WANPAN ® PLANNING

The planning must cover the following requirements:

Ensure to obtain the best heat installation from a technical point of view.
Collect all necessary information to calculate the price.
Collect all necessary information for the installation.

Calculation for WANPAN

A drawing or a sketch of the room showing measurements, doors and if there are built-in cupboards etc. is used for the calculation.

If you wish to use the WANPAN elements option for integrating fittings such as a socket, phone/data plug or an aerial connection, the location of these should be considered.
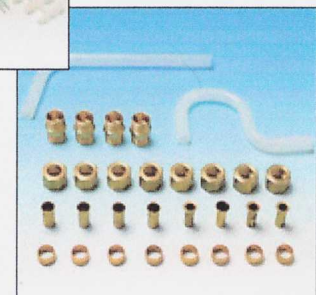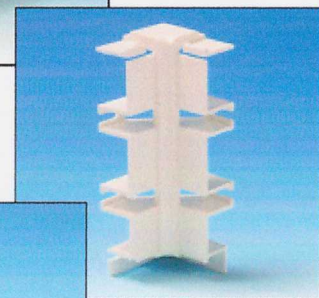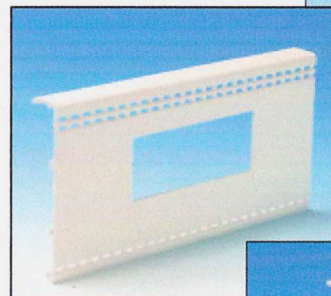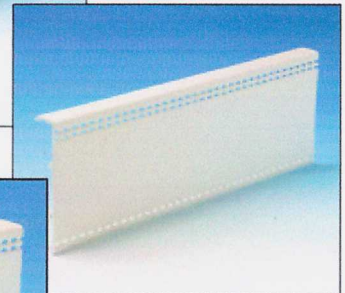
The calculation is made in the following order:

- Stating at the drawing, where WANPAN is going to be placed.
- Calculate the loss of heat in each room due to current law.
- Measure the walls.
- Determine the amount of heat panels each wall due to the table 2 at page 3.
- Determine the lengths at each panel in the room.
- Determine the lengths at the blind panels, which is used. Deduct the total length of the panels from the total length in the room.
- Calculate the performance per foot.
- Determine as well the supply as the return temperature due to the table 3 at page 3.
- Determine what kind of control to be used.

Please notice:

At each heat panel up to 78,74 inches (WP20) 2 brackets are used for the mounting. Afterwards up to (WP32) 3 brackets are used.

In large rooms there can be several connections. The maximum circuit length for heating panels should not exceed 600 inches.

Remember that you save 20-25% in heating cost in the years to come, because of the thermal encirclement principle.

Type	Description	Type	Description	Type	Description
WP	Heat panel	PC	Cover		
APT 32	Blind panel 12.6"	PB	Bracket f. Blind panel	HT	Insulating foil
AP 120	Blind panel 47.24"	PO	Corner, inside		
AP 240	Blind panel 94.5"	PP	Corner, outside		
KT	Connection	PQ	Plug		
KL	Connection, straight	KA	Bracket f. Blind panel		
KV	Connection, corner	KB	Bracket f. mounting		
KC	Coupling	KD	Brace		
KUL	U-coupling with vent.	CRA	Thermostat valve		

Example of calculation

In the below room WANPAN is supposed to be installed.

- The loss of heat is calculated to 3410 BTU/hr.
  Measure the walls.
  Due to the table 3 of the lengths of the walls, we
  can determine as follows:

  Wall A = 122"   WP26 = 102.36"
  Wall B = 112"   WP24 = 94.48"
  Wall C = 157"   WP16 + WP18 = 133,85"
  Wall D = 122"   WP24 = 94.48"

  Total :   513.5"   Total :   425.17"

- Lengths of blind panels:
  513.5" – 425.17" = 88.33"
  we have to use type AP240 (table 1)

- Lengths of heat panels:
  425.17" : 12 = 35,43 feet

- Performance per foot of WANPAN:
  3410 : 35,43 = 96.24 BTU / hr / foot

- The supply and return temperatures are determined
  in the table 3 to: T(supply) = 140°F T(return) =
  122°F

The connection is carried out with a connector type KT and
blind panel type AP32. In the corners 3 connection corners
type KV are used. For closing circuit U coupling (with
ventilation) type KUL are used. Insulating foil type HT should
be placed on cold walls. The foil helps project the heat into
the room.

To finish the assembly the following parts are used:

2 pcs. Plug type PQ	10 pcs. type PB = 2 pcs. per WP panel
3 pcs. Inside corner type PO	13 pcs. type KB = 4 pcs. for WP under 78,74" and 9 pcs. at above 78,74"
	10 pcs. type PC = 2 pcs. per WP
425,17 inches HT Insulating foil	1 pcs. type KL (straight connection)

**This example of calculation is made for programmable
thermostat.**
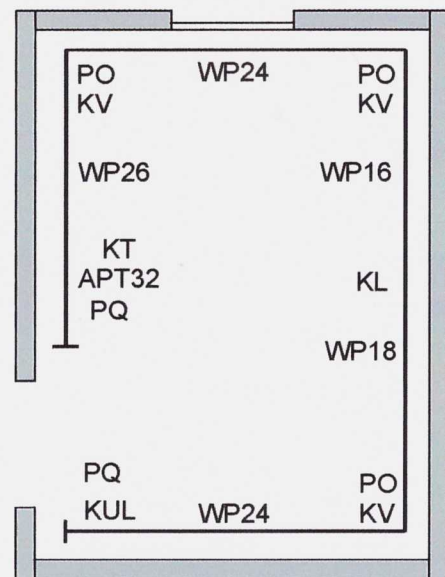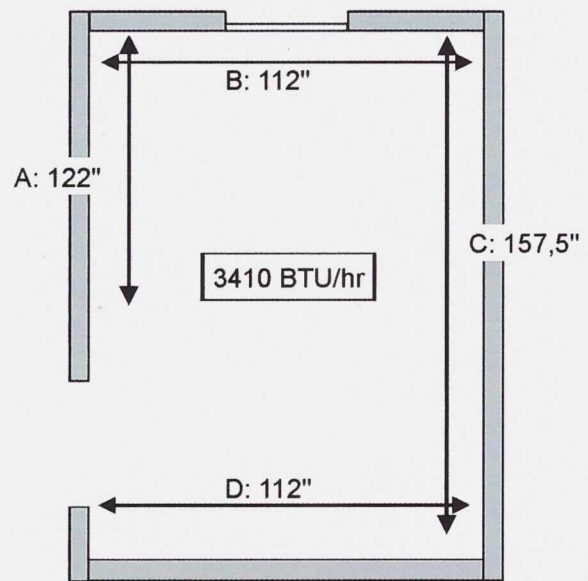
Wall lengths/module requirements

Table 2

Wall lengths in inches	Module	Wall lengths in inches	Module
21,2 – 25,1	2	272,4 – 280,3	20 + 20 + 22
25,1 – 26,3	3	280,3 – 288,2	20 + 22 + 22
29,1 – 37,0	4	288,2 – 296,1	22 + 22 + 22
37,0 – 44,8	6	296,1 – 303,9	22 + 22 + 24
44,8 – 52,7	8	303,9 – 311,8	22 + 24 + 24
52,7 – 60,6	10	311,8 – 319,7	24 + 24 + 24
60,6 – 68,5	12	319,7 – 327,6	24 + 24 + 26
68,5 – 76,3	14	327,6 – 335,4	24 + 26 + 26
76,3 – 84,2	16	335,4 – 343,3	26 + 26 + 26
84,2 – 92,1	18	343,3 – 351,2	26 + 26 + 28
92,1 – 99,9	20	351,2 – 359,1	26 + 28 + 28
99,9 – 107,8	22	359,1 – 366,9	28 + 28 + 28
107,8 – 115,7	24	366,9 – 374,8	28 + 28 + 30
115,7 – 123,6	26	374,8 – 382,7	28 + 30 + 30
123,6 – 131,4	28	382,7 – 390,6	30 + 30 + 30
131,4 – 139,3	30	390,6 – 398,4	30 + 30 + 32
139,3 – 147,2	32	398,4 – 406,3	30 + 32 + 32
147,2 – 155,1	16 + 16	406,3 – 414,2	32 + 32 + 32
155,1 – 162,9	16 + 18	413,8 – 421,6	24 + 24 + 24 + 24
162,9 – 170,4	18 + 18	421,6 – 429,5	24 + 24 + 24 + 26
170,4 – 178,3	18 + 20	429,5 – 437,4	24 + 24 + 26 + 26
178,3 – 186,2	20 + 20	437,4 – 445,3	24 + 26 + 26 + 26
186,2 – 194,0	20 + 22	445,3 – 453,1	26 + 26 + 26 + 26
194,0 – 201,9	22 + 22	453,1 – 461,0	26 + 26 + 26 + 28
201,9 – 209,8	22 + 24	461,0 – 468,9	26 + 26 + 28 + 28
209,8 – 217,7	24 + 24	468,9 – 476,8	26 + 28 + 28 + 28
217,7 – 225,6	24 + 26	476,8 – 484,6	28 + 28 + 28 + 28
225,6 – 233,5	26 + 26	484,6 – 492,5	28 + 28 + 28 + 30
233,5 – 241,3	26 + 28	492,5 – 500,4	28 + 28 + 30 + 30
241,3 – 249,2	28 + 28	500,4 – 508,3	28 + 30 + 30 + 30
249,2 – 257,1	28 + 30	508,3 – 516,1	30 + 30 + 30 + 30
257,1 – 265,0	30 + 30		
265,0 – 272,8	30 + 32		

Survey of heat performance per metre WANPAN, at different Δt-values on the basis of a standard test no. 1073 from the technological institute.

The stated results are taken at 21°C (69,8°F) room temperature. All measurements is transferred to °F.

Table 3

At Δt	BTU / hr / Ft	Supply temp. °F	Return temp. °F
108,0	196,5	186,8	168,8
104,0	188,2	183,2	165,2
100,8	180,9	179,6	161,6
97,0	172,6	176,0	158,0
94,0	165,3	172,4	154,4
90,0	157,0	168,8	150,8
86,4	149,0	165,2	147,2
83,0	141,4	161,6	143,6
79,5	133,0	158,0	140,0
75,6	125,0	154,4	136,4
72,0	117,5	150,8	132,8
68,4	110,2	147,2	129,2
65,0	104,0	143,6	125,6
61,2	96,6	140,0	122,0
57,4	90,2	136,4	118,4
54,0	82,2	132,8	114,8
50,5	77,0	129,2	111,2
47,0	68,7	125,6	107,6
43,0	62,3	122,0	104,0
39,6	57,2	118,4	100,4
36,0	48,8	114,8	96,8
32,5	43,7	111,2	93,2
28,8	37,5	107,6	89,6
25,2	31,2	104,0	86,0
21,6	25,9	100,4	82,4
18,0	21,8	96,8	78,8
14,5	15,6	93,2	75,2
11,0	11,4	89,6	71,6

Calculation of Δt:

$$\Delta t = (t(supply) + t(return)/2) - t(room)$$

WANPAN panels

Table 4

Type WP	Measures in inches	White RAL 9010 EAN-Nr.	Grey RAL 7035 EAN-Nr.
WP2	7,87 x 5,35 x 0,95	5705428202610	5705428302624
WP3	11,81 x 5,35 x 0,95	5705428203617	5705428303621
WP4	15,74 x 5,35 x 0,95	5705428204614	5705428304628
WP6	23,62 x 5,35 x 0,95	5705428206618	5705428306622
WP8	31,49 x 5,35 x 0,95	5705428208612	5705428308626
WP10	39,37 x 5,35 x 0,95	5705428210615	5705428310629
WP12	47,24 x 5,35 x 0,95	5705428212619	5705428312623
WP14	55,11 x 5,35 x 0,95	5705428214613	5705428314627
WP16	62,99 x 5,35 x 0,95	5705428216617	5705428316621
WP18	70,86 x 5,35 x 0,95	5705428218611	5705428318625
WP20	78,74 x 5,35 x 0,95	5705428220614	5705428320628
WP22	86,61 x 5,35 x 0,95	5705428222618	5705428322622
WP24	94,48 x 5,35 x 0,95	5705428224612	5705428324626
WP26	102,36 x 5,35 x 0,95	5705428226616	5705428326620
WP28	110,23 x 5,35 x 0,95	5705428228610	5705428328624
WP30	118,11 x 5,35 x 0,95	5705428230613	5705428330627
WP32	125,98 x 5,35 x 0,95	5705428232617	5705428332621