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# Active Chilled Beam

## ACB60

300mm Wide

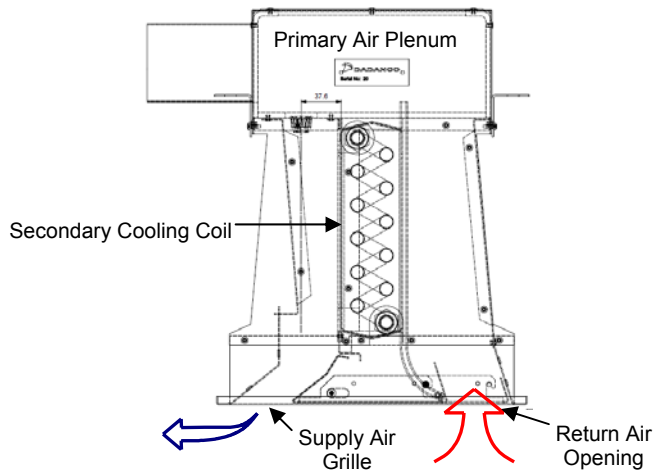
1-way discharge perimeter Active Chilled Beam



# General Information

## ACB60

Dadanco ACB60 1-way discharge Active Chilled Beams incorporate new patented technologies to deliver a breakthrough for higher energy efficiency perimeter zone air conditioning using lower air quantities. Dadanco Active Chilled Beams provide efficient, effective and whisper-quiet air conditioning for almost any application.



ACB60 incorporates 1-way supply air discharge with single slot return air opening and a single vertical secondary cooling coil for use in typical perimeter zone applications.

Secondary room air is induced directly from the conditioned space to deliver localized secondary cooling and eliminate cross-contamination between rooms or units.

Ceiling plenum/void does not need to be a conditioned space.

### Advantages of Active Chilled Beams

- Dadanco Active Chilled Beams supply cooling, heating and the outdoor air required for ventilation in the conditioned space.
- Compact dimensions and intrinsically smaller duct sizes offer real savings in ceiling space requirements for new construction and HVAC refurbishment project.
- Fan power is dramatically reduced. The low primary air quantity is treated by the AHU and distributed at low pressure. The primary air is typically only 30% of the total air supplied by Dadanco Active Chilled Beams due to the use of efficient induction technology.
- Secondary air is induced over the secondary heat exchanger, delivering localized cooling, for NO FAN ENERGY REQUIREMENT.
- ACB60 Active Chilled Beams provide 1-way supply air distribution, specifically designed for perimeter zones.
- ACB60 Active Chilled Beams are designed for 'Lay-In' installation in ceiling tile systems or in rigid plasterboard ceilings.
- ACB60 Active Chilled Beams deliver more cooling capacity using less treated air than any all-air system.
- Active Chilled Beams offer 2-stage capacity control through control of secondary water flow separate from primary air control.
- Noise radiated from Dadanco Active Chilled Beams is very low...
- Active Chilled Beams require minimal maintenance (no moving parts).

### Application Data – ACB60

COOLING	45 to 175 W/m <sup>2</sup>
LENGTH:	Nominal 300 x 1200mm & 300 x 1500 grille to suit standard suspended ceiling tile systems or plasterboard ceilings Unit lengths from 600mm to 1500mm available on request for any application
FEATURES:	Side entry primary air spigot End secondary water connections Suitable for either T-Bar lay-in or rigid plasterboard ceilings
HEIGHT:	374mm
INSULATION:	Thermal insulation for the primary air plenum is standard
GRILLE:	1-way discharge supply air grille with single slot return air opening
CONTROLS:	ACB60 perimeter Active Chilled Beams can be controlled individually or in groups of units
APPLICATIONS:	Dadanco Active Chilled Beam ACB60 is specifically designed for perimeter zone in-ceiling installations in: <ul style="list-style-type: none"> <li>- Office Buildings</li> <li>- New Construction &amp; HVAC Refurbishment Projects</li> <li>- Schools and Institutional Buildings</li> <li>- Airports</li> </ul>

# General Information ACB60

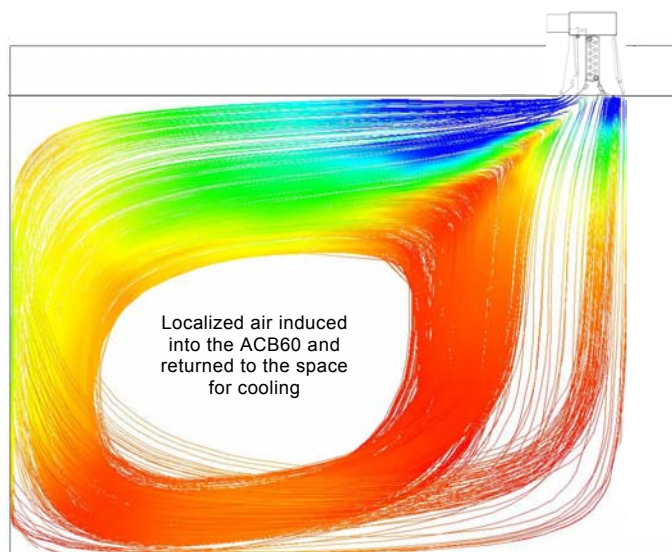
## Typical ACB60 Air Distribution

The 1-way discharge air flow characteristics of Active Chilled Beam ACB60, created by the induction of secondary air through the directly into the unit, produces a unique air flow pattern resulting in thorough purging of air in the occupied space compared to most conventional all-air diffusion characteristics.

Entrainment of secondary air from within the conditioned space reduces the potential for cross-contamination between different zones within the building.

Entrainment of secondary air at the façade assists in treating façade transmission loads close to the façade.

Relatively low terminal velocities can be maintained in the conditioned space.



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## General Product Technical Data

ACB60 1-Way Discharge Perimeter Active Chilled Beam		
	ACB60-1100.262	ACB60-1400.262
Nominal Grille Face Size:	300 x 1200mm	300 x 1500mm
Nominal Active Coil Length	1100mm	1400mm
Primary Air Range $\leq 125\text{Pa}$ :	16 ~ 32 L/s	22 – 42 L/s
Nominal Cooling Capacity Range:	557 ~ 986 Watts	787 – 1340 Watts
Configuration:	2-Pipe Only	2-Pipe Only

NOTE: Nominal cooling capacities based on 2-pipe coil @ 24°C room air, 12°C primary air, 14°C Entering Secondary Water Temperature and Secondary Water Flow Rate to achieve average Leaving Water Temperature of 17°C ( $\Delta T = 3^\circ\text{C}$ ) or minimum water flow of 0.03 L/s.

Primary Air Pressure  $\leq 125\text{Pa}$ .

Different performance results can be achieved for varying secondary water flow rates, entering water temperatures, primary air conditions and primary air pressures.

For selections at conditions and unit sizes other than those above please refer to selection tables or contact DADANCO for further assistance.

## New Technologies

Dadanco's Starline™ multi-lobe high performance induction nozzles and superior fluid dynamics design are combined into Dadanco ACB60 Active Chilled Beams for improved performance and lower noise characteristics.

Rather than relying on natural convection as with passive chilled beams, Dadanco ACB60 Active Chilled Beams use primary air to deliver ventilation air and induce secondary room air through the secondary cooling coil within the unit, delivering enhanced performance in one simple ceiling mounted package.

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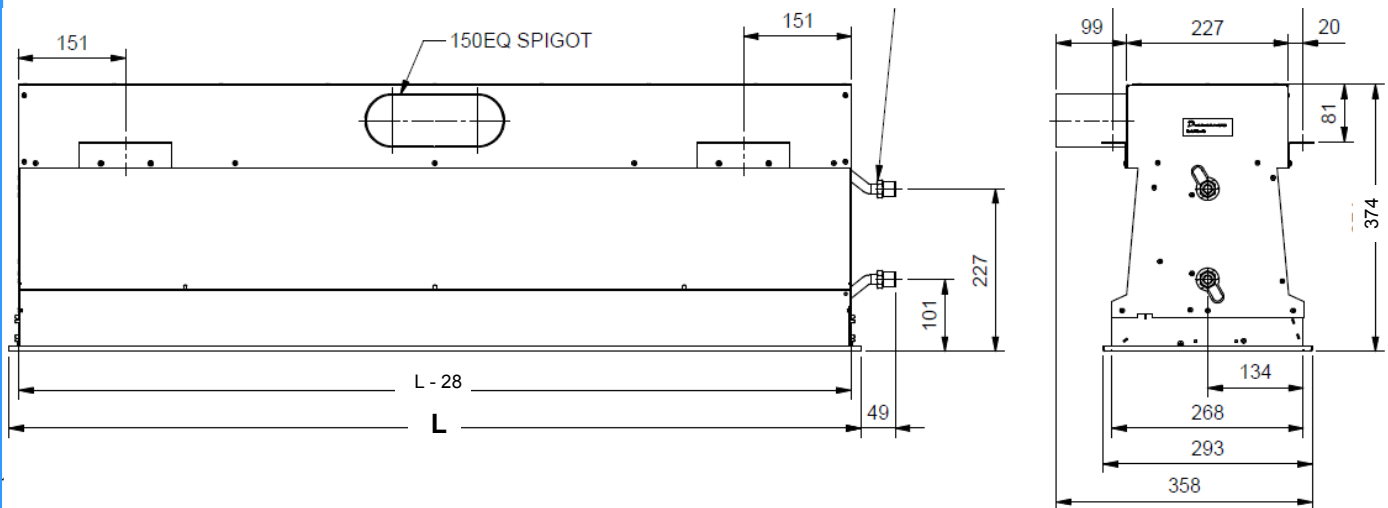


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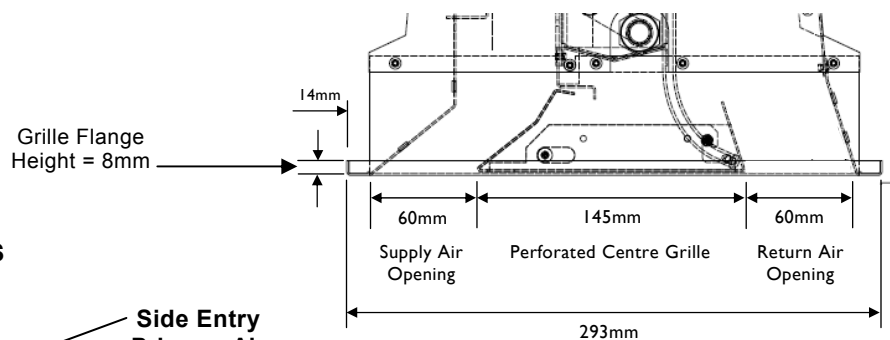
### DIMENSIONS

Standard ACB60 Active Chilled Beams are dimensioned as below based on active coil length to determine overall length

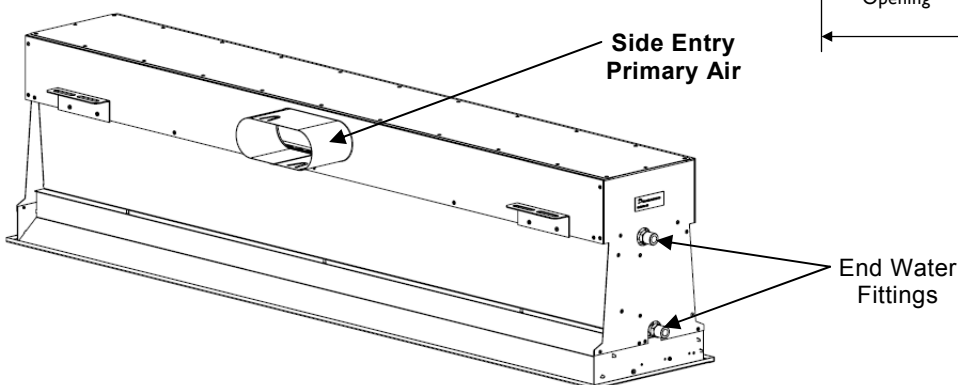
Nominal Length	Active Coil Length	Overall Grille Length (L)	Unit Weight
1200mm	1100mm	1195mm	24 Kg
1500mm	1400mm	1495mm	32 Kg



### GRILLE DETAILS



### PRIMARY AIR & WATER CONNECTIONS



### WATER HANDING OPTIONS

Side Entry Primary Air—Left or Right Hand water fittings as viewed from the primary air spigot on the Supply Air side of the unit

### STANDARD FEATURES

- 1/2" male BSP flat face tapered thread fittings
- 2-Pipe cooling coil configuration
- End secondary water connections (Either End)
- Ø150mm ovalised primary air spigot
- Insulated primary air plenum
- Interpon GA/MA124A 'Satin White' Powdercoated Grille

### OPTIONAL FEATURES

- Plain copper connections or other brass fittings
- Ø100mm primary air spigot
- Front or Rear primary air spigot location
- Un-Insulated primary air plenum
- Non-standard grille colors (on request)

# ACB60 Guide Specification

## GUIDE SPECIFICATION ACB60

### Scope

Provide Dadanco single-direction ACB60, in-ceiling Active Chilled Beam units; fitted with low-noise, high efficiency patented Starline™ nozzles, with capacities as listed in the equipment schedule. The configuration of the units is shown on the drawings.

### Construction

Construct the active chilled beam casing(s) from 0.8mm galvanised steel panels to provide a compact unit with a primary air plenum, secondary air cooling coil, one air entrainment and discharge chamber and mounting support provisions.

Plenum: Fit one row of the specified number and size of STARLINE™ induction nozzles to the primary air plenum, to discharge primary air into the air entrainment chamber. Provide an ovalised 150mm-diameter sheetmetal spigot located centrally on the longitude of the primary air plenum to permit connection of primary air flexible ductwork to the unit.

Provide high level mounting brackets (4), with elongated slots, to the outside of the unit to permit hanging using threaded rods or ceiling wire. Mounting brackets are to be permanently secured to the unit as shown on the drawing.

Insulation (*Standard*): Provide factory assembled self adhesive, fire retardant thermal insulation to the interior of the primary air plenum to prevent condensation forming on the outside of the unit.

Nozzles: Fit multi-lobed patented Starline™ induction nozzles designed for low noise generation and rapid secondary air entrainment. Provide the number and size of nozzles required to provide the primary airflow capacity specified for each unit.

Secondary cooling coil: Fit a single two-row 2-Pipe secondary air coil of the specified length as required to achieve the specified secondary cooling capacity. Coil shall be constructed of galvanised steel end plates and frame with ½" copper tubes mechanically expanded into 0.145mm thickness rippled edge aluminium fins.

Provide ½" BSP male flat face tapered thread fittings on all coil connections. Water fittings are to be positioned at the end of the unit.

Secondary coil maximum recommended site test pressure not to exceed 2500 kPa (25 Bar) with continuous maximum recommended operating pressure of 1680 kPa (16.8 Bar). Coil to be factory pressure tested to 2500 kPa and conform to a burst pressure rating of 13,000 kPa (130 Bar) at 50°C.

Grille: Provide an integral powder coat satin white finished combination supply/return air grille for each unit. The supply air grille to be sheetmetal profiled 1-active slot grille along one longitudinal side and a return air opening at the opposite longitudinal side of the unit. The centre section of the grille shall form a swing-down perforated metal panel for ready access to the secondary coil for cleaning.

The grille assembly and dimensions shall be suitable for T-bar ceiling system lay-in or rigid plasterboard ceiling installations and be powdercoat finished to Interpon MA/GA124A satin white or approved colour.

The unit shall incorporate a commissioning tube to measure the static pressure in the plenum. The tube is to be made from flexible plastic sealed air tight into the plenum and be accessible from the return air opening of the unit.

### Installation

To ensure the performance of the Active Chilled Beam, allow for the following:

- Ensure that the unit is level and the fixing is secure.
- Connection to the main primary air duct with straight or gently radiused flexible duct, Make all joints airtight.
- Connect the secondary chilled water flow and return piping to the secondary air coil, including the supply and installation of the isolating and control valves as shown on the piping schematic.

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# ACB60 Active Chilled Beam Selection Tables

The following tables provide selection data for ACB60 unit sensible cooling performance across a range of primary air pressures and air quantities, primary air  $\Delta T$  and secondary air to entering water  $\Delta T$  for fixed value secondary water  $\Delta T$  of 2K or 3K.

**Selections where primary air quantity and operating parameters are known**

**Step 1:** Choose 2-Pipe ACB60 Active Chilled Beam and locate the correct table for the preferred unit length

**Step 2:** Determine the design secondary chilled water temperature differential (2K or 3K) — locate tables based on this value

**Step 3:** Determine the design primary air quantity and choose the value from one of the selection tables

**Step 4:** Determine the design primary air  $\Delta T_{PA}$  (Room Air—Primary Air) from the Primary Air Cooling header row and select the value where primary air quantity from Step 3 and primary air  $\Delta T_{PA}$  from Step 4 intersect.

Steps 3 & 4 will determine the primary air sensible cooling capacity (W)

**Step 5:** Determine the value where primary air quantity from Step 3 and primary air  $\Delta T_{PA}$  from Step 4 intersect.

Step 5 will determine the primary air sensible cooling capacity (W)

**Step 6:** Determine the design Room Air—Entering Secondary Water  $\Delta T_{SCA}$  from the correct water  $\Delta T$  table header row.

Move vertically from the selected water  $\Delta T_{SCA}$  value to the horizontal row corresponding to the primary air quantity and sensible cooling capacity selections in Steps 3 and 5 to determine Secondary Air Sensible Cooling (Coil Cooling) at that value.

NOTE: Secondary chilled water flow rate appears below the coil cooling capacity as the value in smaller font size

**Chilled Beam sensible cooling is the sum of Primary Air Cooling and Secondary Coil Cooling (334 + 550 = 884W)**

**Example:**

ACB60-1100.262 1200x300 1-way Active Chilled Beam 2-pipe <span style="color: red;">Step 1</span>																					
Primary Air	Supply Air	Static Pressure	<span style="color: red;">Step 2</span> <b>Secondary Water <math>\Delta T = 2K</math></b>							<b>Secondary Water <math>\Delta T = 3K</math></b>											
			Primary Air Cooling (W)							Secondary Air Cooling (W)					$Q_s$ (W)	$Q_s$ (W)					
			$\Delta T_{PA} (T_{Room} - T_{Primary Air})$							$\Delta T_{SCA} (T_{Room} - T_{Entering Secondary Water})$											
L/s	L/s	Pa	8	9	10	11	12	13	14	8	9	10	11	12	8	9	10	11	12		
<b>Configuration: 36-SN</b>																					
20.0	71	119	-194	-218	-243	-267	-291	-315	-340	-327	-388	-449	-510	-569	<b>-740</b>	-282	-325	-369	-428	-490	<b>-660</b>
										0.039	0.047	0.054	0.061	0.068		0.03*	0.03*	0.03*	0.034	0.039	
22.5	81	149	-218	-246	-273	-300	-328	-355	-382	-390	-460	-529	-596	-664	<b>-857</b>	-323	-373	-443	-514	-585	<b>-771</b>
										0.047	0.055	0.063	0.071	0.08		0.03*	0.03*	0.035	0.041	0.047	
<b>Configuration: 28-MN</b>																					
22.5	76	128	-218	-246	-273	-300	-328	-355	-382	-353	-418	-482	-546	-608	<b>-810</b>	-299	-345	-398	-464	-530	<b>-726</b>
										0.042	0.05	0.058	0.065	0.073		0.03*	0.03*	0.032	0.037	0.042	
<span style="color: red;">Step 3</span> 25.0	86	157	-243	-273	-300	-334	-364	-394	-425	-407	-479	-550	-620	-690	<b>-914</b>	-335	-391	-465	-538	-611	<b>-829</b>
										0.049	0.057	0.066	0.074	0.083		0.03*	0.031	0.037	0.043	0.049	
<b>Configuration: 32-MN</b>																					
22.5	69	84	-218	-246	-273	-300	-328	-355	-382	-282	-338	-393	-448	-502	<b>-721</b>	-253	-292	-331	-370	-423	<b>-659</b>
										0.034	0.041	0.047	0.054	0.06		0.03*	0.03*	0.03*	0.03*	0.034	
25.0	77	102	-243	-273	-303	-334	-364	-394	-425	-338	-401	-464	-525	-586	<b>-828</b>	-289	-334	-380	-443	-507	<b>-744</b>
										0.041	0.048	0.056	0.063	0.07		0.03*	0.03*	0.03*	0.035	0.041	
27.5	86	123	-267	-300	-334	-367	-400	-434	-467	-388	-458	-526	-594	-661	<b>-926</b>	-322	-372	-441	-512	-582	<b>-841</b>
										0.047	0.055	0.063	0.071	0.079		0.03*	0.03*	0.035	0.041	0.047	

Water flow value of 0.03\* = minimum allowed water flow rate for all ACB models

Quick Select Values

$Q_s$  value in bold font = Quick Select value based on Room Air—Primary Air  $\Delta T$  of 12°C & Room Air - Entering Secondary Water  $\Delta T$  of 10°C for the corresponding primary air quantity and secondary water design  $\Delta T$  of 2K or 3K

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## ACB60-1100.262 1200x300 1-way Active Chilled Beam 2-pipe

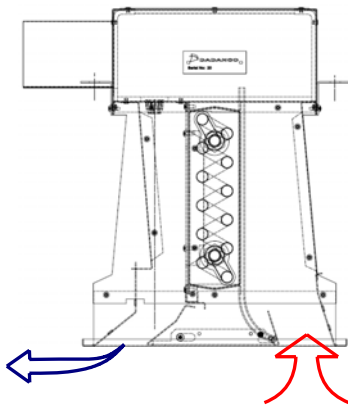
Primary Air	Supply Air	Static Pressure	Primary Air Cooling (W)							Secondary Water $\Delta T = 2K$					Secondary Water $\Delta T = 3K$											
			$\Delta T_{PA} (T_{Room} - T_{Primary Air})$							Secondary Air Cooling (W)					Secondary Air Cooling (W)											
			$\Delta T_{SCA} (T_{Room} - T_{Entering Secondary Water})$							Secondary Water Flow (L/s)					Secondary Water Flow (L/s)											
L/s	L/s	Pa	8	9	10	11	12	13	14	8	9	10	11	12	8	9	10	11	12	8	9	10	11	12		
<b>Configuration: 30-SN</b>																										
17.5	66	131	-170	-191	-212	-234	-255	-276	-297	-305	-363	-422	-479	-536	-677	-268	-309	-350	-398	-457	-605					
										0.037	0.044	0.051	0.057	0.064		0.03*	0.03*	0.03*	0.032	0.037						
20.0	77	169	-194	-218	-243	-267	-291	-315	-340	-379	-447	-515	-581	-647	-806	-316	-365	-430	-499	-569	-721					
										0.045	0.054	0.062	0.07	0.078		0.03*	0.03*	0.034	0.04	0.045						
<b>Configuration: 36-SN</b>																										
17.5	61	92	-170	-191	-212	-234	-255	-276	-297	-255	-306	-358	-409	-460	-613	-235	-271	-308	-344	-382	-563					
										0.03*	0.037	0.043	0.049	0.055		0.03*	0.03*	0.03*	0.03*	0.03*						
20.0	71	119	-194	-218	-243	-267	-291	-315	-340	-327	-388	-449	-510	-569	-740	-282	-325	-369	-428	-490	-660					
										0.039	0.047	0.054	0.061	0.068		0.03*	0.03*	0.03*	0.034	0.039						
22.5	81	149	-218	-246	-273	-300	-328	-355	-382	-390	-460	-529	-596	-664	-857	-323	-373	-443	-514	-585	-771					
										0.047	0.055	0.063	0.071	0.08		0.03*	0.03*	0.035	0.041	0.047						
<b>Configuration: 28-MN</b>																										
17.5	58	79	-170	-191	-212	-234	-255	-276	-297	-231	-269	-316	-363	-410	-571	-214	-247	-280	-313	-346	-535					
										0.03*	0.032	0.038	0.044	0.049		0.03*	0.03*	0.03*	0.03*	0.03*						
20.0	67	102	-194	-218	-243	-267	-291	-315	-340	-292	-349	-405	-461	-516	-696	-259	-299	-339	-381	-437	-630					
										0.035	0.042	0.049	0.055	0.062		0.03*	0.03*	0.03*	0.03*	0.035						
22.5	76	128	-218	-246	-273	-300	-328	-355	-382	-353	-418	-482	-546	-608	-810	-299	-345	-398	-464	-530	-726					
										0.042	0.05	0.058	0.065	0.073		0.03*	0.03*	0.032	0.037	0.042						
25.0	86	157	-243	-273	-303	-334	-364	-394	-425	-407	-479	-550	-620	-690	-914	-335	-391	-465	-538	-611	-829					
										0.049	0.057	0.066	0.074	0.083		0.03*	0.031	0.037	0.043	0.049						
<b>Configuration: 32-MN</b>																										
20.0	63	79	-194	-218	-243	-267	-291	-315	-340	-248	-298	-349	-399	-449	-640	-231	-266	-302	-337	-373	-593					
										0.03*	0.036	0.042	0.048	0.054		0.03*	0.03*	0.03*	0.03*	0.03*						
22.5	72	99	-218	-246	-273	-300	-328	-355	-382	-310	-369	-428	-486	-543	-756	-271	-313	-354	-405	-465	-682					
										0.037	0.044	0.051	0.058	0.065		0.03*	0.03*	0.03*	0.032	0.037						
25.0	80	122	-243	-273	-303	-334	-364	-394	-425	-365	-432	-497	-562	-626	-861	-307	-354	-412	-480	-547	-776					
										0.044	0.052	0.06	0.067	0.075		0.03*	0.03*	0.033	0.038	0.044						
27.5	89	146	-267	-300	-334	-367	-400	-434	-467	-414	-487	-559	-630	-700	-959	-340	-399	-473	-548	-622	-873					
										0.05	0.058	0.067	0.075	0.084		0.03*	0.032	0.038	0.044	0.05						
<b>Configuration: 35-MN</b>																										
22.5	69	84	-218	-246	-273	-300	-328	-355	-382	-282	-338	-393	-448	-502	-721	-253	-292	-331	-370	-423	-659					
										0.034	0.041	0.047	0.054	0.06		0.03*	0.03*	0.03*	0.03*	0.034						
25.0	77	102	-243	-273	-303	-334	-364	-394	-425	-338	-401	-464	-525	-586	-828	-289	-334	-380	-443	-507	-744					
										0.041	0.048	0.056	0.063	0.07		0.03*	0.03*	0.03*	0.035	0.041						
27.5	86	123	-267	-300	-334	-367	-400	-434	-467	-388	-458	-526	-594	-661	-926	-322	-372	-441	-512	-582	-841					
										0.047	0.055	0.063	0.071	0.079		0.03*	0.03*	0.035	0.041	0.047						
30.0	94	145	-291	-328	-364	-400	-437	-473	-509	-433	-509	-583	-656	-729	-1020	-352	-419	-497	-574	-650	-934					
										0.052	0.061	0.07	0.079	0.087		0.03*	0.034	0.04	0.046	0.052						
32.5	103	169	-315	-355	-394	-434	-473	-512	-552	-475	-555	-634	-713	-791	-1107	-381	-465	-548	-630	-712	-1021					
										0.057	0.067	0.076	0.085	0.095		0.03*	0.037	0.044	0.05	0.057						
<b>Configuration: 38-MN</b>																										
25.0	75	88	-243	-273	-303	-334	-364	-394	-425	-319	-380	-440	-499	-558	-804	-277	-320	-362	-417	-479	-726					
										0.038	0.046	0.053	0.06	0.067		0.03*	0.03*	0.03*	0.033	0.038						
27.5	83	105	-267	-300	-334	-367	-400	-434	-467	-370	-437	-503	-568	-633	-903	-310	-358	-418	-486	-554	-818					
										0.044	0.052	0.06	0.068	0.076		0.03*	0.03*	0.033	0.039	0.044						
30.0	92	124	-291	-328	-364	-400	-437	-473	-509	-415	-488	-560	-631	-701	-997	-340	-399	-474	-549	-622	-911					
										0.05	0.058	0.067	0.076	0.084		0.03*	0.032	0.038	0.044	0.05						
32.5	100	145	-315	-355	-394	-434	-473	-512	-552	-456	-534	-611	-687	-763	-1084	-367	-444	-525	-605	-684	-998					
										0.055	0.064	0.073	0.082	0.091		0.03*	0.036	0.042	0.048	0.055						
<b>Configuration: 41-MN</b>																										
25.0	74	76	-243	-273	-303	-334	-364	-394	-425	-310	-369	-428	-486	-543	-792	-271	-313	-354	-405	-464	-718					
										0.037	0.044	0.051	0.058	0.065		0.03*	0.03*	0.03*	0.032	0.037						
27.5	82	91	-267	-300	-334	-367	-400	-434	-467	-360	-426	-491	-555	-618	-891	-304	-350	-406	-473	-540	-806					
										0.043	0.051	0.059	0.066	0.074		0.03*	0.03*	0.032	0.038	0.043						
30.0	90	107	-291	-328	-364	-400	-437	-473	-509	-406	-477	-548	-618	-687	-985	-334	-389	-462	-536	-608	-899					
										0.049	0.057	0.066	0.074	0.082		0.03*	0.031	0.037	0.043	0.049						
32.5	99	125	-315	-355	-394	-434	-473	-512	-552	-447	-524	-600	-675	-750	-1073	-361	-435	-514	-593	-671	-987					
										0.054	0.063	0.072	0.081	0.09		0.03*	0.035	0.041	0.047	0.054						
35.0	107	144	-340	-382	-425	-467	-509	-552	-594	-485	-567	-648	-728	-807	-1157	-392	-477	-561	-645	-728	-1070					
										0.058	0.068	0.078	0.087	0.097		0.031	0.038	0.045	0.052	0.058						

## ACB60-1400.262 1500x300 1-way Active Chilled Beam 2-pipe

Primary Air	Supply Air	Static Pressure	Primary Air Cooling (W)							Secondary Water $\Delta T = 2K$					Secondary Water $\Delta T = 3K$							
										Secondary Air Cooling (W)					$Q_s$	Secondary Air Cooling (W)					$Q_s$	
			$\Delta T_{PA} (T_{Room} - T_{Primary Air})$							$\Delta T_{SCA} (T_{Room} - T_{Entering Secondary Water})$						$\Delta T_{SCA} (T_{Room} - T_{Entering Secondary Water})$						
L/s	L/s	Pa	8	9	10	11	12	13	14	8	9	10	11	12	(W)	8	9	10	11	12	(W)	
<b>Configuration: 48-SN</b>																						
22.5	77	86	-218	-246	-273	-300	-328	-355	-382	-343	-407	-470	-533	-594	-798	-293	-338	-386	-451	-515	-714	
										0.041	0.049	0.056	0.064	0.071		0.03*	0.03*	0.031	0.036	0.041		
25.0	87	105	-243	-273	-303	-334	-364	-394	-425	-415	-488	-560	-631	-701	-924	-340	-399	-474	-549	-623	-838	
										0.05	0.058	0.067	0.076	0.084		0.03*	0.032	0.038	0.044	0.05		
27.5	96	126	-267	-300	-334	-367	-400	-434	-467	-479	-560	-639	-718	-797	-1039	-385	-469	-553	-636	-718	-953	
										0.057	0.067	0.077	0.086	0.095		0.031	0.038	0.044	0.051	0.057		
30.0	106	149	-291	-328	-364	-400	-437	-473	-509	-536	-624	-711	-798	-885	-1148	-441	-533	-625	-715	-804	-1062	
										0.064	0.075	0.085	0.096	0.106		0.035	0.043	0.05	0.057	0.064		
<b>Configuration: 53-SN</b>																						
25.0	84	87	-243	-273	-303	-334	-364	-394	-425	-394	-465	-534	-602	-670	-898	-326	-377	-448	-520	-591	-812	
										0.047	0.056	0.064	0.072	0.08		0.03*	0.03*	0.036	0.042	0.047		
27.5	94	104	-267	-300	-334	-367	-400	-434	-467	-457	-535	-613	-689	-765	-1013	-368	-446	-526	-607	-686	-926	
										0.055	0.064	0.073	0.083	0.092		0.03*	0.036	0.042	0.048	0.055		
30.0	103	123	-291	-328	-364	-400	-437	-473	-509	-514	-599	-683	-767	-851	-1120	-419	-508	-597	-684	-771	-1034	
										0.062	0.072	0.082	0.092	0.102		0.034	0.041	0.048	0.055	0.062		
<b>Configuration: 41-MN</b>																						
27.5	87	91	-267	-300	-334	-367	-400	-434	-467	-392	-462	-531	-599	-666	-931	-325	-374	-445	-517	-588	-845	
										0.047	0.055	0.064	0.072	0.08		0.03*	0.03*	0.036	0.041	0.047		
30.0	95	107	-291	-328	-364	-400	-437	-473	-509	-449	-526	-602	-678	-752	-1039	-362	-437	-516	-595	-674	-953	
										0.054	0.063	0.072	0.081	0.09		0.03*	0.035	0.041	0.048	0.054		
32.5	104	125	-315	-355	-394	-434	-473	-512	-552	-501	-585	-668	-750	-831	-1141	-407	-494	-581	-667	-752	-1054	
										0.06	0.07	0.08	0.09	0.1		0.032	0.04	0.046	0.053	0.06		
<b>Configuration: 44-MN</b>																						
27.5	84	79	-267	-300	-334	-367	-400	-434	-467	-365	-431	-497	-562	-626	-897	-307	-354	-412	-480	-547	-812	
										0.044	0.052	0.06	0.067	0.075		0.03*	0.03*	0.033	0.038	0.044		
30.0	92	94	-291	-328	-364	-400	-437	-473	-509	-423	-496	-569	-641	-712	-1006	-345	-407	-483	-559	-634	-920	
										0.051	0.059	0.068	0.077	0.085		0.03*	0.032	0.039	0.045	0.051		
32.5	101	109	-315	-355	-394	-434	-473	-512	-552	-475	-556	-635	-713	-792	-1108	-382	-465	-549	-631	-713	-1022	
										0.057	0.067	0.076	0.085	0.095		0.03*	0.037	0.044	0.05	0.057		
35.0	109	126	-340	-382	-425	-467	-509	-552	-594	-523	-610	-695	-780	-865	-1204	-428	-519	-609	-698	-785	-1118	
										0.063	0.073	0.083	0.093	0.104		0.034	0.041	0.049	0.056	0.063		
<b>Configuration: 47-MN</b>																						
30.0	90	83	-291	-328	-364	-400	-437	-473	-509	-402	-473	-544	-613	-682	-981	-331	-385	-458	-531	-603	-895	
										0.048	0.057	0.065	0.073	0.082		0.03*	0.031	0.037	0.042	0.048		
32.5	99	96	-315	-355	-394	-434	-473	-512	-552	-455	-533	-610	-686	-761	-1083	-366	-443	-524	-604	-683	-997	
										0.055	0.064	0.073	0.082	0.091		0.03*	0.035	0.042	0.048	0.055		
35.0	107	111	-340	-382	-425	-467	-509	-552	-594	-503	-587	-670	-752	-834	-1179	-409	-496	-584	-670	-755	-1093	
										0.06	0.07	0.08	0.09	0.1		0.033	0.04	0.047	0.054	0.06		
37.5	115	127	-364	-409	-455	-500	-546	-591	-637	-548	-638	-726	-815	-903	-1272	-452	-546	-639	-731	-822	-1185	
										0.066	0.076	0.087	0.098	0.108		0.036	0.044	0.051	0.058	0.066		
40.0	124	143	-388	-437	-485	-534	-582	-631	-679	-589	-684	-779	-873	-967	-1361	-492	-592	-691	-788	-884	-1273	
										0.071	0.082	0.093	0.105	0.116		0.039	0.047	0.055	0.063	0.071		
<b>Configuration: 50-MN</b>																						
35.0	105	99	-340	-382	-425	-467	-509	-552	-594	-490	-573	-654	-735	-815	-1163	-396	-482	-568	-652	-736	-1077	
										0.059	0.069	0.078	0.088	0.098		0.032	0.039	0.045	0.052	0.059		
37.5	113	113	-364	-409	-455	-500	-546	-591	-637	-535	-623	-710	-796	-883	-1256	-439	-531	-623	-713	-802	-1169	
										0.064	0.075	0.085	0.095	0.106		0.035	0.042	0.05	0.057	0.064		
40.0	122	127	-388	-437	-485	-534	-582	-631	-679	-576	-670	-762	-855	-947	-1344	-480	-578	-675	-770	-865	-1257	
										0.069	0.08	0.091	0.102	0.113		0.038	0.046	0.054	0.062	0.069		
42.5	130	143	-412	-464	-516	-567	-619	-670	-722	-615	-713	-811	-909	-1008	-1430	-517	-621	-723	-823	-923	-1342	
										0.074	0.085	0.097	0.109	0.121		0.041	0.05	0.058	0.066	0.074		
45.0	138	159	-437	-491	-546	-600	-655	-710	-764	-651	-755	-858	-961	-1065	-1513	-553	-661	-768	-873	-977	-1423	
										0.078	0.09	0.103	0.115	0.128		0.044	0.053	0.061	0.07	0.078		
<b>Configuration: 53-MN</b>																						
37.5	113	101	-364	-409	-455	-500	-546	-591	-637	-529	-616	-702	-788	-874	-1248	-433	-525	-616	-705	-793	-1162	
										0.063	0.074	0.084	0.094	0.105		0.035	0.042	0.049	0.056	0.063		
40.0	121	114	-388	-437	-485	-534	-582	-631	-679	-570	-663	-755	-846	-938	-1337	-474	-571	-667	-762	-856	-1249	
										0.068	0.079	0.09	0.101	0.112		0.038	0.046	0.053	0.061	0.068		
42.5	129	128	-412	-464	-516	-567	-619	-670	-722	-610	-707	-804	-901	-999	-1423	-512	-615	-716	-816	-914	-1335	
										0.073	0.085	0.096	0.108	0.12		0.041	0.049	0.057	0.065	0.073		
45.0	138	143	-437	-491	-546	-600	-655	-710	-764	-646	-748	-851	-953	-1057	-1506	-548	-655	-761	-866	-969	-1416	
										0.077	0.09	0.102	0.114	0.127		0.044	0.052	0.061	0.069	0.077		

Water flow value of 0.03\* = minimum allowed water flow rate for all ACB models

NOTE: Higher or lower secondary coil capacities can be achieved for all ACB models for higher or lower secondary water flow rates and resulting changes in water  $\Delta T$ . For alternative or more detailed selections at different conditions, primary air quantities or secondary water flow rates; contact Dadanco for assistance.



# Product Information ACB60

1-Way Discharge Active Chilled Beam

## ACB60 2-Pipe Secondary Cooling Coil water pressure drop, kPa

Unit	Water Flow in L/s												
	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.11	0.12	0.13	0.14	0.15
ACB60-1100.262 (1200x300mm)	1.7	2.8	4.1	5.6	7.4	9.4	11.5	13.8	16.4	19.1	22.0	25.0	28.3
ACB60-1400.262 (1500x300mm)	2.0	3.3	4.9	6.7	8.8	11.1	13.7	16.5	19.6	22.8	26.3	30.0	33.9

## Acoustic Data

ACB60 Summary - August 2011											
	63	125	250	500	1K	2K	4K	8K	Guidance Lp		
									NR	dB(A)	
<b>1100mm coil length - 150mm spigot</b>	<b>Lw - Sound Power level (zero weighted) dB</b>										
Primary Air - L/s											
25		42	34	29	30	24	25	26	27	<b>34</b>	
30		42	36	32	32	26	25	26	31	<b>34</b>	
35		45	37	36	36	26	26	26	34	<b>35</b>	
<b>1400mm coil length - 150mm spigot</b>	<b>Lw - Sound Power level (zero weighted) dB</b>										
Primary Air - L/s											
30		39	39	36	32	26	25	25	26	<b>32</b>	
35		39	39	36	37	26	25	25	31	<b>34</b>	
40		39	39	38	37	30	25	26	31	<b>35</b>	
45		47	43	41	39	30	26	26	33	<b>38</b>	
Measured Reverberation Time (Sec)		0.77	0.93	1.15	1.15	1.19	1.11	0.65			

Date: 23rd June 2011

Room Dimensions: 8.72 x 3.92 x 2.7 (92.3m<sup>3</sup>)

Room Conditions: 23C, 42% RH, 1013 hPa

All measurements recorded in position "A" 1.2 m from both rear and side wall with microphone position 1.2m above floor level.

Sound Level Meter CEL 621C s/n 471171

Microphone CEL 251 s/n 877

Last calibration: 22nd June 2011

### DISCLAIMER

While every effort is made to ensure the details contained herein are kept up to date, in the interests of ongoing product development, Dadanco reserves the right to alter the information without notice



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