



GLOBAL STANDARD COOLER

Cool-Line

AR



RUGGED ENVIRONMENT COOLING SYSTEMS

PRODUCT INFORMATION

AKG Cool-Line is a standard line of products from the market leader in high performance aluminum cooling systems. AKG is best known for its world-wide presence, German engineering and extremely reliable product quality on the one hand and very competitive prices on the other hand.

The Cool-Line type series consist of different models for mobile and stationary applications and are available through our global specialist dealer network. This line of products embraces all-purpose complete cooling systems that comply with European or American Standards, is suited for normal or rugged environmental operating conditions, is powered by AC-, DC- or hydraulic-motor-driven fans and is also available with noise-optimized models.

All of AKG's solutions have been developed with state-of-the-art technology, produced in compliance with the highest quality standards and are comprehensively tested in the company's own research and test facility.

FEATURES OF THE AR/ARL SERIES:

- The coolers are equipped with anti-clogging fins
- High-Performance cooling assemblies
- AC-motor powered fan
- The heat is transferred from the medium to be cooled to the ambient air
- Cooler can be universally used in hydraulic oil, transmission oil, engine oil, lubricating oil and coolant circuits
- For the cooling of mineral oil, synthetic oil, biological oil as well as of HFA, HFB, HFC and HFD liquids and water with at least 50 per cent of antifreeze and anticorrosive additives (other media available)
- Can be exposed to operating pressures of up to 26 bar or 17 bar, depending on model

BENEFITS:

- Especially suited for rugged environments. Fin system prevents clogging and is easy to clean
- Highly flexible complete, ready-to-use cooling packages
- Compact and robust design, field-tested during many years of use in rugged real life conditions
- Largest and most comprehensive series of industrial coolers
- Best heat transfer results per given cooler size due to comprehensive research and development
- Highest quality due to professional engineering and in-house manufacturing
- Available from stock or at short notice
- As a standard, equipped with **AKG's** patented **double-life** hollow sections designed to increase cooler service life
- Noise-optimized models available (low-noise series)

AR/ARL-SERIES FEATURES/BENEFITS

- New AR rugged series coolers with non-louvered fin design provides the best HEAT TRANSFER per given cooler size in the industry.
- New AR rugged series coolers offer increased performance with lower pressure drop than current same size AKG THERMAL SYSTEMS ACD SERIES COOLERS.
- New ARL low noise series coolers offer slower fan speeds for reduced noise level & lower fan HP requirements.
- New AR/ARL rugged series coolers have proprietary R & D designed, engineered and tested internal and external fins unique to AKG THERMAL SYSTEM coolers.
- All AR/ARL series coolers are available with internal pressure BYPASS option.
- New AR/ARL rugged series coolers offer the largest, most comprehensive cooler size ranges with competitive pricing and deliveries from stock.

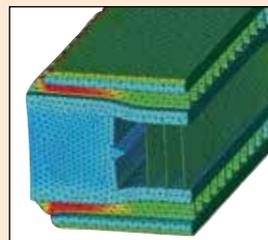
PATENTED FLEXIBLE AKG HOLLOW PROFILE



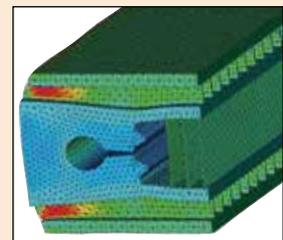
Cool-Line uses patented AKG hollow profiles to reduce local peak strains. This way the strength of heat exchangers is significantly increased and their service life time considerably prolonged.

AKG HOLLOW PROFILE FEATURES:

- **Reduced Strain:**
Strength calculations show that when using AKG hollow profiles maximum strain is reduced by a factor of 2
- **Prolonged Service Life Time:**
Extensive rig tests have shown that service life time increases by a factor ranging from 3 to 5

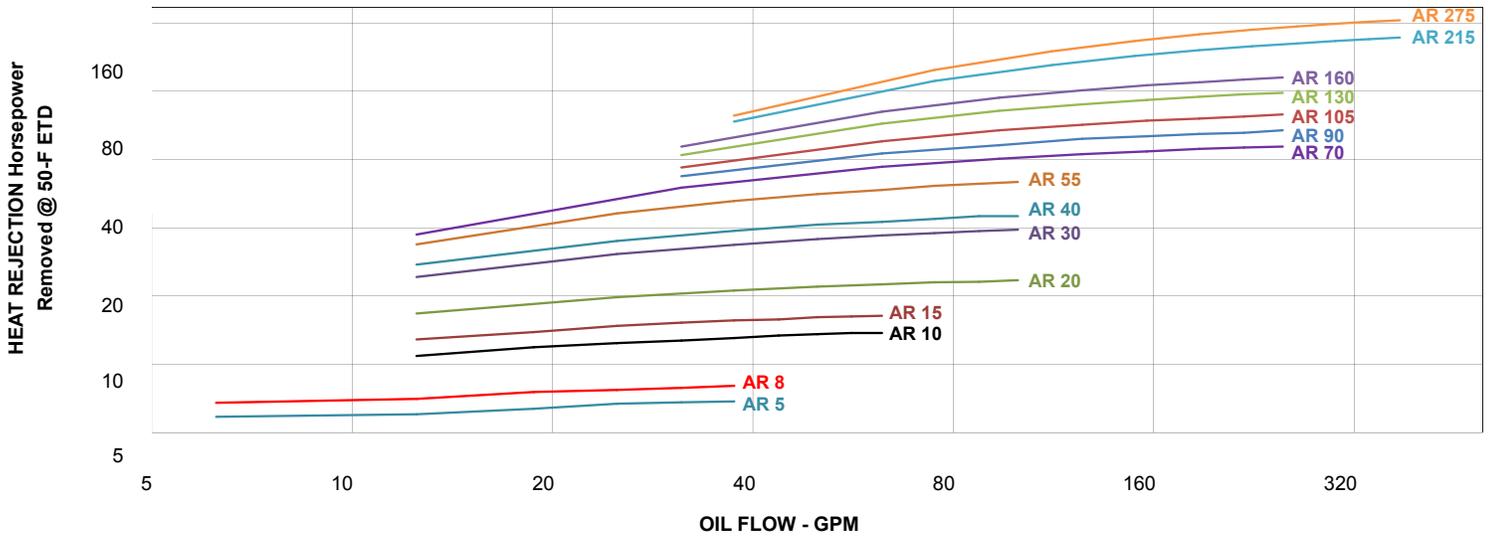


with standard profile



with hollow profile

STANDARD MODELS PERFORMANCE DATA (AR-SERIES)



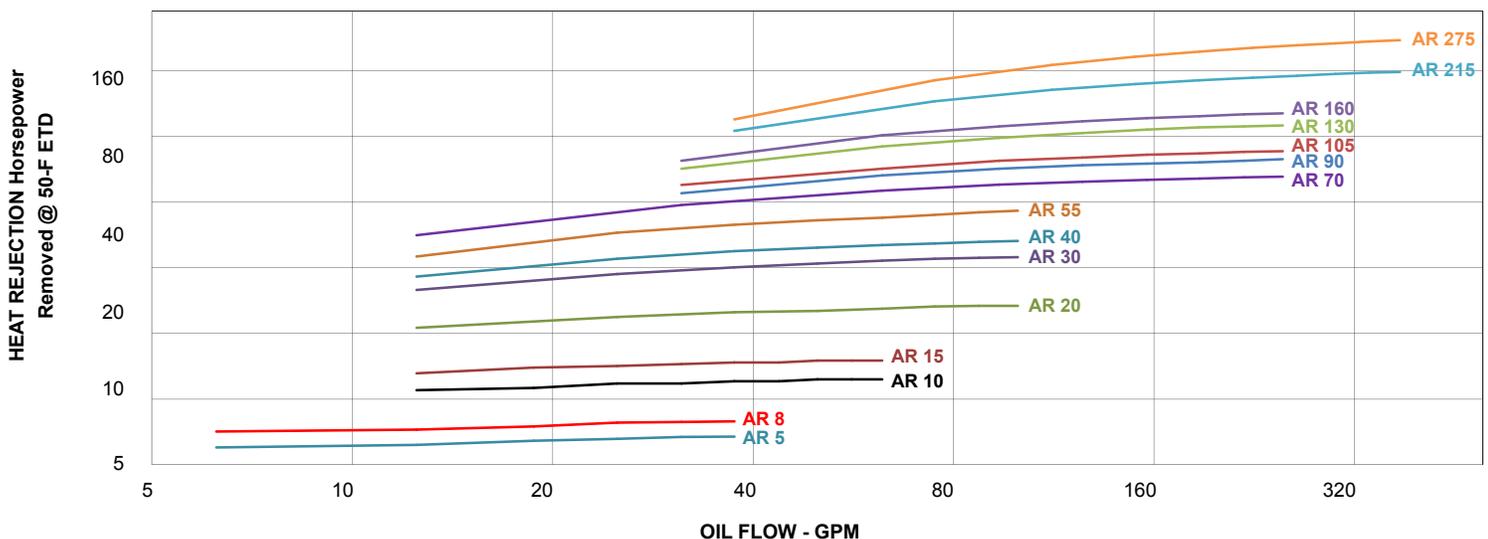
Specifications:

Maximum Working Pressure (AR5 through AR130)	377 PSI
Maximum Working Pressure (AR160 through AR275)	250 PSI
Maximum Working Temperature	250 °F

Materials:

Cooler	Aluminum
Shroud	Power Painted Steel
Fan Guard	Zinc Plated Steel
Fan Blade	Polypropylene Blades Aluminum Hub
Mounting Brackets	Powder Painted Steel

LOW NOISE MODELS PERFORMANCE DATA (ARL-SERIES)



AR/ARL SERIES TECHNICAL DATA

Model Size	HP RPM		Motor Frame		Voltage (3 Phase)	Hz	Full Load Amps 230 V		Approx. Noise Level (dB(A), 1m)		Working Pressure (psi)	Approx. Shipping Weight (lbs)
	AR	ARL	AR	ARL			AR	ARL	AR	ARL		
AR/ARL5	1/3 3425	1/4 1700	IEC 63	IEC 63	230/460 200/400	60 50	1.1	1.0	77	65	377	37
AR/ARL8	1/3 3425	1/4 1700	IEC 63	IEC 63	230/460 200/400	60 50	1.1	1.0	77	65	377	43
AR/ARL10	1/2 3425	1/3 1700	IEC 71	IEC 71	230/460 200/400	60 50	1.6	1.4	81	69	377	46
AR/ARL15	1/2 3425	1/3 1700	IEC 71	IEC 71	230/460 200/400	60 50	1.6	1.4	86	73	377	57
AR/ARL20	1/2 1700	1/3 1140	IEC 71	IEC 80	230/460 200/400	60 50	1.8	1.3	83	74	377	67
AR/ARL30	1 1725	1/2 1140	NEMA 56C	NEMA 56C	208-230/460	60*	3.8	2.4	86	75	377	137
AR/ARL40	1 1725	1/2 1140	NEMA 56C	NEMA 56C	208-230/460	60*	3.8	2.4	88	79	377	169
AR/ARL55	2 1725	3/4 1140	NEMA 56C	NEMA 56C	208-230/460	60*	6.2	3	92	83	377	205
AR/ARL70	2 1725	3/4 1140	NEMA 56C	NEMA 56C	208-230/460	60*	6.2	3	92	83	377	240
AR/ARL90	3 1725	1 1140	NEMA 56C	NEMA 56C	208-230/460	60*	8.6	4	94	85	377	277
AR/ARL105	3 1725	1 1140	NEMA 56C	NEMA 56C	208-230/460	60*	8.6	4	95	86	377	290
AR/ARL130	5 1740	1.5 1140	NEMA 184TC	NEMA 184TC	208-230/460	60*	13.2	5.7	97	88	377	414
AR/ARL160	7.5 1740	2 1140	NEMA 213TC	NEMA 213TC	208-230/460	60*	19.6	7.4	98	89	250	560
AR/ARL215	10 1740	5 1140	NEMA 215TC	NEMA 213TC	208-230/460	60*	26	17.6	101	92	250	640
AR/ARL275	10 1740	5 1140	NEMA 215TC	NEMA 213TC	208-230/460	60*	26	17.6	101	92	250	710

All data based at nominal speed

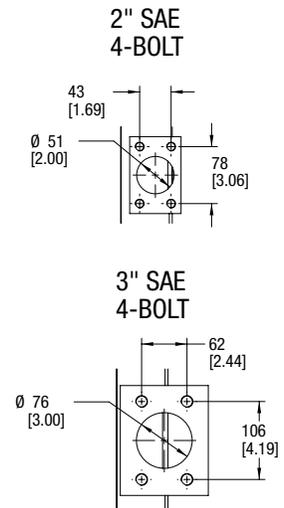
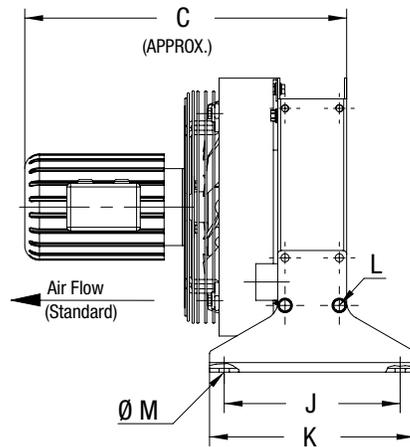
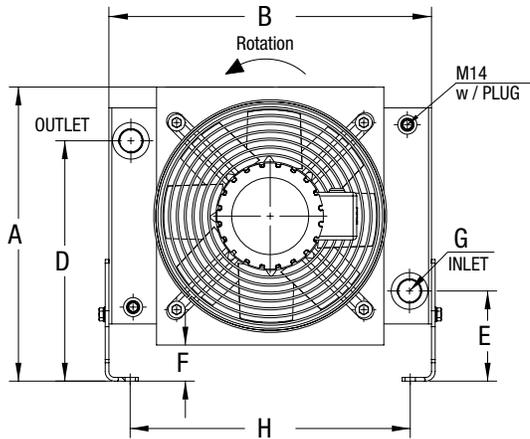
Electric Motors are TEFC and are not thermally protected.
 Actual rating may vary with motor brand. Check motor nameplate for actual rating.
 Motor RPM is reduced by 1/6 for 50 Hz service.
 * - 3 Phase motors available in 50 Hz.

AR/ARL SERIES DIMENSIONS

Model Size	A	B	C (Approx.)	D	E	F	G	H	J	K	L	M
AR/ARL5	13.74	13.78	12.56	11.38	4.37	1.97	#12 SAE 1 1/16-12 UN-2B	11.93	7.09	8.66	M6-1 X12MM Bolt (4 PL)	Ø 0.55
AR/ARL8	14.25	13.78	13.27	11.85	4.84	2.48	#12 SAE 1 1/16-12 UN-2B	11.93	7.09	8.66		Ø 0.55
AR/ARL10	15.91	15.75	14.50	12.54	4.87	1.50	#16 SAE 1 5/16-12 UN-2B	13.86	7.09	8.66	M8-1.25 X16MM Bolt (4 PL)	Ø 0.55
AR/ARL15	15.91	16.54	16.00	12.15	5.26	1.50	#16 SAE 1 5/16-12 UN-2B	14.65				Ø 0.55
AR/ARL20	19.6	21.65	15.50	16.24	4.87	1.50	#20 SAE 1 5/8-12 UN-2B	19.76				Ø 0.55
AR/ARL30	24.03	25.59	16.75	20.63	4.88	1.50	#20 SAE 1 5/8-12 UN-2B	23.70				Ø 0.55
AR/ARL40	24.03	26.38	18.00	17.68	7.84	1.50	#20 SAE 1 5/8-12 UN-2B	24.49	10.24	11.81	M10-1.5 X20MM Bolt (8 PL)	Ø 0.55
AR/ARL55	25.89	30.31	19.50	19.50	7.84	1.50	#20 SAE 1 5/8-12 UN-2B	28.32	10.24	11.81		Ø 0.55
AR/ARL70	30.19	36.22	21.80	23.00	10.69	1.50	2" SAE 4-Bolt FLANGE	34.22	21.10	22.64	M12-1.75 X25MM Bolt (8 PL)	Ø 0.55
AR/ARL90	30.19	37.01	23.30	21.00	10.69	1.50		35.01	21.10	22.64		Ø 0.55
AR/ARL105	33.26	38.98	23.40	24.07	10.69	1.50		36.98	21.10	22.64		Ø 0.55
AR/ARL130	37.56	40.94	25.10	29.27	9.80	1.50		39.06	21.10	22.64		Ø 0.55
AR/ARL160	38.40	43.62	29.50	31.27	9.94	2.00		40.17	14.72	17.72		Ø 0.75
AR/ARL215	46.96	49.49	30.80	36.03	12.73	2.00	3" SAE 4-Bolt FLANGE	48.22	15.70	18.70	3/4-10 x 1.75 Bolt (8 PL)	Ø 0.75
AR/ARL275	59.76	53.68	30.70	43.62	17.56	2.00		50.34	17.67	20.67		Ø 0.75

All dimensions in inch

COOLER DIMENSIONS A/ARL



SELECTION PROCEDURES

The performance curves are based on the following:

- 50 SUS Oil
- 50 °F Entering Temperature Difference (ETD)

If your application conditions are different, use the following selection procedure:

STEP 1. DETERMINE THE HEAT LOAD

In most cases you can use 1/3 of the input horsepower.

Example: 30 HP Power Unit = 10 HP Heat Load

STEP 2. DETERMINE THE ACTUAL ETD DESIRED

Entering **OIL** Temperature - Entering **AIR** Temperature = **ETD**

The entering oil temperature is the highest desired oil temperature. The entering air temperature is the highest anticipated ambient air temperature, plus any pre-heating of the air prior to its entering the cooler.

STEP 3. CALCULATE THE ADJUSTED BTU/HR FOR SELECTION

$$\text{Horsepower} \quad 50 \quad \text{Horsepower For}$$

$$\text{Heat Load} \quad \times \frac{\text{Desired ETD}}{\text{Use With}} = \text{Selection Chart}$$

STEP 4. SELECT THE MODEL FROM THE CURVES

Read up from the GPM to the required heat rejection. Select any model on, or above this point.

ORDERING INFORMATION

SERIES CODE: MODEL SIZE:

MOTOR CODE:

BYPASS DATA:

CUSTOM FEATURE CODE:

SERIES:

AR = Standard, ARL = Low Noise

MODEL SIZE:

Selected

MOTOR CODE:

0 = No Motor, C = Core Only, 1 = Single Phase, 3 = Three Phase, 575 = 575 Volt

BYPASS DATA:

BPNV = Bypass No Valve, BP25 = 25PSI Internal Bypass, BP30 = 30PSI Internal Bypass, BP60 = 60PSI Internal Bypass, BP65 = 65PSI Internal Bypass,

CUSTOM FEATURE CODE:

B = Blowing Fan, AD = SAE to NPT Adaptors, H = Heresite Coating Core, F = Foam Filter

ORDER EXAMPLE:

Heat Exchanger, 90 HP; Suction Fan, 3 Phase; 60PSI Internal Bypass

AR90-3-BP60



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AKG – A STRONG GLOBALLY INTEGRATED GROUP OF COMPANIES

AKG is a globally leading supplier of high-performance coolers and heat exchangers as well as customised system solutions that comply with the highest quality standards.

On a world-wide scale 2,500 employees work at 11 manufacturing facilities located in Germany, France, Latvia, the U.S.A., China, Brasil and India. Together with a number of additional oversea sales companies they are on duty around the clock.

Your AKG-Partner



The longstanding and competent partnership with global OEM customers from 22 lines of business such as construction machinery, compressed-air systems, agricultural and forestry machines, vehicle construction and many other fields of application give fresh and innovative impetus to the mobile and industrial standard type series.

AKG operates one of the world's largest research, development, measurement and validation centres for cooling solutions and customised applications.

AKG's heat exchangers have stood for innovative solutions as well as highest engineering and manufacturing competence for more than 100 years.

Aluminum Coolers – Made by AKG
DIN EN ISO 9001 : 2000