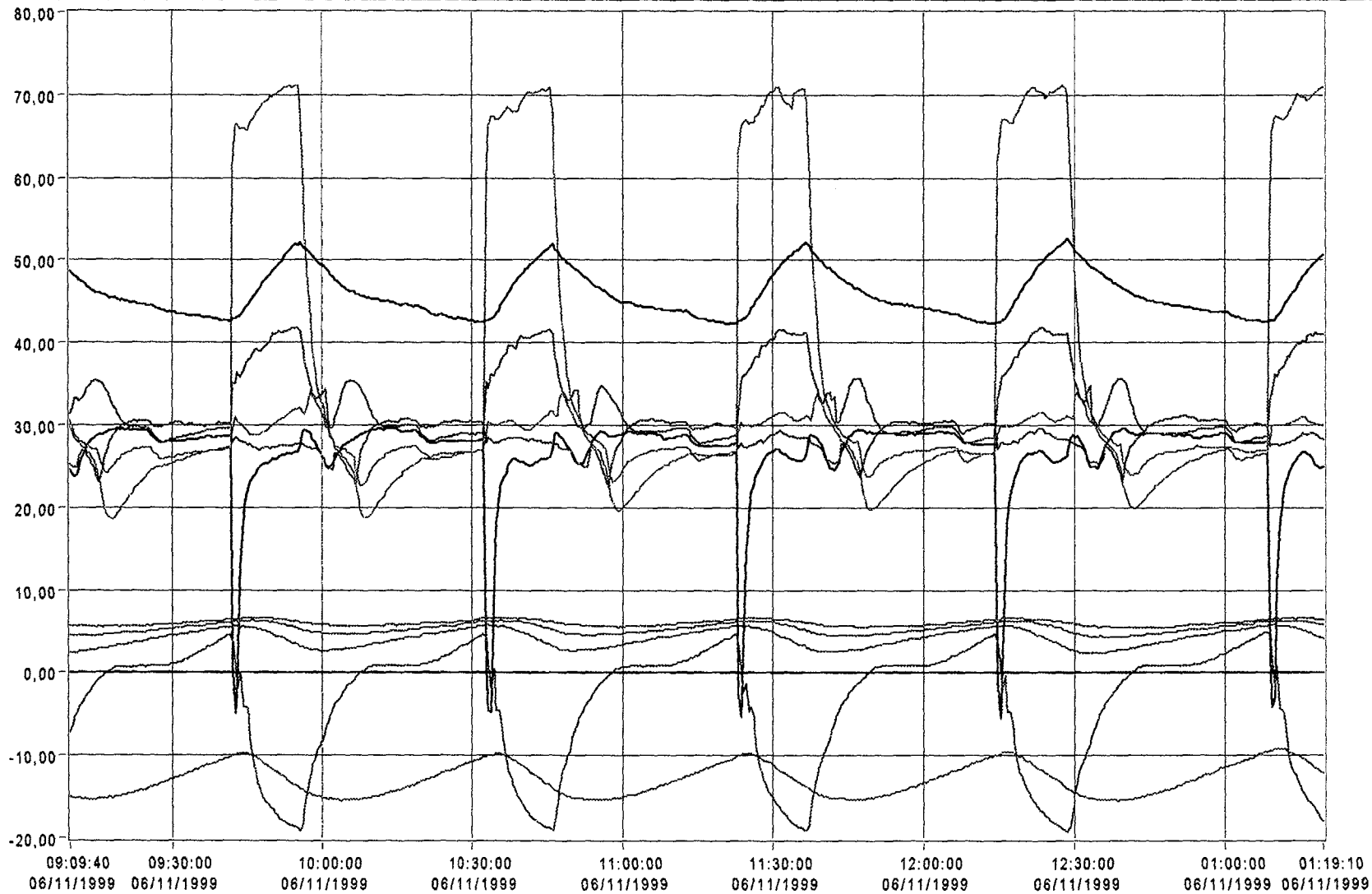
Descrizione DD460-25°C-Thermostat control-Pos5(00000003)

ID Posizione: CAMERA 2 POSIZIONE D

Sampling Time: 30

Inizio test: 11/06/1999 09.09.40

Fine test: 11/06/1999 17.29.48



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

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WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000003) Class T

TYPE of TEST : THERMOSTAT CONTROL

Date	16/06/99	Compressor : GL 90 AN
Ambient temperature	[°C] 18	Condenser : wires and tubes
Refrigerant R 134a	[gr] 290	

Thermostat setting		6 / 7		4 / 7			
T.C.		ON	OFF	ON	OFF	ON	OFF
1	Thermostat bulb temp. [°C]	+4.8	-21.6	+5.0	-16.7		
2	Damper bulb temp. [°C]						
3	T 1 refrigerator temp. [°C]	+5.9	+4.2	+7.2	+7.0		
4	T 2 refrigerator temp. [°C]	+5.8	+3.3	+7.0	+6.6		
5	T 3 refrigerator temp. [°C]	+5.5	+1.3	+6.5	+5.5		
6	T 1 freezer temp. [°C]						
7	T 2 freezer temp. [°C]	-9.3	-19.9	-12.2	-15.4		
8	T 3 freezer temp. [°C]						
9	Compressor temp. [°C]	32.7	45.5	31.3	36.8		
10	Condenser in temp. [°C]	19.6	60.5	19.1	51.7		
11	Condenser m.p. temp. [°C]						
12	Condenser out temp. [°C]	20.6	23.2	18.3	21.8		
13	Oil cooler in temp. [°C]	21.3	19.6	21.8	19.7		
14	Oil cooler out temp. [°C]	20.7	34.2	20.6	31.8		
15	Suction pipe temp. [°C]	20.2	19.0	20.3	18.6		
	Refrig. temp. (Avr) [°C]	+4.3		+6.6			
	Freezer temp. (Avr) [°C]	-14.6		-13.8			
	Test Time [h]	24		24			
	Running Time [%]	22.9		20.3			
	Energy consumption [Kwh/24h]	1.089		1.014			
	Voltage [Volt]	220		220			
	Current [A]	2.08	1.81	2.10	1.81		
	Power [Watt]	298	178	300	186		

NOTE :



appliances engineering

DD460-18°C-Vuoto-Pos6(00000003).dat

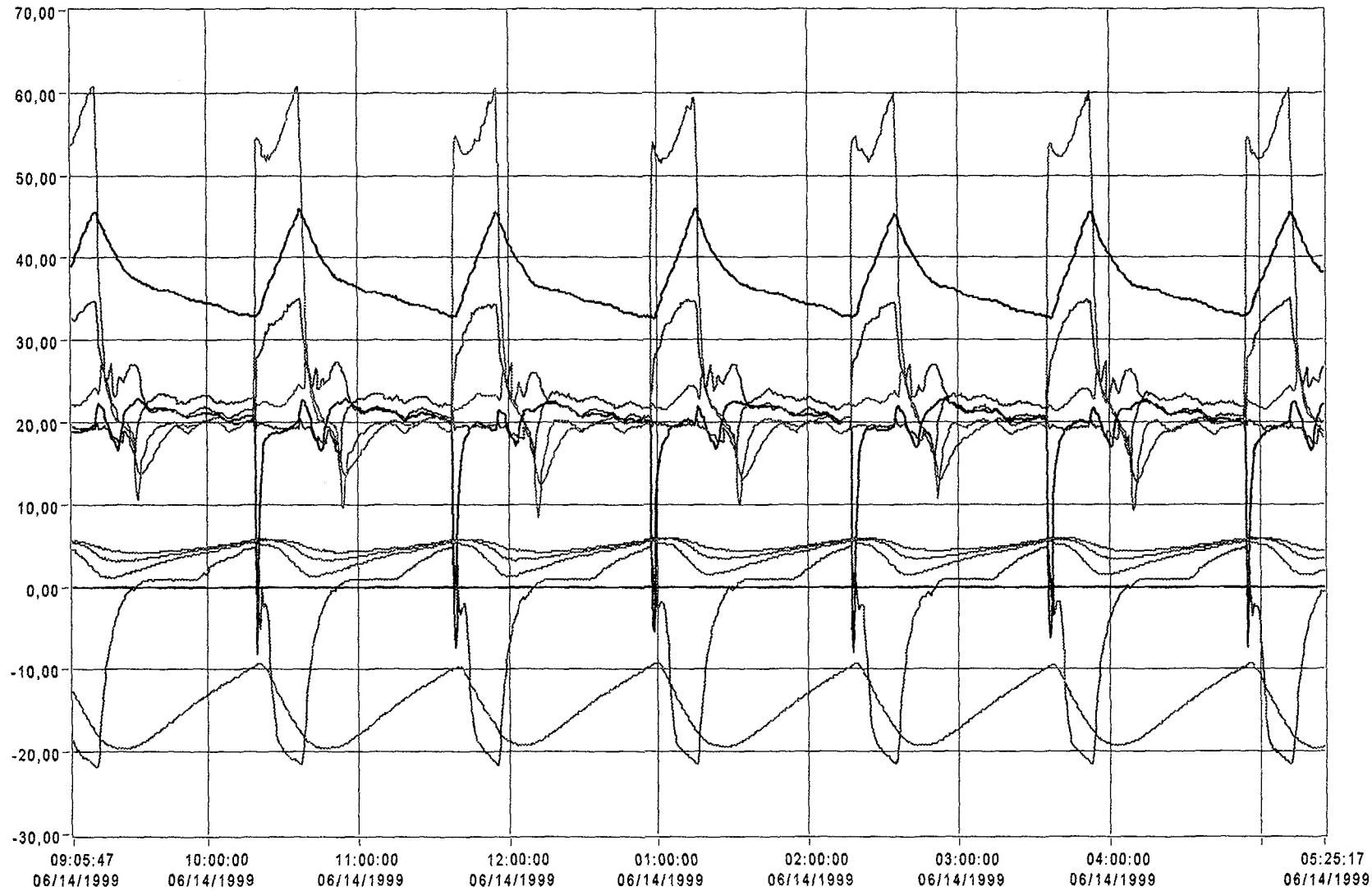
Descrizione DD460-18°C-Thermostat control-Pos6(00000003)

ID Posizione: CAMERA 2 POSIZIONE D

Sampling Time: 30

Inizio test: 14/06/1999 09.05.47

Fine test: 15/06/1999 08.33.15



Hardware & Software by CA.GI.



appliances engineering

DD460-18°C-Vuoto-Pos4(00000003).dat

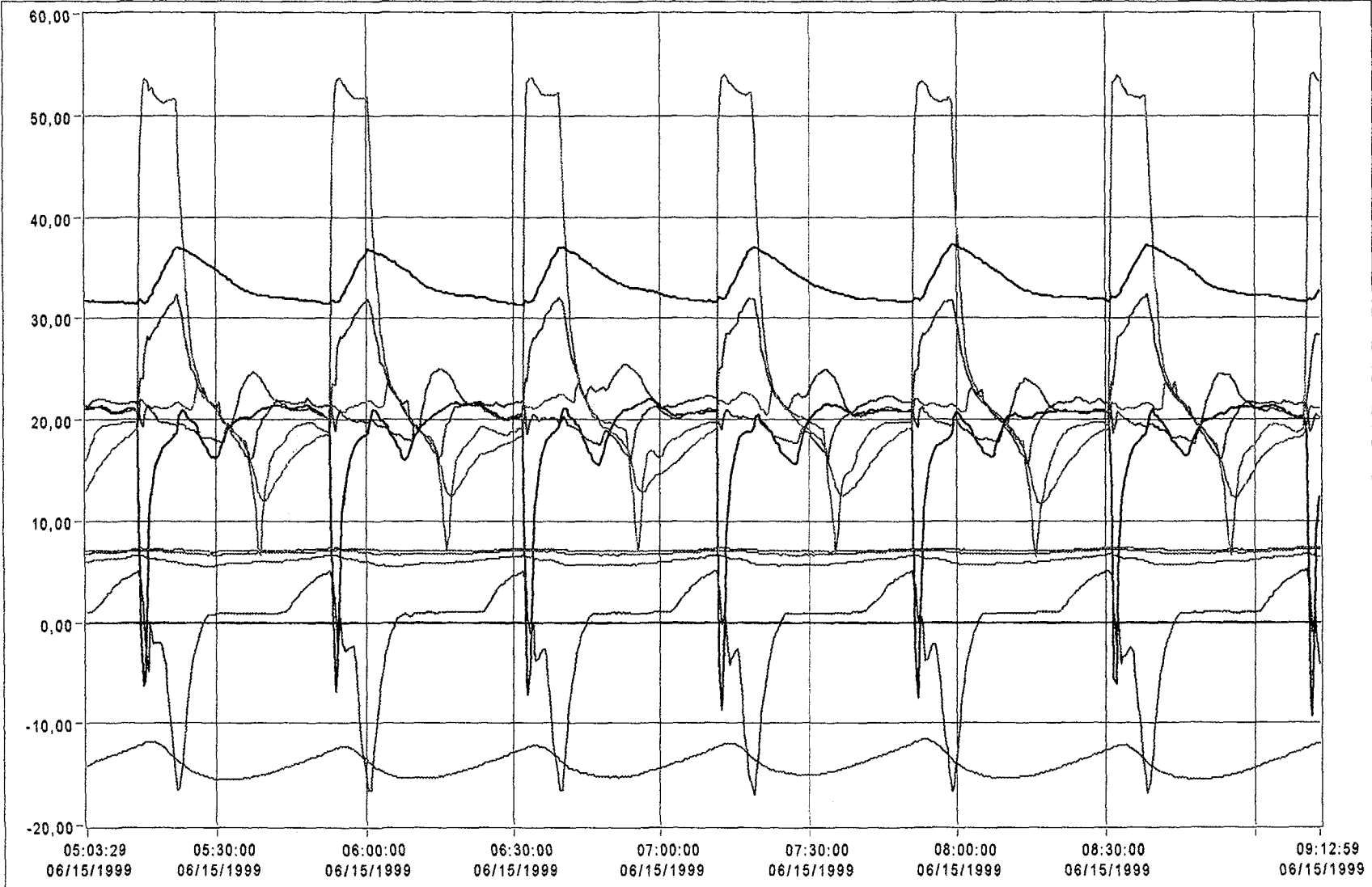
Descrizione DD460-18°C-Thermostat control-Pos4(00000003)

ID Posizione: CAMERA 2 POSIZIONE D

Sampling Time: 30

Inizio test: 15/06/1999 17.03.29

Fine test: 16/06/1999 08.39.50



- Thermo. bulb
- T 1 refrigerator
- T 2 refrigerator
- T 3 refrigerator
- T 2 freezer
- Compressor
- Condenser in
- Oil cooler in
- Oil cooler out
- Condenser out
- Suction pipe

Hardware & Software by CA.GI.



WHIRLPOOL EUROPE

CABINET MODEL :	DD 460 (N°00000003) Class T
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TYPE of TEST :	PULL DOWN
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Date	22/0/1999	Compressor : GL 90 AN
Refrigerant R 134a	[gr] 290	Condenser : wires and tubes

	Ambient temperature	[°C]	43	38	
	Thermostat setting		CC	CC	
T.C.					
1	Thermostat bulb temp.	[°C]	-18.5	-21.4	
2	Damper bulb temp.	[°C]			
3	T 1 refrigerator temp.	[°C]	+1.8	-0.6	
4	T 2 refrigerator temp.	[°C]	-0.7	-1.6	
5	T 3 refrigerator temp.	[°C]	-2.8	-3.7	
6	T 1 freezer temp.	[°C]			
7	T 2 freezer temp.	[°C]	-22.0	-23.5	
8	T 3 freezer temp.	[°C]			
9	Compressor temp.	[°C]	80.0	75.1	
10	Condenser in temp.	[°C]	96.8	90.4	
11	Condenser m.p. temp.	[°C]			
12	Condenser out temp.	[°C]	57.1	52.4	
13	Oil cooler in temp.	[°C]	40.9	36.5	
14	Oil cooler out temp.	[°C]	59.8	56.4	
15	Suction pipe temp.	[°C]	46.5	43.9	
	Refrig. temp. (Avr)	[°C]	-0.6	-2.0	
	Freezer temp. (Avr)	[°C]	-22.0	-23.5	
	Test Time	[h]	6	6	
	Running Time	[%]	100	100	
	Energy consumption	[Kwh/24h]			
	Voltage	[Volt]	220	220	
	Current	[A]	1.81	1.75	
	Power	[Watt]	192	176	

NOTE :



WHIRLPOOL EUROPE

CABINET MODEL : **DD 460 (N°00000003) Class T**

TYPE of TEST : **STORAGE TEST**

Date	18/06/99		Compressor : GL 90 AN	
Storage load	[Kg]	45	Condenser : wires and tubes	
Refrigerant R 134a	[gr]	290		

Ambient temperature		[°C]	43		38		18	
Thermostat setting			3 / 7		4.5 / 7		6 / 7	
T.C.			ON	OFF	ON	OFF	ON	OFF
1	Thermostat bulb temp.	[°C]	+4.0	-17.7	+4.1	-19.8	+4.7	-21.4
2	Damper bulb temp.	[°C]						
3	T 1 refrigerator temp.	[°C]	+6.5	+4.4	+6.2	+3.2	+5.8	+3.2
4	T 2 refrigerator temp.	[°C]	+5.9	+2.6	+5.8	+2.2	+5.6	+1.8
5	T 3 refrigerator temp.	[°C]	+5.0	+0.5	+5.1	-1.0	+5.3	-0.5
6	T package 1	[°C]	-16.9	-18.0	-18.3	-20.0	-16.3	-21.2
7	T package 2	[°C]	-14.9	-15.7	-16.5	-17.7	-15.7	-19.4
8	T package 3	[°C]	-19.2	-19.4	-20.8	-21.2	-20.0	-21.5
9	T package 4	[°C]	-18.5	-18.7	-20.0	-20.2	-19.8	-20.9
10	T package 5	[°C]						
11	T package 6	[°C]						
12	Compressor temp.	[°C]	75.5	91.2	59.5	74.2	43.4	58.2
13	Condenser in temp.	[°C]	44.3	106.1	39.3	91.4	26.8	71.2
14	Condenser out temp.	[°C]	42.1	52.7	38.0	47.3	26.6	34.9
15	Suction pipe temp.	[°C]	42.3	33.8	37.4	27.0	27.5	28.3
	Refrig. temp. (Avr)	[°C]	+4.1		+3.6		+3.5	
	Warmer package	[°C]	-14.9		-16.5		-15.7	
	Average of packages	[°C]	-17.7		-19.3		-19.3	
	Test Time	[h]	24		24		24	
	Running Time	[%]	75.2		63.4		32.2	
	Energy consumption	[Kwh/24h]	4.205		3.535		1.558	
	Voltage	[Volt]	220		220		220	
	Current	[A]	2.23	1.91	2.25	1.90	2.11	1.79
	Power	[Watt]	355	238	348	224	312	183

NOTE :



WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000003) Class T

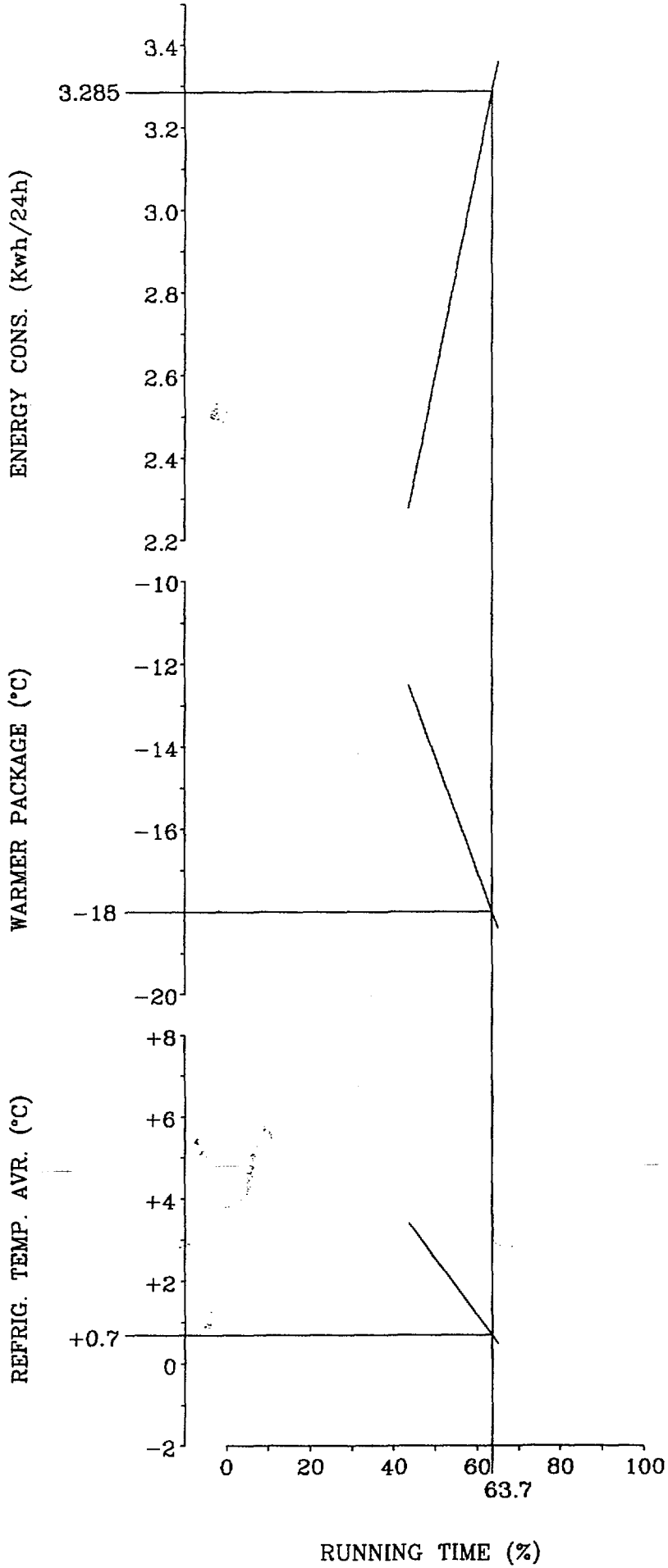
TYPE of TEST : ENERGY CONSUMPTION

Date	21/06/99		Compressor : GL 90 AN	
Ambient temperature	[°C]	32	Condenser : wires and tubes	
Storage load	[Kg]	45		
Refrigerant R 134a	[gr]	290		

Thermostat setting		5 / 7		4 / 7		
T.C.		ON	OFF	ON	OFF	
1	Thermostat bulb temp. [°C]	+3.7	-20.2	+3.6	-19.5	
2	Damper bulb temp. [°C]					
3	T 1 refrigerator temp. [°C]	+5.8	-3.1	+5.8	+3.4	
4	T 2 refrigerator temp. [°C]	+5.4	-4.2	+5.4	+1.8	
5	T 3 refrigerator temp. [°C]	+5.2	-5.8	+4.7	-0.7	
6	T package 1 [°C]	-19.5	-23.1	-14.8	-16.0	
7	T package 2 [°C]	-18.4	-21.1	-12.5	-13.2	
8	T package 3 [°C]	-23.3	-24.0	-17.6	-17.9	
9	T package 4 [°C]	-22.5	-23.3	-17.1	-17.3	
10	T package 5 [°C]					
11	T package 6 [°C]					
12	Compressor temp. [°C]	54.3	79.8	58.0	74.7	
13	Condenser in temp. [°C]	34.1	94.2	33.1	91.0	
14	Condenser out temp. [°C]	33.4	42.0	32.0	39.6	
15	Suction pipe temp. [°C]	32.0	26.9	31.9	27.5	Interpolated
						at -18 [°C]
	Refrig. temp. (Avr) [°C]	+0.5		+3.4		+0.7
	Warmer package [°C]	-18.4		-12.5		-18.0
	Average of packages [°C]	-21.9		-15.8		
	Test Time [h]	24		24		
	Running Time [%]	65.1		43.8		63.7
	Energy consumption [Kwh/24h]	3.358		2.278		3.285
	Voltage [Volt]	220		220		
	Current [A]	2.22	1.85	1.99	1.87	
	Power [Watt]	320	207	263	189	

NOTE :

ENERGY CONSUMPTION (with load) AT 32°C





WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000003) Class T

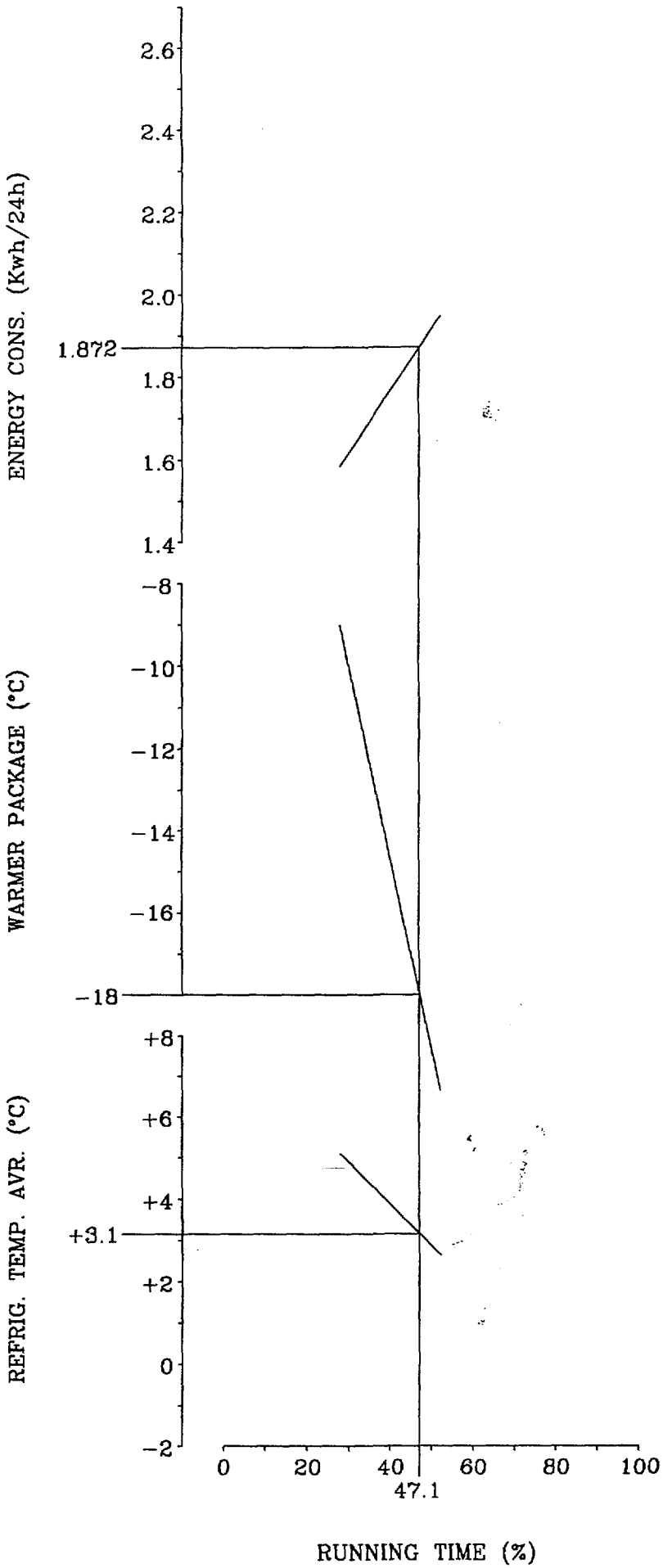
TYPE of TEST : ENERGY CONSUMPTION

Date	21/06/99		Compressor : GL 90 AN
Ambient temperature	[°C]	25	Condenser : wires and tubes
Storage load	[Kg]	45	
Refrigerant R 134a	[gr]	290	

T.C.	Thermostat setting		6 / 7		5 / 7		
			ON	OFF	ON	OFF	
1	Thermostat bulb temp.	[°C]	+4.7	-21.4	+4.7	-19.1	
2	Damper bulb temp.	[°C]					
3	T 1 refrigerator temp.	[°C]	+5.8	+3.2	+6.4	+5.3	
4	T 2 refrigerator temp.	[°C]	+5.6	+1.7	+6.2	+4.5	
5	T 3 refrigerator temp.	[°C]	+5.1	-0.6	+5.5	+2.5	
6	T package 1	[°C]	-18.2	-23.6	-11.5	-11.7	
7	T package 2	[°C]	-17.3	-22.4	-9.0	-9.1	
8	T package 3	[°C]	-22.3	-23.9	-14.2	-14.3	
9	T package 4	[°C]	-22.1	-23.2	-13.8	-13.9	
10	T package 5	[°C]					
11	T package 6	[°C]					
12	Compressor temp.	[°C]	43.0	57.8	42.5	52.7	
13	Condenser in temp.	[°C]	26.8	70.8	26.5	71.2	
14	Condenser out temp.	[°C]	26.9	34.9	26.7	31.0	
15	Suction pipe temp.	[°C]	27.5	28.3	27.8	26.0	Extrapolated
							at -18[°C]
	Refrig. temp. (Avr)	[°C]	+3.3		+5.1		+3.1
	Warmer package	[°C]	-17.3		-9.0		-18.0
	Average of packages	[°C]	-18.8		-12.2		
	Test Time	[h]	24		24		
	Running Time	[%]	45.6		28		47.1
	Energy consumption	[Kwh/24h]	1.850		1.585		1.872
	Voltage	[Volt]	220		220		
	Current	[A]	2.12	1.80	2.05	1.88	
	Power	[Watt]	310	183	300	180	

NOTE :

ENERGY CONSUMPTION (with load) AT 25°C





WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000003) Class T

TYPE of TEST : ELECTRICAL TEST (low starting voltage)

Date	23/06/99	
Ambient temperature	[°C]	43
Refrigerant R 134a	[gr]	290
Compressor : GL 90 AN		
Condenser : wires and tubes		

		Pull down min	
1	Thermostat bulb temp.	[°C]	-18.7
2	T 1 refrigerator temp.	[°C]	+1.7
3	T 2 refrigerator temp.	[°C]	-0.6
4	T 3 refrigerator temp.	[°C]	-2.7
5	T 1 freezer temp.	[°C]	
6	T 2 freezer temp.	[°C]	-21.6
7	T 3 freezer temp.	[°C]	
8	Compressor temp.	[°C]	80.2
9	Condenser in temp.	[°C]	95.8
10	Condenser out temp.	[°C]	56.3
11	Oil cooler in temp.	[°C]	40.4
12	Oil cooler out temp.	[°C]	58.9
13	Suction pipe temp.	[°C]	41.4
Refrig. temp. (Avr)		[°C]	-0.5
Freezer temp. (Avr)		[°C]	-21.6
Test Time		[h]	6
Voltage		[Volt]	187
Frequency		[Hz]	50
Current		[A]	1.68
Power		[Watt]	185

Lower starting voltage test at 43°C : 187 Volts

NOTE :



WHIRLPOOL EUROPE

CABINET MODEL : DD 460 (N°00000003) Class T

TYPE of TEST : ELECTRICAL TEST (low starting voltage)

Date	24/06/99	
Ambient temperature	[°C]	38
Refrigerant R 134a	[gr]	290
Compressor : GL 90 AN		
Condenser : wires and tubes		

			Pull down min	
1	Thermostat bulb temp.	[°C]	-21.7	
2	T 1 refrigerator temp.	[°C]	-1.0	
3	T 2 refrigerator temp.	[°C]	-1.9	
4	T 3 refrigerator temp.	[°C]	-3.2	
5	T 1 freezer temp.	[°C]		
6	T 2 freezer temp.	[°C]	-22.6	
7	T 3 freezer temp.	[°C]		
8	Compressor temp.	[°C]	79.4	
9	Condenser in temp.	[°C]	95.6	
10	Condenser out temp.	[°C]	50.2	
11	Oil cooler in temp.	[°C]	36.6	
12	Oil cooler out temp.	[°C]	56.1	
13	Suction pipe temp.	[°C]	43.5	
	Refrig. temp. (Avr)	[°C]	-2.0	
	Freezer temp. (Avr)	[°C]	-22.6	
	Test Time	[h]	6	
	Voltage	[Volt]	187	
	Frequency	[Hz]	50	
	Current	[A]	1.59	
	Power	[Watt]	177	

Lower starting voltage test at 38°C : 187 Volts

NOTE :