

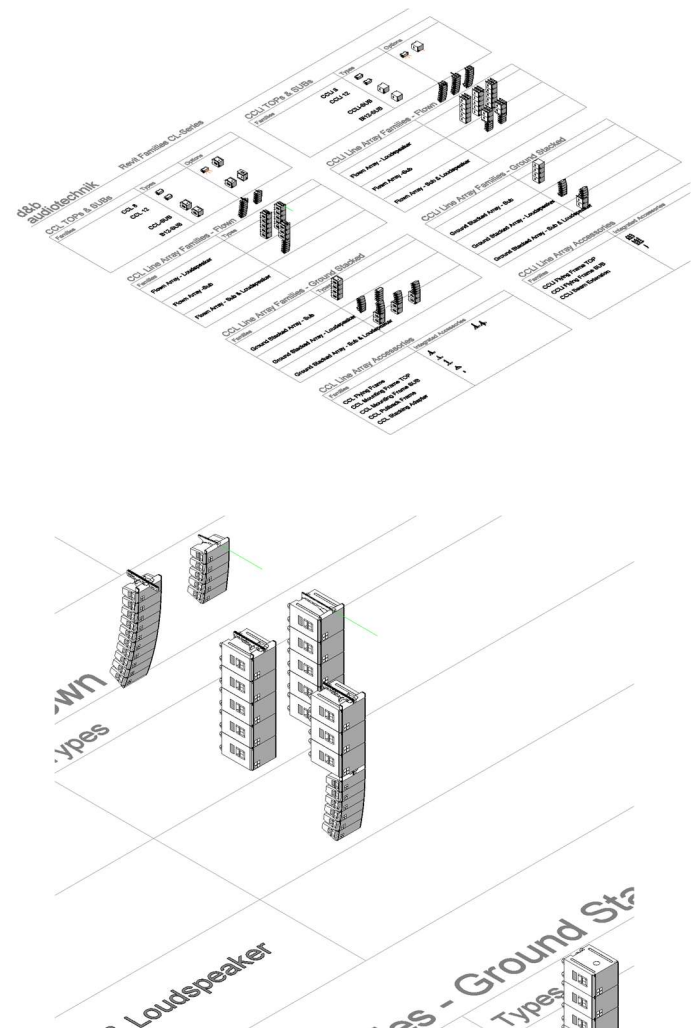
d&b audiotechnik Revit Families CL-Series README

1. Overview

The d&b Revit families are based on Revit version 2018 and are created as *Communication Device* families. The project *d&b audiotechnik Revit Families CL-Series.rvt* contains all components of the CL-Series, i.e. TOPs, SUBs, line array families and accessories families. Where applicable, accessories are already integrated as nested families in the speaker and subwoofer families and can be scheduled accordingly.

CCL TOPs & SUBs			CCL TOPs & SUBs		
Families	Types	Options	Families	Types	Options
d&b CL-Series CCL	Types	Options	d&b CL-Series CCL	Types	Options
d&b CL-Series CCL SUB	Types	Options	d&b CL-Series CCL SUB	Types	Options
d&b CL-Series B10 SUB	Types	Options	d&b CL-Series B10 SUB	Types	Options
CCL Line Array Families - Flown			CCL Line Array Families - Flown		
Families	Types	Options	Families	Types	Options
d&b CL-Series CCL Flown Array - Loudspeaker	Types	Options	d&b CL-Series CCL Flown Array - Loudspeaker	Types	Options
d&b CL-Series CCL Flown Array - Subwoofer	Types	Options	d&b CL-Series CCL Flown Array - Subwoofer	Types	Options
d&b CL-Series CCL Flown Array - Sub & Loudspeaker	Types	Options	d&b CL-Series CCL Flown Array - Sub & Loudspeaker	Types	Options
CCL Line Array Families - Ground Stacked			CCL Line Array Families - Ground Stacked		
Families	Types	Options	Families	Types	Options
d&b CL-Series CCL Ground Stacked Array - Subwoofer	Types	Options	d&b CL-Series CCL Ground Stacked Array - Subwoofer	Types	Options
d&b CL-Series CCL Ground Stacked Array - Loudspeaker	Types	Options	d&b CL-Series CCL Ground Stacked Array - Loudspeaker	Types	Options
d&b CL-Series CCL Ground Stacked Array - Sub & Loudspeaker	Types	Options	d&b CL-Series CCL Ground Stacked Array - Sub & Loudspeaker	Types	Options
CCL Line Array Accessories			CCL Line Array Accessories		
Families	Integrated Accessories	Options	Families	Integrated Accessories	Options
d&b CL-Series CCL Flown Frame	Types	Options	d&b CL-Series CCL Flown Frame TOP	Types	Options
d&b CL-Series CCL Mounting Frame TOP	Types	Options	d&b CL-Series CCL Mounting Frame SUB	Types	Options
d&b CL-Series CCL Mounting Frame SUB	Types	Options	d&b CL-Series CCL Flown Extension	Types	Options
d&b CL-Series CCL Pullback Frame	Types	Options			
d&b CL-Series CCL Stacking Adapter	Types	Options			

d&b audiotechnik Revit Families CL-Series.rvt
Plan View



d&b audiotechnik Revit Families CL-Series.rvt
Isometric Views

2. How to add d&b families into your project

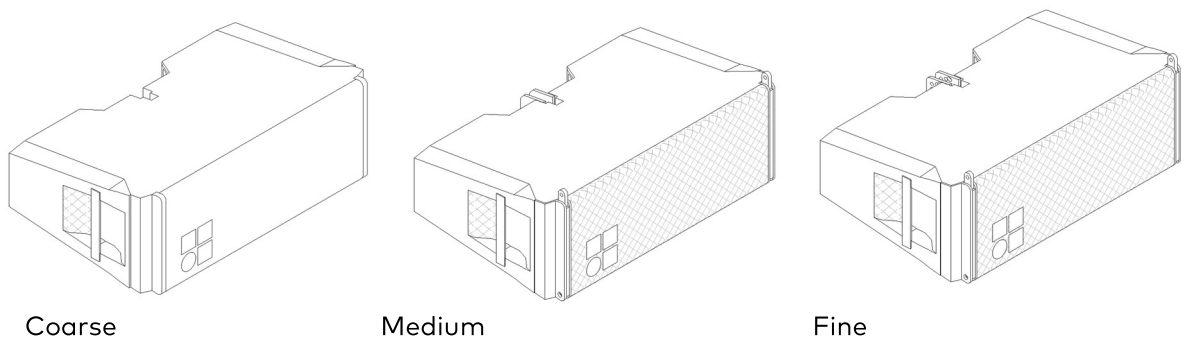
1. Open your project.
2. Open the *d&b audiotechnik Revit Families CL-Series.rvt*
3. In this project, select a family.
4. In the *Modify* menu, run *Edit Family*. This opens the Family Editor.
5. From here, run *Load into Project* (or *Load into Project and Close*) and select your project. The family is now available in the project browser of your project under *Families > Communication Devices*. The family types can be dragged into your drawing area. The nested families are also automatically loaded into your project and show up in the project browser.
6. You can close the family you have opened. You do not need to save it, as all families and types are still available in the *d&b audiotechnik Revit Families CL-Series.rvt*.

Notes:

We do not recommend to run "Copy and Paste" from project to project, as this will copy only the selected type into your project, and no additional types, which you may then miss later.

3. Detail Levels

The d&b audiotechnik families support the Detail Levels Coarse, Medium and Fine.



4. Materials

d&b audiotechnik Materials are already set in the *Properties* of the families. The Materials are already predefined for visualization in Revit.

Refer to the website or manuals to check whether Special Color versions are available. d&b colors the products according to the RAL table. Parts that will be painted are the cabinet, grill and front rigging (d&b Metal Black). The *d&b always black* Material is used for parts of the components which cannot be ordered in a different color.

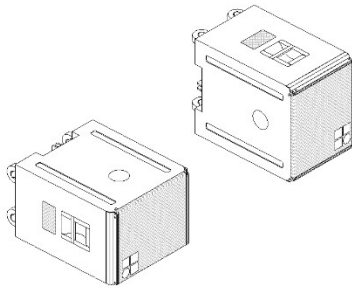
The CL-Series is using standard Revit materials. In case you want to create custom materials, duplicate the materials and material assets for enclosure, grill and paint, and assign them to the properties of a speaker or subwoofer. You can use the "Tint" option in the Appearance tab of the Materials dialog to define custom colors.

Materials and Finishes		^
Enclosure Material	d&b Paint Black	
Grill Material	d&b Metal Grill Black	
Metal Material	d&b Metal Black	

5. Subwoofer families

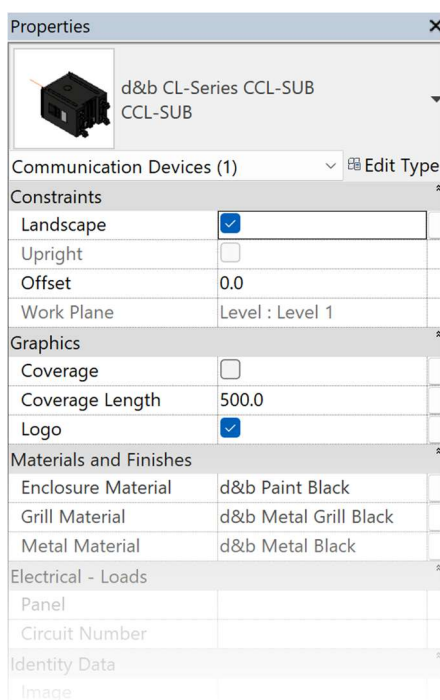
d&b audiotechnik Revit Families CL-Series README

The subwoofer families are usually placed on a Level. Use the Offset parameter in the Properties to set the component on a specific height. The "Landscape" and "Upright" parameters place the subwoofers in horizontal or vertical orientation.



SUBs with "Landscape" (left)
and
"Upright" (right) orientation

6. Subwoofer families properties



Constraints

The "Landscape" and "Upright" parameters rotate the subwoofers accordingly.

Graphics

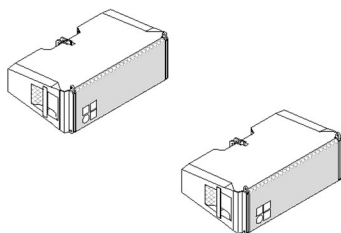
Shows the coverage lines and the length of the Coverage lines. Further, the d&b Logo can be deactivated.

Materials

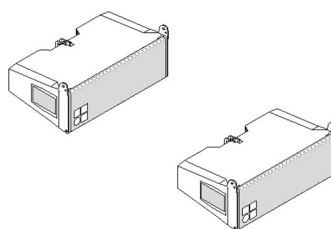
Assignment of d&b materials for the different components of the families. For custom materials, note the chapter 4. Materials

7. Loudspeaker families

The TOPs of the CL-Series are integrated in the line array families. All loudspeaker properties can be set in the line array families.



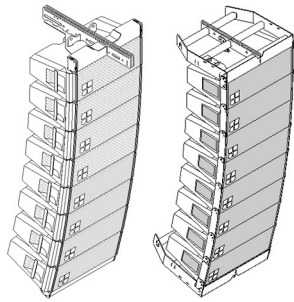
CCL8 & CCL12



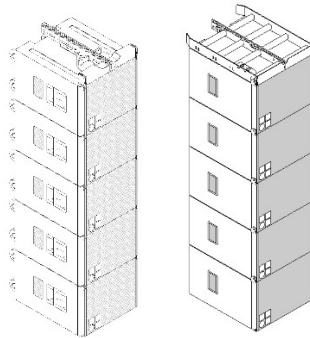
CCLi8 & CCLi12

8. Line array families

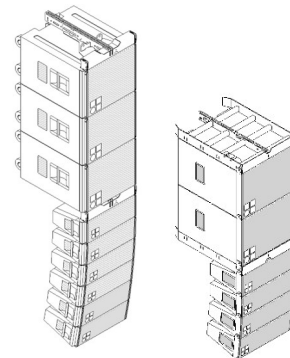
Instead of combining single speakers or subs manually to a line array in a Revit project (which is technically possible but cumbersome), we have developed predefined line array families. They consist of nested families such as speakers, subs and frames. As they are nested families, they show up in the schedules. Various property settings allow configure the line arrays. There are separate line array families for mobile and installation. The number of subs and speakers and their angles can be configured in the properties. In general, we differ between the following line arrays (left: CCL, right: CCLi):



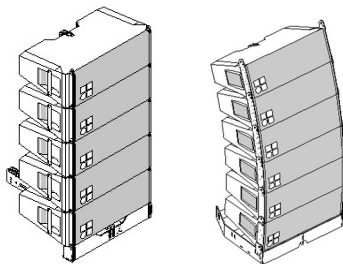
Flown array
TOPs (with and without
pullback)



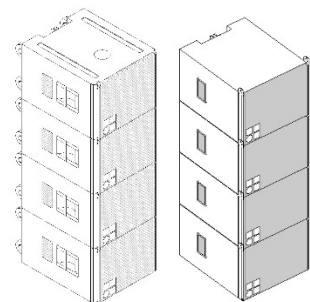
Flown array
SUBSs



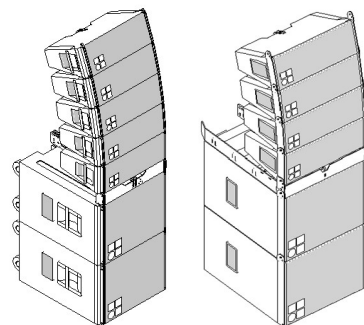
Flown array
TOPs & SUBS



Ground stacked array
TOPs

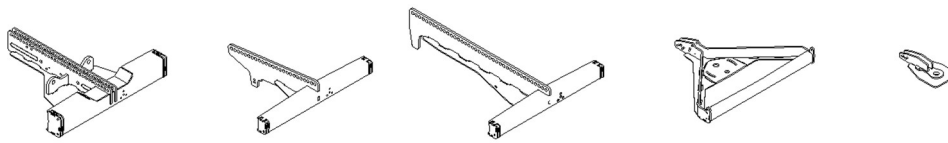


Ground stacked array
SUBSs



Ground stacked array
TOPs & SUBS

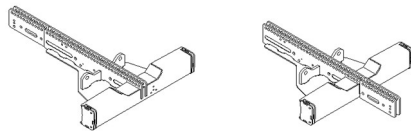
9. Accessories



CCL Integrated accessories

For the flying frame, note the parameters

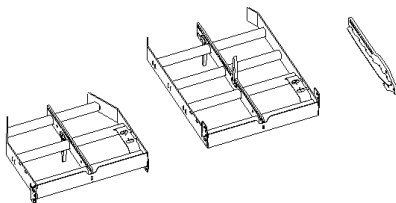
Flying Frame Extension Front, Flying Frame Extension Back, Pullback Frame in the Properties dialog.



CCLi Integrated accessories

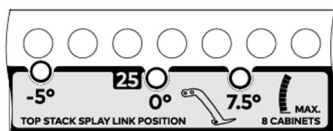
For the flying frame, note the parameters

Beam Extension Front, Beam Extension Back, Pullback Mode in the Properties dialog.



9. Splay angles restrictions

CCL Flying frame as ground support:



Splay angles of the first cabinet

The Flying frame's center beam hole grid provides dedicated holes to allow the first cabinet to be set to tilt angles of -5° (downtilt), 0° or 7.5° (uptilt).

-5° No restriction.

0° With the 0° setting, the splay angle of the next (second) cabinet can be set in the range of $0...13^\circ$.

7.5° With the 7.5° setting, the splay angle of the next (second) cabinet can be set in the range of $1...9^\circ$.

CCL Pullback frame as ground support:



Splay angles of the first cabinet

The Splay link slot at the rear Pullback frame provides a dedicated hole grid to allow the first cabinet to be set to tilt angles of 7.5° (uptilt), -5° (downtilt) or 0° .

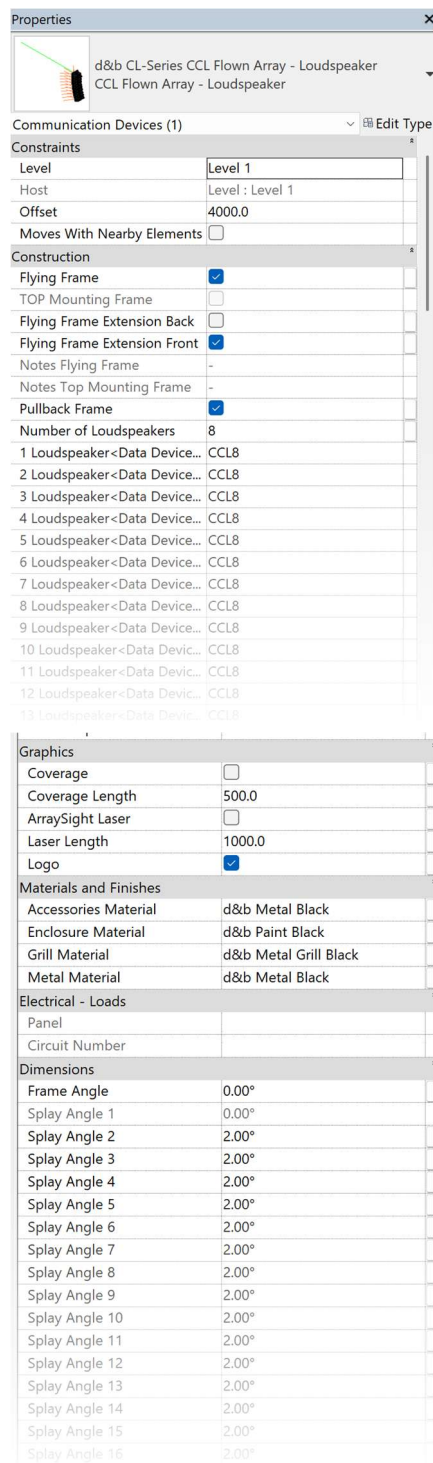
7.5° With the 7.5° setting, the splay angle of the next (second) cabinet can be set in the range of $1...14^\circ$.

-5° With the -5° setting, the splay angle of the next (second) cabinet can be set in the range of $0...14^\circ$.

0° With the 0° setting, the splay angle of the next (second) cabinet can be set in the range of $0...13^\circ$.

10. CCL Line array families properties

The screenshot shows a Sub & Loudspeaker array. Sub arrays and Loudspeaker arrays have slightly different properties.

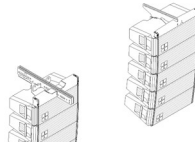


The Offset value defines the bottom height of the top frame.

Construction

Flying Frame/TOP Mounting Frame

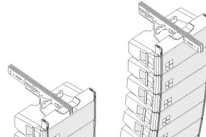
Defines the position of Flying Frame Extension.



Flying Frame Extension Front / Back

Defines the position of Flying Frame Extension

Please only check one option.



Pullback Frame

Adds the pullback frame on the bottom of the loudspeaker.



Number of Subwoofers and Loudspeakers

Please observe the corresponding rigging manuals for safe use and check the load limits using ArrayCalc!

1 Loudspeaker	[CCL8 or CCL12]	
2 Loudspeaker	[CCL8 or CCL12]	
3 Loudspeaker	[CCL8 or CCL12]	

Defines the use of CCL8/CCL12 speakers. The prefix number represents the cabinet position within the array, counted from the top for flown arrays.

Graphics

Shows the coverage lines and the length of the Coverage lines. Additionally, the integrated ArraySight Laser can be set and the d&b Logo can be deactivated.

Materials

Assignment of d&b materials for the different components of the families.

Dimensions

Here you set the angles between the SUBs and TOPs. Make sure that you set the values according the d&b audiotechnik mounting instructions, as there is no validation in Revit!

11. Type properties

Additional data is integrated in the Type Properties of the families and can be schedules, such as *Part Number* and the properties under the *Data* group.

Type Properties

Family: d&b CL-Series CCL
Load...

Type: CCL12
Duplicate...

Rename...

Type Parameters

Parameter	Value	=
Constraints		
Default Elevation	0.0	
Dimensions		
Height	209.0	
Width	593.0	
Depth	355.0	
Identity Data		
Part Number	Z0882	
Support Email	support@dbaudio.com	
Support Phone	+49 7191 9669-0	
Type Image		
Keynote		
Model	CCL12	
Manufacturer	d&b audiotechnik	
URL	http://www.dbaudio.com/	
Type Comments		
Description	Mobile specific compact cardioid line array l	
Assembly Code		
Cost		
Assembly Description		
Type Mark		
OmniClass Number	23.85.10.11.14.14.14	
OmniClass Title	Loudspeakers	
Code Name		
Data		
Frequency Range Low (-5 dB Standard)	60.00 Hz	
Frequency Range High (-5 dB Standard)	18000.00 Hz	
Max. SPL (1m, Free Field) with D80	137	
SPL Max	137	
SPL Stimulus	Broadband signal IEC 60268	
Cabinets per D80	4 (AP), 8 (Line or Arc)	
Power Handling Capacity Peak 10 ms	1200.00 W	
Power Handling Capacity RMS	400.00 W	
Coverage Horizontal	120.00°	
Splay Angle Maximum	14.00°	
Splay Angle Minimum	0.00°	
Weight	17.600 kg	
LF Front Diameter	7"	

<< Preview
OK
Cancel
Apply

12. CCLi Line array family properties

The screenshot shows a sub & loudspeaker array. Sub arrays and Loudspeaker arrays have slightly different properties.

Properties

d&b CL-Series CCLi Flown Array - Loudspeaker
CCLi Flown Array - Loudspeaker

Communication Devices (1) Edit Type

Constraints

Level	Level 1
Host	Level : Level 1
Offset	4000.0
Moves With Nearby Eleme...	☐

Construction

Beam Extension Front	☒
Beam Extension Back	☐
Pullback Mode	☐
Number of Loudspeakers	8
1 Loudspeaker<Data Devi...	CCLi8
2 Loudspeaker<Data Devi...	CCLi8
3 Loudspeaker<Data Devi...	CCLi8
4 Loudspeaker<Data Devi...	CCLi8
5 Loudspeaker<Data Devi...	CCLi8
6 Loudspeaker<Data Devi...	CCLi8
7 Loudspeaker<Data Devi...	CCLi8
8 Loudspeaker<Data Devi...	CCLi8
9 Loudspeaker<Data Devi...	CCLi8
10 Loudspeaker<Data Dev...	CCLi8
11 Loudspeaker<Data Dev...	CCLi8
12 Loudspeaker<Data Dev...	CCLi8

Graphics

Coverage	☐
Coverage Length	500.0
Logo	☒

Materials and Finishes

Accessories Material	d&b Metal Black
Enclosure Material	d&b Paint Black
Grill Material	d&b Metal Grill Black
Metal Material	d&b Metal Black

Electrical - Loads

Panel	
Circuit Number	

Dimensions

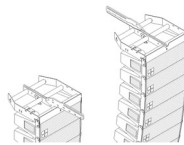
Frame Angle	0.00°
Splay Angle 1	0.00°
Splay Angle 2	2.00°
Splay Angle 3	2.00°
Splay Angle 4	2.00°
Splay Angle 5	2.00°
Splay Angle 6	2.00°
Splay Angle 7	2.00°
Splay Angle 8	2.00°
Splay Angle 9	2.00°
Splay Angle 10	2.00°
Splay Angle 11	2.00°
Splay Angle 12	2.00°
Splay Angle 13	2.00°
Splay Angle 14	2.00°
Splay Angle 15	2.00°

The Offset value defines the bottom height of the top frame.

Construction

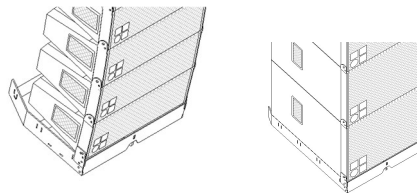
Beam Extension Front/Back

Defines the position of the Beam Extension
Please only check one option.



Pullback Mode

Adds the flying frame to the bottom cabinet.



Number of Subwoofers and Loudspeakers

Please observe the corresponding rigging manuals for safe use and check the load limits using ArrayCalc!

1 Loudspeaker	[CCLi8 or CCLi12]	
2 Loudspeaker	[CCLi8 or CCLi12]	
3 Loudspeaker	[CCLi8 or CCLi12]	

Defines the use of CCLi8/CCLi12 speakers. The prefix number represents the position of the cabinet within the array, counted from the top for flown arrays.

Graphics

Shows the coverage lines and the length of the Coverage lines. Additionally, the integrated ArraySight Laser can be set and the d&b Logo can be deactivated.

Materials

Assignment of d&b materials for the different components of the families.

Dimensions

Here, you set the angles between the SUBs and TOPs. Make sure that you set the values according the d&b audio mounting instructions, as there is no validation in Revit!

13. Schedules

Note:

The *Communication Device Schedule* in *d&b audiotechnik Revit Families SL-Series.rvt*. It counts the components including their data.

v	Type	Part Number	Weight	Connections
d&b CL-Series CCL-SUB	CCL-SUB	Z0884	66.00 kg	NLT4 F/M
d&b CL-Series CCL	CCL8	Z0880	17.60 kg	NLT4 F/M
d&b CL-Series CCL	CCL12	Z0882	17.60 kg	NLT4 F/M
d&b CL-Series CCL-SUB	CCL-SUB	Z0884	66.00 kg	NLT4 F/M
d&b CL-Series CCL-SUB	CCL-SUB	Z0884	66.00 kg	NLT4 F/M
d&b CL-Series CCL Flying Frame	CCL Flying Frame	Z5820	20.00 kg	
d&b CL-Series CCL Flown Array - Loudspeaker	CCL Flown Array - Loudspeaker			
d&b CL-Series CCL Flying Frame	CCL Flying Frame	Z5820	20.00 kg	
d&b CL-Series CCL	CCL8	Z0880	17.60 kg	NLT4 F/M
d&b CL-Series CCL	CCL8	Z0880	17.60 kg	NLT4 F/M
d&b CL-Series CCL	CCL8	Z0880	17.60 kg	NLT4 F/M
d&b CL-Series CCL	CCL8	Z0880	17.60 kg	NLT4 F/M
d&b CL-Series CCL	CCL8	Z0880	17.60 kg	NLT4 F/M
d&b CL-Series CCL	CCL8	Z0880	17.60 kg	NLT4 F/M
d&b CL-Series CCL Mounting Frame TOP	CCL Mounting Frame TOP	Z5821	20.00 kg	
d&b CL-Series CCL Flown Array - Loudspeaker	CCL Flown Array - Loudspeaker			
d&b CL-Series CCL Flying Frame	CCL Flying Frame	Z5820	20.00 kg	
d&b CL-Series CCL	CCL8	Z0880	17.60 kg	NLT4 F/M
d&b CL-Series CCL Mounting Frame TOP	CCL Mounting Frame TOP	Z5821	20.00 kg	
d&b CL-Series CCL Mounting Frame SUB	CCL Mounting Frame SUB	Z5822	20.00 kg	
d&b CL-Series CCL	CCL8	Z0880	17.60 kg	NLT4 F/M
d&b CL-Series CCL Flown Array - Subwoofer	CCL Flown Array - Subwoofer			
d&b CL-Series CCL Flying Frame	CCL Flying Frame	Z5820	20.00 kg	
d&b CL-Series CCL-SUB	CCL-SUB	Z0884	66.00 kg	NLT4 F/M

14. Tags

You can use the integrated d&b annotation tag to automatically annotate the types with part number or Type name.



Z0880 CCL8



Z0882 CCL12



Z0884 CCL-SUB