



**The**  
**WATER & SOLAR COMPANY**  
**WATER & ENERGY SYSTEMS**

# KATALOX LIGHT ADVANCED FILTRATION MEDIA



# Catalogue

# Product Features

## Filtration of

- Less than 3 micron
- Suspended solids
- Sediments
- Turbidity
- Organics
- Color
- Odor

## Removal of

- Iron
- Manganese
- Hydrogen Sulfide
- Arsenic
- Radium
- Heavy Metals
- Radionuclides

# Advantages

- High content MnO<sub>2</sub> coating (10%)
- Very High Surface Area
- Contains NO Crystalline Silica
- Light Weight - providing significant savings on backwash water
- Higher Filtration rates
- Filtration of sand, sediment and suspended solids, down to 3 micron
- High efficiency removal capacity of Iron, Manganese and Hydrogen sulfide
- Effective reduction of Arsenic, Zinc, Copper, Lead, Radium, Uranium, radionuclides and other heavy metals
- Media replacement every 7 - 10 years
- No disinfection by-product
- No mandatory KMnO<sub>4</sub>, chlorine or chlorine dioxide dosing
- Low operational costs
- Unique product, unmatched by our competitors



## KATALOX LIGHT®

is a new brand of revolutionary advanced filtration media completely developed in Germany. It's composition simply makes it

outstanding against the contemporary filter media available in water treatment industries, like sand, BIRM, Greensand Plus, Manganese Greensand etc.

**KATALOX LIGHT® is manufactured in Germany.**

### **KATALOX LIGHT®: The Ultimate Filtration Solution**

With its unique MnO coating technique on ZEOSORB®, KATALOX LIGHT® is engineered to deliver unparalleled performance. It is lightweight, has a higher filtration surface, a longer service life, and is more reliable compared to other granular filter media. KATALOX LIGHT® boasts a filtration capacity of up to 3 µm, making it the perfect choice for all your filtration needs.

**KATALOX LIGHT® has become a popular choice for a variety of applications around the world, including residential, commercial, industrial, and municipal systems. This innovative filtration system is capable of removing impurities, odors, and colors from water. It is also effective at removing Iron, Manganese, Hydrogen sulfide, Arsenic, Zinc, Copper, Lead, Radium, Uranium, radionuclides, and heavy metals.**

**KATALOX LIGHT® is Certified to NSF/ANSI-61 standard for drinking water applications and has met the ANSI/NSF 372 Lead free compliance.**

## Advanced use

### Enhanced Contaminant Removal with KATALOX LIGHT® Surface Coated with MnO<sub>2</sub>

KATALOX LIGHT® offers a distinct advantage over similar products available in the market due to its high concentration coating of MnO<sub>2</sub> on the surface (10%). This results in more effective oxidation and co-precipitation of contaminants. To remove very high levels of contaminants, it's recommended to use H<sub>2</sub>O<sub>2</sub> as an oxidizer. This will provide an accelerated catalytic oxidation on the media's surface. If needed, conventional oxidizing agents like chlorine or potassium permanganate can also be used.

### KATALOX LIGHT® System for Heavy Metals Removal

KATALOX LIGHT® is a highly effective solution for removing arsenic, radium, and uranium, but it requires iron in the water. This system features a unique iron dosing technology that offers several benefits over traditional adsorbent media for heavy metal removal.

## Standard Packaging

**1 ft<sup>3</sup> bags (28 Liters);**

**Mass: 30 kg (66 lb) 40 bags on a Pallet**

**16 Pallets in a container**



# The Future



## **The Future of Water Treatment: More Advanced Products to Tackle Complex Challenges Ahead**

**As we look ahead, the future of water treatment poses increasingly difficult challenges, and we must rise to meet them with more advanced and resilient products.**

**In Watch Water®'s vision, KATALOX LIGHT® can be addressed for advanced concepts like Water Reuse, Controlled Adsorption of Arsenic and Heavy Metals, advanced Membrane pre-treatment, Zero-Discharge Cooling tower etc.**

**Watch Water® KATALOX LIGHT® systems offer a new technology with advanced catalytic filtration available in water treatment industry. All systems have been engineered keeping both professionals and consumers in mind. Systems are available with different models and customized for manual back-wash without using electricity or it can be made fully-automatic. System can be used in a variety of applications including residential, commercial and any process water applications for food and beverage industry.**

**Standard systems are designed with a filtration velocity of 20 m/h (8.2 gpm/ft<sup>2</sup>) to provide a good filtration. This value may differ for advanced application like Arsenic, Radium, Uranium and other**

Heavy Metal removal where co-precipitation process requires higher contact time thus lower filtration velocity. Running the system at higher velocity may compromise the filtration performance.

KL System with simple Manual Control



KL System with fully Automatic Control



Parallel configuration for higher flow rates

**Example:**  
2 parallel KL 1465-Mn would have a total flow of  $2 \times 1800$  lph = 3600 lph (15.9 gpm)



Virtually there is no flow rate limitations for KATALOX LIGHT<sup>®</sup> systems as KATALOX LIGHT<sup>®</sup> units can be configured in parallel to address industrial high flow requirements.



# Standard Pressure Vessel Listing for Katalox Light® Systems (Manual/Automatic)

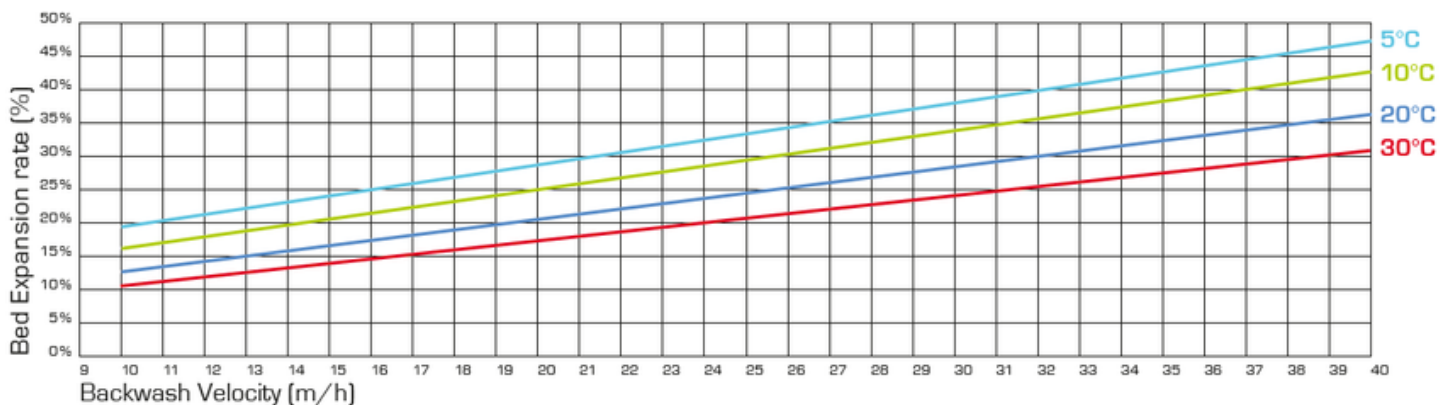
Pressure Vessel			KL Media Amount				Service Flow Rate				Back wash Flow Rate	
Vessel Mode	Tank Volume	Free board	Volume			Bed Height	Standard		Maximum			
	(liters)	(%)	(%)	(liters)	(ft³)	(mm)	(m³/h)	(gpm)	(m³/h)	(gpm)	(m³/h)	(gpm)
10x44	49.0	40	55	28.0	1.0	580	0.5	2.20	0.6	2.64	1.40	6.2
13x54	105.7	40	55	56.0	2.0	740	1.0	4.40	1.2	5.28	2.39	10.5
14x65	148.0	40	55	84.0	3.0	897	1.5	6.60	1.8	7.96	3.63	16.0
18x65	257.0	40	55	140.0	5.0	940	2.5	11.00	3.0	13.20	4.59	20.2
21x60	310.0	40	55	168.0	6.0	834	3.0	13.21	3.6	15.85	6.25	27.6
24x69	450.0	40	55	252.0	9.0	926	4.5	19.81	5.4	23.77	8.84	39.0
30x78	710.0	40	55	392.0	14.0	935	7.0	30.82	8.4	36.98	12.76	56.3
36x78	1020.0	40	55	560.0	20.0	932	10.0	44.02	12.0	52.83	18.37	81.0
42x78	1360.0	40	55	756.0	27.0	913	13.5	59.44	16.2	71.32	25.01	110.3
48x82	1840.0	40	55	1008.0	36.0	946	18.0	79.25	21.6	95.10	32.67	144.0

**Note:** • This is standard system parameter by considering ideal situation. It might vary depending on inlet parameters.

Consider to design system with standard flow rate. At higher flow rate filtration quality might be compromised.

5 % gravel has been considered in above system parameters. If not, then consider 60% media volume.

## Backwash Velocity (m/h) vs. Bed Expansion (%)



# Physical Properties

Appearance		Granular black beads
Odor		none
Mesh size	US	14 x 30
	SI	0.6 - 1.4 mm
Uniformity Coefficient		≤ 1.75
Bulk density	US	66 lb / ft <sup>3</sup>
	SI	1060 kg / m <sup>3</sup>
Moisture Content		< 0.5% as shipped
Filtration		< 3 micron
	for Fe <sup>2+</sup> alone	3000 mg / l
		85000 mg / ft <sup>3</sup> (aprx)
Loading Capacity	for Mn <sup>2+</sup> alone	1500 mg / l
		42500 mg / ft <sup>3</sup> (aprx)
	for H <sub>2</sub> S alone	500 mg / l
		14000 mg / ft <sup>3</sup> (aprx)



## Regeneration / Dosing

for 1.0 mg/l of

	Fe <sup>2+</sup>	Mn <sup>2+</sup>	H <sub>2</sub> S
H <sub>2</sub> O <sub>2</sub>	0.9 mg/l	1.8 mg/l	4.5 mg/l
KMnO <sub>4</sub> /Cl	1.0 mg/l	2.0 mg/l	5.0 mg/l

\* Optional: Only if the water doesn't have sufficient ORP (Oxidation Reduction Potential) to oxidize the contaminants. OXYDES-P helps to keep the media surface clean and could be used during backwash.

## Composition of Katalox Light®

Compounds	Typical value	Specifications
ZEOSORB (Naturally Mined)	85 %	> 85 %
Manganese dioxide	10 %	> 9.5 %
Hydrated Lime	5 %	< 5 %

**\*\* Note: Starred parameters could be more or less in some cases depending on inlet parameters.**

## Recommended System Operating Conditions

Inlet water pH		5.8 - 10.5
Freeboard		40 %
Minimal Bed Depth	US	29.5 inches
	SI	75 cm
Optimal Bed Depth	US	47 inches
	SI	120 cm
Service flow	US	4 - 8 gpm/ ft <sup>2</sup>
	SI	10 - 20 m/h
Backwash velocity**	US	10 - 12 gpm/ ft <sup>2</sup>
	SI	25 - 30 m/h
Backwash time**		10 - 15 minutes
Rinse time**		2 - 3 minutes

**Warning:** Do NOT exchange pressure vessel media from one pressure vessel to another. Reason for inadequate sanitation during the exchange of media. Wet media will absorb nitrogen and oxygen in the air which will immediately kick off the bacteria growth. Biofouling on surface of media and other contaminants are present during the exchange. Media is designed only for iron manganese, hydrogen sulfide and other heavy metals. Media containing biofouling cannot be reused as it is harmful for drinking water. Replacing new media is highly suggested.





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