

**abitana**

## Xcel pro+ DIN-rail enclosures



## The sleek aluminium design of the Xcel pro+ enclosures co

Aluminium is known for its light weight, resistance to corrosion and durability. These are welcome features for an enclosure that often houses very expensive electronics in damp and cold basement environments.

Aluminium is also one of the best heat conductors around. For a given allowable temperature rise, our enclosures will dissipate double the wattage of a steel enclosure or three times that of a plastic enclosure. Another way to say that your electronics will run that much cooler and last that many more years in an Xcel pro+ enclosure.



The end-user who has spent a substantial amount on the latest multimedia server, multiroom music system, TV head-end, home automation or networking installation likes to show it with pride to his friends and visitors. With an Xcel pro+ enclosure, your system will never be outplayed by its looks.

And as an installer or integrator, what better way to prove your workmanship than to show it in an enclosure whose looks and material finish speak for themselves?



An extensive labeling and numbering system is fitted by default, in order to deliver a self-explanatory panel, to speed up the documentation of the system and to simplify the maintenance and intervention afterwards. This is achieved by the two strip slide-in label sections per DIN rail and the additional slide-in numbering strips for DIN-rail connectors. Each enclosure is delivered with a comprehensive sheet of adhesive icons depicting the major networking functions and room types.

## Combines professional quality and robustness with elegance.

All models of the Xcel pro+ range are stackable. If one enclosure is not large enough for your project, or if you implement an extension later on, just place a second enclosure on top or under the first one. You will not lose any of the features, because we have provided ample passageways for both the installation cables in the back panel and for patch cords in the door frame as well. In this way, two stacked enclosures behave exactly as a larger one.

Installing the enclosures is easy and fast, just a few steps, no special tools. The featherweight of the aluminium backpanel and door frame allow a single person to hand carry even the largest model to site and to mount it singlehandedly without extra help.



The design of the back panel was done with special attention for a clutter free access, to facilitate the introduction of cables, the termination of the wiring and the mounting and testing of switchgear- and networking modules.

When installing a home automation system, or a network cabling system, the number of cables that need connecting quickly goes up to high figures. The Xcel pro+ enclosures provide extra room to run the cables by providing 5cm of cabling depth behind the rails across the entire width of the enclosure; this makes cable introduction and wire termination all the more easy.



Once a system enclosure is finished, it is very easy to gain access to the internals by removing either just the separator panels or the entire door frame. In this way extra modules can be placed and tested, without having to remove patch cords and while the system stays up and running.

On top of that, the Xcel pro+ enclosures offer 31 DIN positions per rail for a modest 60cm overall width. On average 20% more than competing models, effectively setting a new record in it's class.



# Specifications

## IEC/EN 62208 enclosures designed for IEC/EN 61439-1 and IEC/EN 61439-3 assemblies

The Xcel pro+ series of aluminium enclosures has been designed according to the requirements and tests laid out in International and European standard IEC/EN 62208:2011 "Empty enclosures for low-voltage switchgear and controlgear assemblies".

The enclosure is suitable to implement low-voltage assemblies as laid out in International and European standard IEC/EN 61439-1:2011 "Low-voltage switchgear and controlgear assemblies - Part 1: General rules" and IEC/EN 61439-3:2012 "Low-voltage switchgear and controlgear assemblies - Part 3: Distribution boards intended to be operated by ordinary persons (DBO)" provided one installs it according to the guidelines laid out in our installation manual.

The enclosures feature exceptional thermal properties. In the installation manual we provide information helping the designer of the planned switchgear assembly with the choice and operation of switchgear equipment that he intends to house in the enclosure.

### A record breaking capacity for it's size

31 DIN module positions per rail for no more than 60 cm width.

5cm depth for cabling in an enclosures that itself is no more than 18 cm deep overall.

Up to 186 DIN position in an enclosure of just 100 cm height.

#### Characteristics:

- Full aluminium construction
- 2 to 6 DIN-rails - 62 to 186 positions total
- Colour: natural anodised aluminium
- Cabling depth: 50 mm
- Reversible polycarbonate/alu door
- 2 label sections per rail
- Permissible load: 20 kg/rail
- feedthrough ports for installation cable: 10 on top and bottom of back panel

- feedthrough ports for patchcords : 3 on top and bottom of door frame
- stackable with other ABI-HE3060Sxy enclosures

Compliant with IEC/EN 62208, indoor use, IP30 without door, IP40 with door, IK07

Designed to make assemblies according to IEC/EN 61439 (parts 1 & 3)

Enclosures					
article reference	description	# DIN rails	# positions	dimensions WxHxD (mm)	weight (kg)
ABI-HE3060S02	Enclosure with transparant door	2	62	604x409x180	7,6
ABI-HE3060S02-CH	Enclosure without door	2	62	604x409x170	5,6
ABI-HE3060S02-DP	Transparant door for ABI-HE3060S02-CH				2,0
ABI-HE3060S03	Enclosure with transparant door	3	93	604x557x180	9,1
ABI-HE3060S03-CH	Enclosure without door	3	93	604x557x170	6,6
ABI-HE3060S03-DP	Transparant door for ABI-HE3060S03-CH				2,5
ABI-HE3060S04	Enclosure with transparant door	4	124	604x705x180	12,2
ABI-HE3060S04-CH	Enclosure without door	4	124	604x705x170	9,2
ABI-HE3060S04-DP	Transparant door for ABI-HE3060S04-CH				3,0
ABI-HE3060S05	Enclosure with transparant door	5	155	604x853x180	14,5
ABI-HE3060S05-CH	Enclosure without door	5	155	604x853x170	11,0
ABI-HE3060S05-DP	Transparant door for ABI-HE3060S05-CH				3,5
ABI-HE3060S06	Enclosure with transparant door	6	186	604x1001x180	16,8
ABI-HE3060S06-CH	Enclosure without door	6	186	604x1001x170	12,8
ABI-HE3060S06-DP	Transparant door for ABI-HE3060S06-CH				4,0

# Installation

The enclosure has been designed according to the requirements and tests laid out in International and European standard IEC/EN 62208:2011 "Empty enclosures for low-voltage switchgear and controlgear assemblies".

The enclosure is suitable to implement low-voltage assemblies as laid out in International and European standard IEC/EN 61439-1:2011 "Low-voltage switchgear and controlgear assemblies – Part 1: General rules" and IEC/EN 61439-3:2012 "Low-voltage switchgear and controlgear assemblies - Part 3: Distribution boards intended to be operated by ordinary persons (DBO)" provided one installs it according to the guidelines laid out in the following paragraphs of the section "Installation".

In the section Thermal properties we provide information helping the designer of the planned switchgear assembly with the choice and operation of switchgear equipment that he intends to house in the enclosure.

## Unpacking

Check the packaging. Contact your supplier and/or transporter in case of visible damage. Take pictures to support your claim.

Unpack the enclosure carefully to avoid damage to the plexi door and aluminium surfaces.

## Required tools and material

### Tools

Allen key/screw driver 4mm, preferably ball ended (useable under an angle)

Screwdriver PZ2 head

Screwdriver PH2 head

Screwdriver PZ1 head

### Materials

Closed cable duct. The size depends on the number of cables and the used cable entry holes (top and/or bottom)

## Mounting a single enclosure

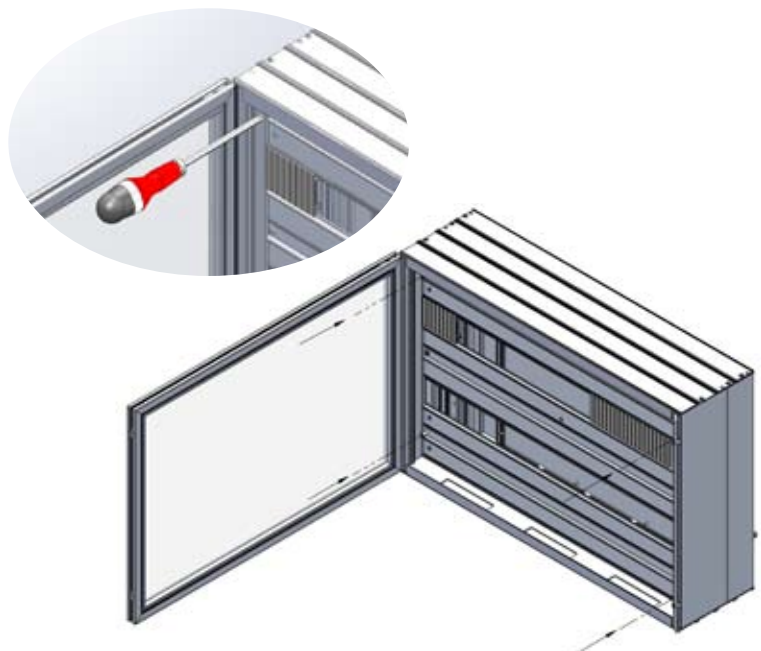
The enclosures can be used in a single arrangement or in an assembly of 2 or more enclosures.

For side-by-side assemblies, the instructions for a single enclosure can be used for all enclosures.

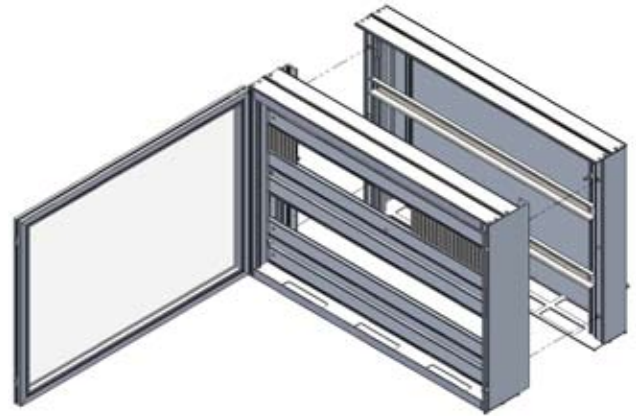
In case of a vertical assembly, additional instructions are provided.

### Remove door frame

Open the door and unscrew the 4 bolts in the corners (do not remove the bolts) using the 4mm allen key/screwdriver.

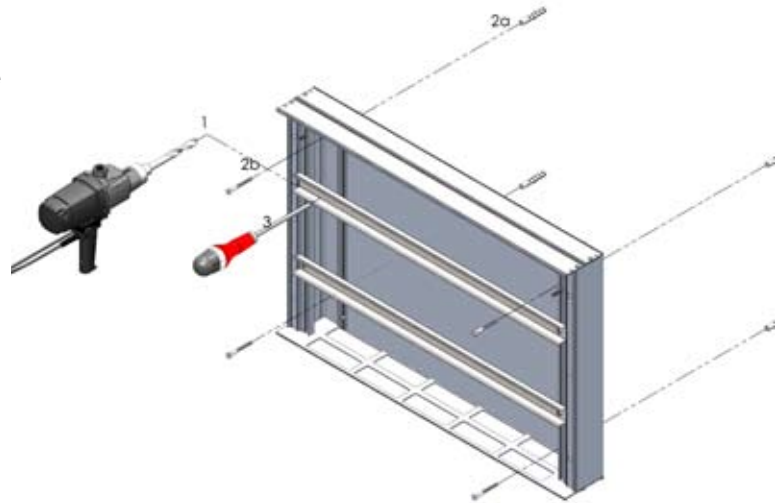


Carefully separate the door frame from the back panel.  
Store the door frame in a safe place (i.e. the packaging)  
to avoid damage caused by accidental tipping or other  
manipulations.



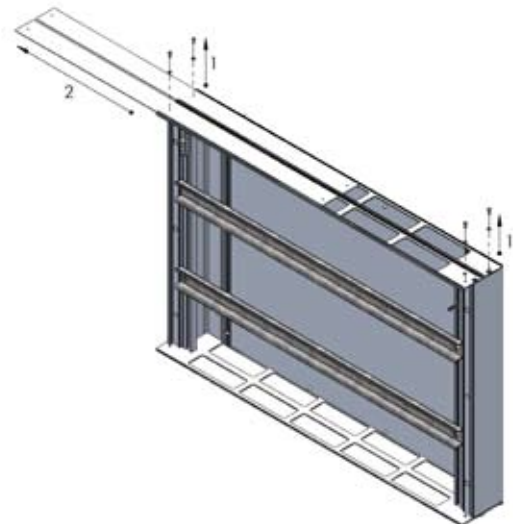
### Hanging the back panel

Fix the back panel to a flat surface.  
Use appropriate screws and plugs, depending on the  
wall type (hollow brick, dry-wall, concrete,...).

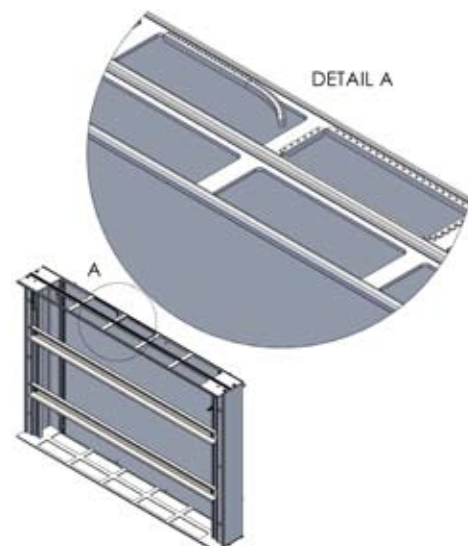


### Cable entry and grounding

Remove the sliding cover strips covering the cable entry  
holes you intend to use. First remove the screws that hold  
them in position using the PZ1 screwdriver



Place the pre-cut edge protection strips over the edge of  
the cable entry holes you intend to use, prior to feeding the  
cables through the hole.



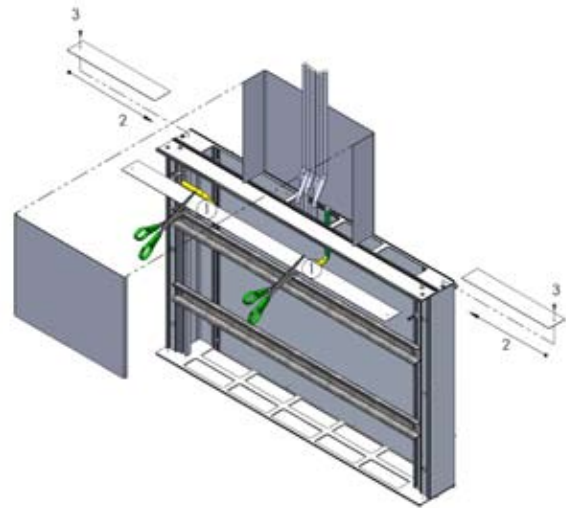
Install the closed cable duct, above the intended cable entry holes.

The unused cable entry holes need to be covered by the previously removed sliding cover strips.

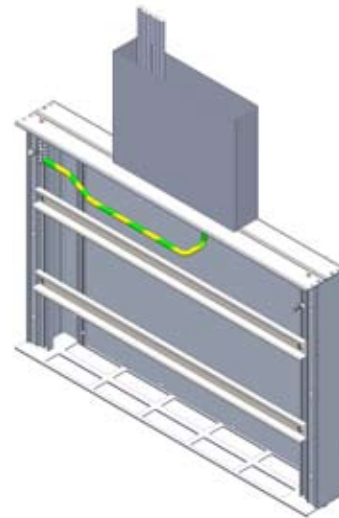
Use adapted scissors or other tooling to cut the sliding covers to length. Make sure to cut the right side to leave the fixing holes in place.

Insert the cut sliding covers and fix them (required for proper grounding) with the earlier removed screws. Tighten with a torque of 1,2 Nm.

Put the cover on the closed cable duct as soon as all cables are properly installed.



Bond the enclosure to ground according local regulations, using the brass grounding terminal block. Tighten with a torque of 2,5 Nm.



## Mounting the door frame

Once all connections have been made, the door frame can be mounted again onto the back panel.

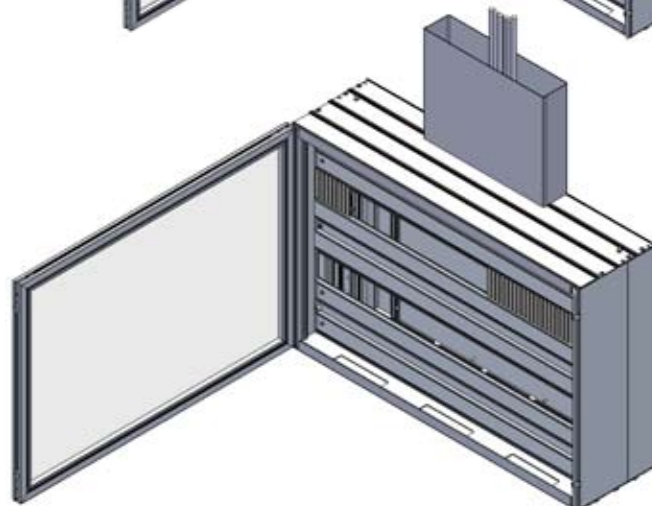
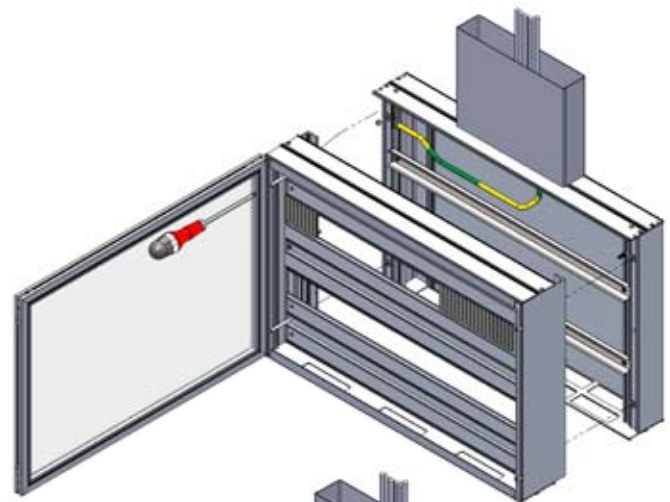
Position the door and frame carefully in front of the back panel, choosing the right opening direction of the door.

Fix the 4 bolts in the corners. Tighten with a torque of 1,5 Nm.

In case the separator panels have been removed earlier, they can now be reinstalled. Tighten with a torque of 1,5 Nm.

The enclosures are rated IP4x when the front door is closed, IP3x when the front door is open. For compliance with these requirements, the installer shall install blind plates in all unused DIN positions.

All DIN-rail equipment and blind plates shall be installed in such a manner that remaining openings are smaller than 2,5 mm. This can be done by adding more blind plates and by either distributing the clearance between the DIN-rail devices or by trimming blind plates to the exact required size.

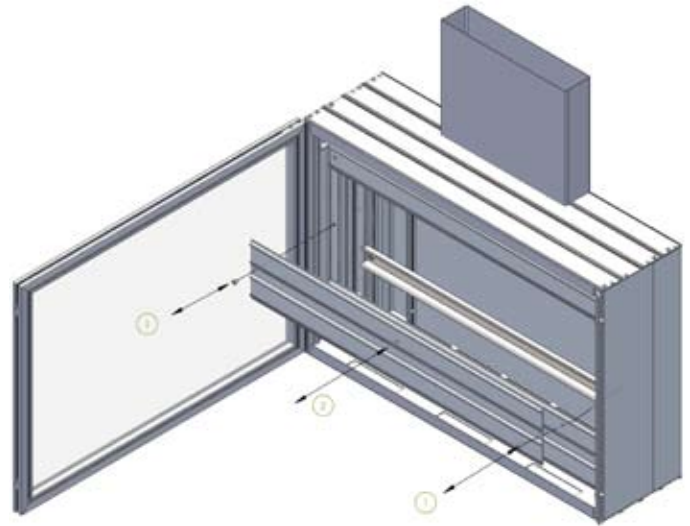


## Mounting separation panels

The DIN-rail separation panels can be removed for easy access to the interior of the enclosure.

When the panels are removed, the door and frame can be removed without removing the patch cords.

Each panel is fixed with 2 screws (PH2) (Torque: 2,5 Nm)



## Mounting two (or more) enclosures aligned vertically

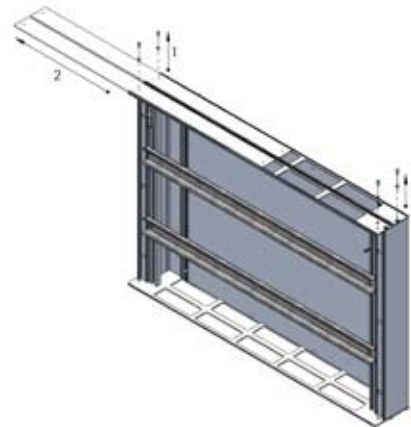
### Fixing of the lower enclosure and positioning of the alignment pins

Fix the lower enclosure according the instructions for 'A single enclosure' - until the topic 'Hanging the back panel' (see earlier).

Remove the 2 upper sliding cover plates en insert the alignment pins

### Hanging of the 2nd back panel

Remove the 2 lower sliding cover plates from the 2nd back

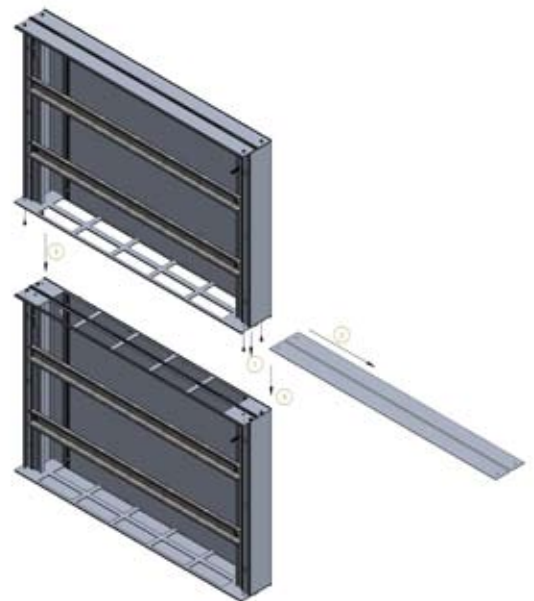


Position the second back and properly align the two parts using the alignment pins.

Use appropriate screws and plugs, depending on the wall type (hollow brick, dry-wall, concrete,...).

### Finishing

Finish the process according the rest of the instructions for a single enclosure



## Door reversal

The construction of the enclosure is symmetrical. When assembling the door and frame to the back part, the opening direction can be chosen by rotating the door and frame assembly.

Remove the door and frame assembly according to the instructions 'Remove the frame'. Reassemble the door and frame to the back panel according to the right opening direction of the door.



## Thermal properties

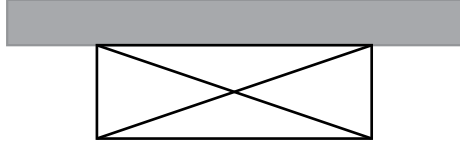
The following tables can be used to estimate the thermal behaviour of a switchgear assembly according to IEC/EN62208.

The tables show the temperature rise in °K for a given power dissipation level in the enclosure and the chosen model and installation environment.

How to use the temperature tables:

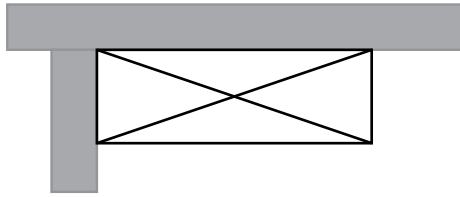
1. Select the table which corresponds best to the enclosure's mounting situation
2. Calculate the total power dissipation in the enclosure (using the data from the switchgear and equipment manufacturer)  
Add 10~15 % to this value for additional wiring losses in the enclosure
3. Determine the maximum allowed temperature rise, based on the expected ambient temperature and the switchgear/equipment manufacturer's data for maximum allowed operating temperature
4. Select in the table the appropriate enclosure model.

### Enclosure fixed against the wall - Sides free



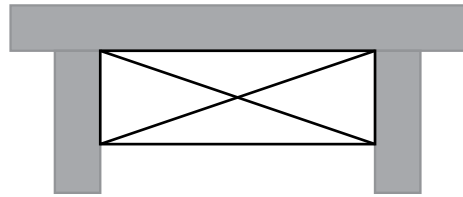
Power (W)	HE3060S02			HE3060S03			HE3060S04			HE3060S05			HE3060S06		
	Mid	Top	Ext Top	Mid	Top	Ext Top	Mid	Top	Ext Top	Mid	Top	Ext Top	Mid	Top	Ext Top
10	6	6	4	5	5	3	4	4	2	3	3	2	3	3	2
20	11	10	7	9	9	5	7	7	4	6	6	4	6	6	4
30	15	15	10	12	12	7	10	10	6	9	9	6	8	8	5
40	19	19	12	15	15	9	12	13	7	11	11	7	10	10	7
50	22	22	15	18	18	11	15	15	9	13	14	8	12	13	8
60	26	26	17	21	21	12	17	18	10	15	16	10	14	15	10
70	29	29	19	24	24	14	20	20	11	17	18	11	16	17	11
80	32	33	21	26	27	15	22	22	13	19	20	12	18	19	12
90	36	36	24	29	29	17	24	25	14	21	22	14	20	21	13
100	39	39	26	31	32	18	26	27	15	23	24	15	22	23	14
110	41	42	28	33	34	20	28	29	17	25	26	16	23	25	16
120	45	48	32	36	37	21	30	31	18	27	28	17	25	27	17
130	48	52	34	38	39	23	32	33	19	29	30	19	27	29	18
140	50	55	36	40	41	25	34	35	21	30	32	20	29	31	19
150	53	58	38	43	44	27	36	37	22	33	34	21	31	33	20
160	56	60	40	45	46	28	38	39	23	34	36	22	32	34	21
170	58	63	41	47	48	29	40	42	25	36	38	23	34	36	23
180	61	66	43	49	51	31	42	44	26	38	40	24	36	38	24
190	63	69	45	52	53	33	44	46	28	39	42	26	37	40	25
200	66	71	47	54	55	34	46	48	29	41	44	27	39	42	26
220	-	-	-	58	58	38	49	51	31	45	47	28	42	45	28
240	-	-	-	62	62	41	52	55	34	48	50	30	45	49	30
260	-	-	-	67	66	44	56	58	36	50	54	32	48	52	32
280	-	-	-	71	69	47	59	62	38	52	57	34	51	55	34
300	-	-	-	75	73	51	62	65	40	55	60	36	54	59	35
320	-	-	-	-	-	-	65	68	42	59	63	37	56	62	37
340	-	-	-	-	-	-	68	71	45	61	66	39	59	65	39
360	-	-	-	-	-	-	-	-	-	63	70	41	62	68	40
380	-	-	-	-	-	-	-	-	-	-	-	-	64	71	42
400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Enclosure fixed against the wall - One side covered



Power(W)	HE3060S02			HE3060S03			HE3060S04			HE3060S05			HE3060S06		
	Mid	Top	Ext Top	Mid	Top	Ext Top	Mid	Top	Ext Top	Mid	Top	Ext Top	Mid	Top	Ext Top
10	7	7	4	5	5	3	4	4	3	3	4	2	3	3	2
20	12	12	7	9	9	6	7	7	5	6	7	4	6	6	4
30	17	17	10	13	13	8	10	11	6	9	10	6	8	9	6
40	21	21	13	16	16	10	13	13	8	12	12	8	11	11	7
50	25	25	15	19	20	12	16	16	10	14	15	9	13	14	9
60	29	29	18	23	23	14	18	19	11	16	17	11	15	16	10
70	32	33	20	25	26	16	21	21	13	18	20	12	17	18	11
80	36	36	22	28	28	17	23	24	14	21	22	13	19	21	13
90	39	40	24	31	32	19	26	26	16	23	24	15	21	23	14
100	42	43	26	34	34	20	28	29	17	24	26	16	23	25	15
110	45	46	29	36	36	22	30	31	19	26	28	17	24	27	17
120	49	50	31	39	39	24	32	33	20	28	31	18	26	29	18
130	52	53	33	41	42	25	34	35	21	30	32	19	28	31	19
140	55	56	35	44	44	26	37	38	23	32	34	21	30	32	20
150	58	59	37	47	47	29	39	40	24	34	36	22	32	35	21
160	61	62	39	49	50	30	41	43	25	36	38	23	34	37	23
170	64	65	41	52	52	31	44	45	27	38	41	25	35	39	24
180	66	67	43	54	54	33	46	47	28	40	43	26	37	41	25
190	69	70	45	57	57	35	48	49	30	42	45	27	39	43	26
200	-	-	-	59	59	36	50	52	31	44	47	28	41	44	28
220	-	-	-	63	63	38	54	56	33	48	51	31	44	48	30
240	-	-	-	67	68	39	58	60	36	51	54	33	47	52	32
260	-	-	-	-	-	-	62	64	38	54	58	35	50	55	34
280	-	-	-	-	-	-	65	68	40	58	61	38	54	58	36
300	-	-	-	-	-	-	69	71	42	61	65	40	57	62	38
320	-	-	-	-	-	-	-	-	-	64	68	42	60	65	40
340	-	-	-	-	-	-	-	-	-	-	-	-	62	68	42
360	-	-	-	-	-	-	-	-	-	-	-	-	65	71	44
380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Enclosure fixed against the wall - Both sides covered



Power(W)	HE3060S02			HE3060S03			HE3060S04			HE3060S05			HE3060S06		
	Mid	Top	Ext Top	Mid	Top	Ext Top	Mid	Top	Ext Top	Mid	Top	Ext Top	Mid	Top	Ext Top
10	7	7	4	5	5	3	4	4	3	4	4	3	4	4	2
20	12	12	7	9	9	6	7	7	5	7	7	4	6	7	4
30	17	17	10	13	13	8	11	11	7	10	10	6	9	10	6
40	21	21	13	16	16	11	13	13	9	12	13	8	12	12	7
50	25	25	15	20	20	13	16	16	11	15	15	9	14	15	9
60	29	29	18	23	23	15	19	19	12	17	18	11	16	17	10
70	32	33	20	26	26	16	21	21	14	19	20	12	18	19	12
80	36	36	22	29	28	18	24	24	15	21	22	14	20	21	13
90	39	40	24	31	31	20	26	26	17	24	25	15	22	23	14
100	42	43	26	34	33	21	29	29	18	26	27	17	24	25	16
110	45	46	29	37	36	23	31	31	20	28	29	18	26	27	17
120	49	50	31	39	39	24	33	33	21	30	32	19	28	29	18
130	52	53	33	42	41	26	36	36	22	32	33	20	29	31	19
140	55	56	35	45	43	28	38	38	24	34	36	22	31	33	21
150	58	59	37	48	46	29	40	40	25	36	38	23	33	35	22
160	61	62	39	50	49	31	43	43	27	38	40	24	35	37	23
170	64	65	41	53	51	33	45	45	28	40	42	26	37	39	25
180	66	67	43	56	53	35	47	47	29	42	44	27	39	41	26
190	69	70	45	58	56	36	50	50	31	44	46	28	40	43	27
200	-	-	-	60	58	37	52	52	32	46	49	30	42	45	29
220	-	-	-	64	63	40	56	56	34	50	52	32	45	49	31
240	-	-	-	69	68	42	60	60	37	54	56	34	48	52	33
260	-	-	-	73	72	45	64	64	39	57	59	37	51	55	35
280	-	-	-	-	-	-	68	68	41	61	62	39	54	58	37
300	-	-	-	-	-	-	72	72	43	64	66	41	57	62	40
320	-	-	-	-	-	-	-	-	-	67	69	44	60	65	42
340	-	-	-	-	-	-	-	-	-	-	-	-	62	68	44
360	-	-	-	-	-	-	-	-	-	-	-	-	65	71	46
380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

