iSEMcon®
ACOUSTICS & VIBRATION DIVISION

Acoustic Measurement Products

OPS-35 Outdoor Protection System

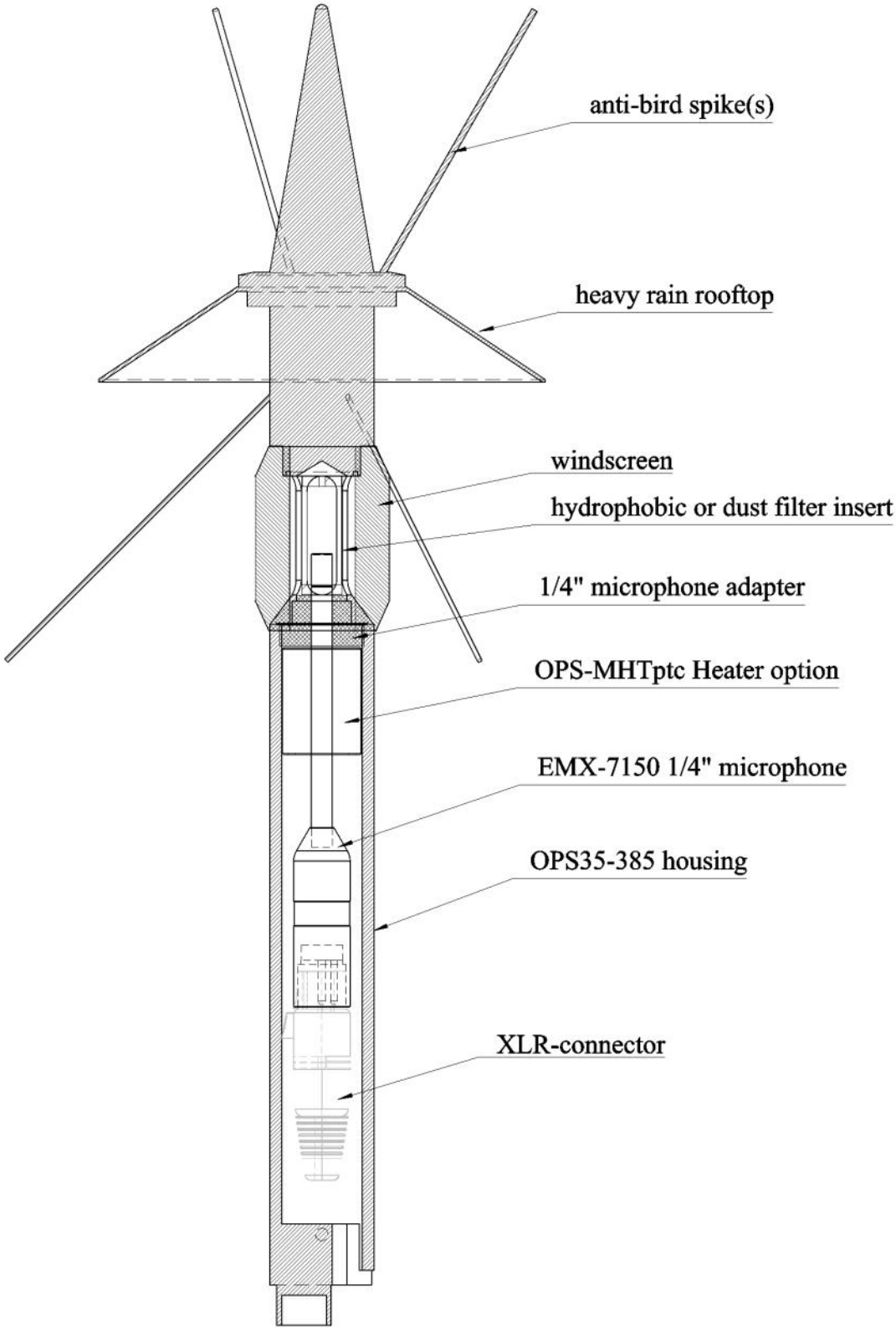
OPS-35
Designed and built to protect measurement microphones

Performing outdoor noise measurements can be very stressful for sensitive microphones and associated equipment while being exposed to all types of weather conditions.

ACOUSTIC MEASUREMENT PRODUCTS

INDEX

OPS-35 full featured



OPS-35 KITS & OPTIONS

OPS35-285/385 Base kit

The OPS 35 system is designed to be used with a large variety of microphones in the nominal mic diameter range of 1/4“ to 1/2“ as well as different mic lengths.

It is available in two standard lengths; 285 mm for use with iSEMcon’s EMM-7101 or 385 mm for use with iSEMcon’s EMX-7150 among other 3rd party microphones.

Not the right length? The housing length can be lengthened by adding one or more extensions.

FEATURES

- Adaptive design for 1/4“ and 1/2“ microphones other diameters upon request.
- All modular length
- Microphone protection in any weather
- Build-in rain and drip gap
- Optional roof top
- Flexible mounting options from standard tripod connector
- Removable top for microphone calibration
- Durable microphone holding system
- Wind noise reduction
- Calibration file available for download (page 21)
- Optional microphone heater
- Optional dust & hydrophobic filters

PHYSICAL	
Name	**Description**
Diameter	35mm (1,38 in) - Body
	50mm (2 in) - Windscreen
Height	285mm—OPS35-285
	385mm—OPS35-385
Weight	170g (6 oz) —OPS35-285
	220g (7,8 oz) —OPS35-385
Mounting	3/8—16 & 5/8- 27 Tripod
Material	Polyoxymethylene (POM)
Protection	IP54 vertical , semi permanent use

Ordering information :

Order No.	Name
50000	OPS35-385
50001	OPS35-285

Please note: one standard microphone adapter is included at no additional cost. Selection can be made during ordering process. Custom size adapters will require a surcharge.

OPS-35 ROOF TOP

The OPS-RT150 is the ideal option when heavy rain is likely. The idea is to prevent the foam windscreen from getting saturated.

A soaked windscreen has a different frequency response behavior compared to a dry one. iSEMcon wants measurement results as accurate as possible even under heavy rain conditions.

The Roof Top comes with anti-bird spikes packaged separately but not inserted. These can be installed by the customer if needed.

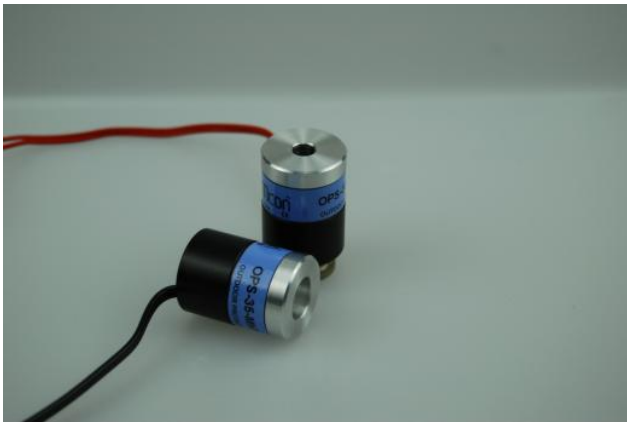
Roof top Diameter 150 mm

The fabric used is water tight but acoustically t ransparent as far as possible (not rubber coated). The fibers become water tight upon getting wet (ref. tent cloth). It can be removed for cleaning, replacement and/or impregnation.

Ordering information :

Order No.	Name
500040	OPS35-RT150

OPS35 Heater

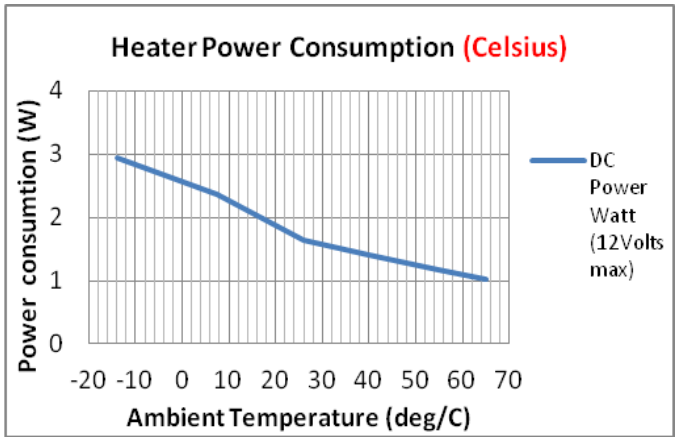


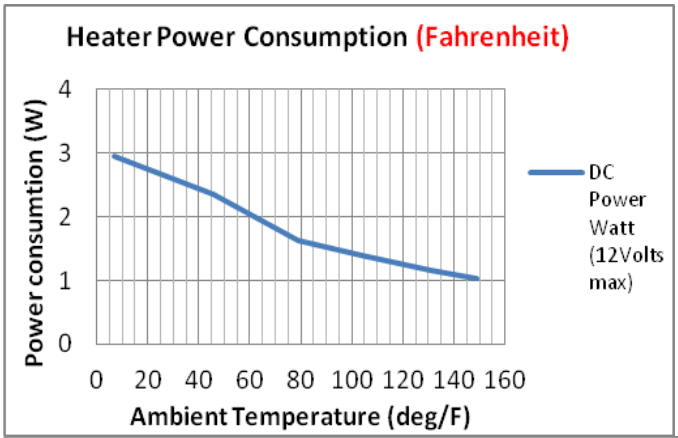
The OPS35 heater is an easy to use as well as economical way to protect a microphone diaphragm from condensing water. Condensation changes frequency response behavior while adding weight to the microphone diaphragm. The use of a chemical type dehumidifier is limited in time of use. Such a dehumidifier requires monitoring as well as drying if saturated from humidity.

The heater is 100% reliable and is maintenance free.

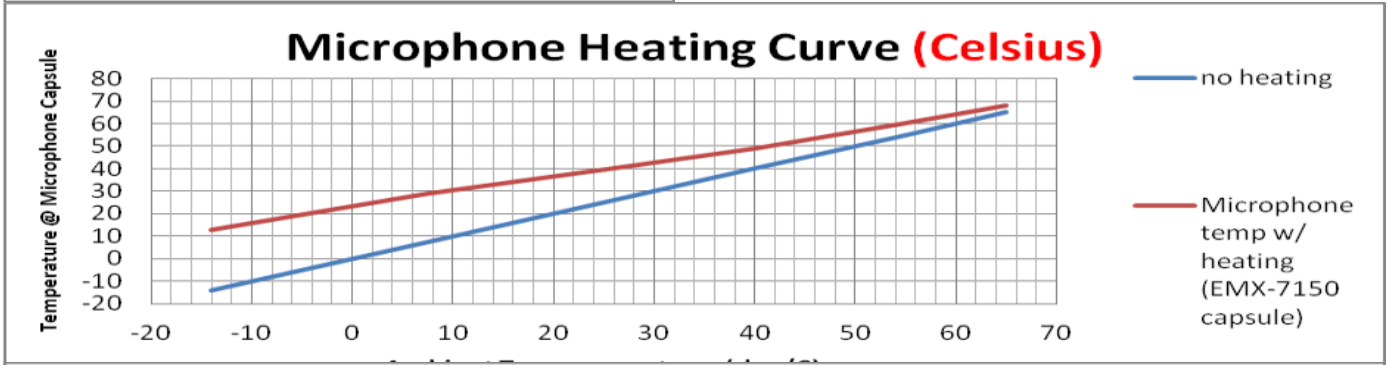
The OPS heater uses a special heater element which is fail safe. The colder it is, the more heat the OPS35-MHTptc adds. It will not add heat at high temperatures and overheating is not possible.

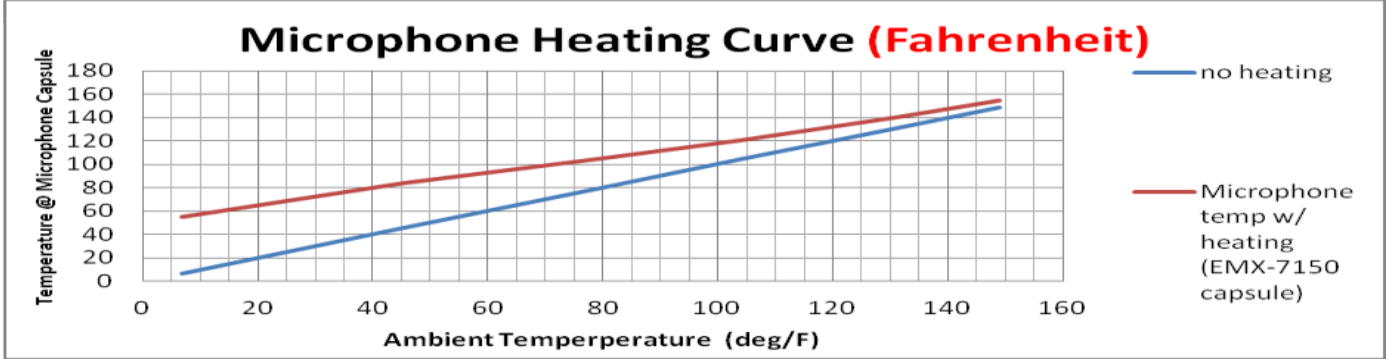
The following graphs show you the heater performance characteristics. Temperatures have been measured at the mic capsule position (acoustical port) of an installed microphone (1/4" type).
For comparison the "no heating" graph has been added as well. It shows the mic capsule temperature following the ambient temperature 1:1.
The red graph shows the mic capsule temp with the heater installed and powered from 12Vdc. **Do not** power from 12V**ac** due to possible crosstalk (hum) with microphone installed or microphone cable used.





Data	
Name	**Description**
Power consumption	12Vdc, 3 Watts max (250 mA) self regulated PTC heater.
Connection	Open cable ends, 30cm leads
Diameter	26.5 mm (1,08 in)
Height	36 mm (1.42 in)
Weight	40 g (1,. oz)
Mounting	M4 Screw clamp. Metal screw with Nylon insert.
Material	Polyoxymethylene (POM) , Aluminum





OPS-35 FILTER

OPS filters are being used to improve and to add additional protection when required.
This is a dust filter as well as combo filter hydrophobic (water repellent).
The hydrophobic filter is recommended for rain (light, heavy or extended periods).

The filters will be inserted in the acoustic coupler.

Features:

- Diameter 0,55“ (14mm)
- Length 1,6“ (40mm)
- Color: transparent
- Material: PVC/ woven Nylon (Dust filter)
- Material: PVC/ woven PolypropyleneTeflon (Hydrophobic Filter)
- Temperature: –20 to +65°C (-4 to +149°F)

Ordering information :

Order No.	Name
500050	OPS35-FLT100-1/4
500051	OPS35-FLT100-1/2
500052	OPS35-FLTdwr-1/4
500053	OPS35-FLTdwr-1/2

Note: dwr – durable water repellent

OPS35-100 Extension

The OPS35-100 Extension can be used to extend the OPS35 housing in 100mm increments.

Ordering information :

Order No.	Name
500010	OPS35-100

OPS35-ADxx Microphone Adapters

A unique feature of the OPS microphone protection system is the range of measurement microphones that can be installed. It does not matter if it is an iSEMcon EMM-7101 mic, EMX-7150 mic or a third party microphone having an acoustic frontend in the range ¼" to ½" (7 mm…13.2 mm). Installation is easy when using the right size microphone adapter and adjustment tool.

The OPS35 can deal with multiple microphone sizes and provide maximum protection. The OPS-35 kit comes with one adapter included. Other sizes of adapters are available for purchase.

Ordering information :

Order No.	Name
500011	OPS35-AD1/4
500012	OPS35-AD1/2-IMP (12,7mm)
500013	OPS35-AD1/2-IEC (13,2mm)
500019	OPS35-ADcust

Note: ADcust – please contact iSEMcon before ordering (sales@isemcon.com)

OPS-35 Service Kits & Replacement parts

There are a few parts that probably will need to be replaced or serviced over time.

These parts could be O-rings, windscreens and the Roof Top cover.

Ordering information :

Order No.	Name
500020	OPS35-WS-01 (windscreen)
500025	OPS35-RTC (Roof Top Cover)
500031	OPS35-SKIT1 (O-rings)
500032	OPS35-SKIT2 (screw & keys assortment)

INSTALL

OPS-35 Install basics

Installation overview.

Screw body with O-ring, install and connect microphone cable.

Add Microphone adapter from top or bottom of the microphone.

Do not clamp adapter with the clamp screw right now.

Bring the microphone adapter and the OPS adjustment tool together so the adjustment tool sits on the adapter (adapter rim slides into the cap).

Hold the adapter and cap with one hand and slide in the microphone to the internal cap end. Clamp the two screws with the hexagon key.

Please note that microphone bodies can be made from thin metal tubing.

Tighten the screw gently.

The screws come with a nylon cap for smooth clamping and provide protection to your microphone body.

Lift off the adjustment tool and insert the adapter and mic in the OPS35 body. The microphone is installed in the correct position now.

The general use calibration files made available for download are valid for this position only (page 21).

Insert the back cap (OPS-base plate) and tighten the 2 countersunk screws.

Mount the Acoustic coupler using the obligatory O-ring.

Add the windscreen and screw on the weather tip.

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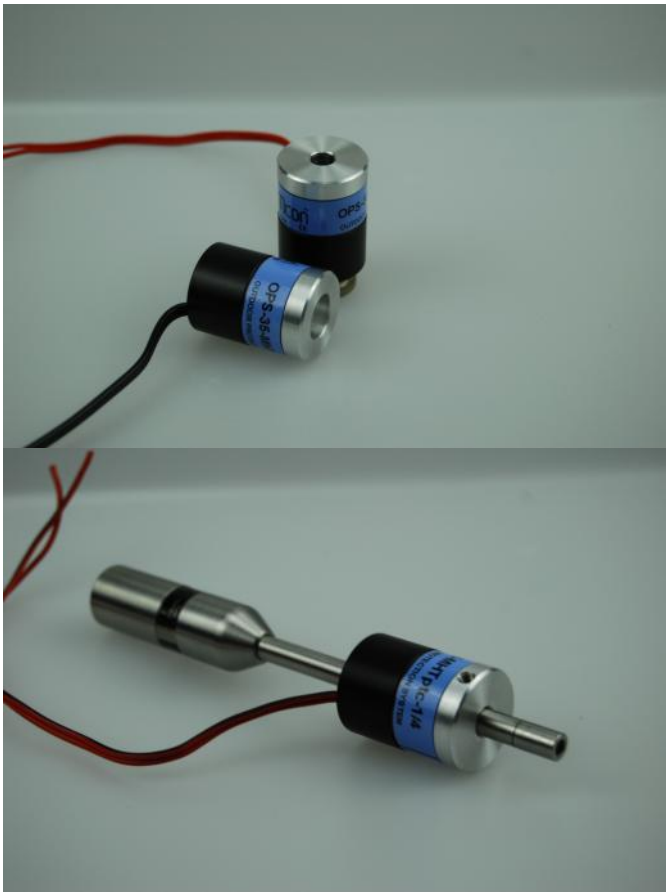
Done! Mount the OPS35 on a tripod, microphone stand or holder of your preference.

OPS-35 Heater install

Please choose the right size microphone heater for your microphone.
The heater has to be attached before the OPS35 microphone adapter can be added. The heater sits



right under the microphone adapter. Depending on microphone body and/or size you will have to slide the heater on from the top (acoustic frontend) or bottom (connector end).

Add the right size microphone adapter next.

From that point you can proceed with the install process as written under basics.
Note:
The heater comes with open wire ends.
Add a 12V plug-in supply using small luster terminals or solder and add shrink tubing.

OPS-35 Dust filter install

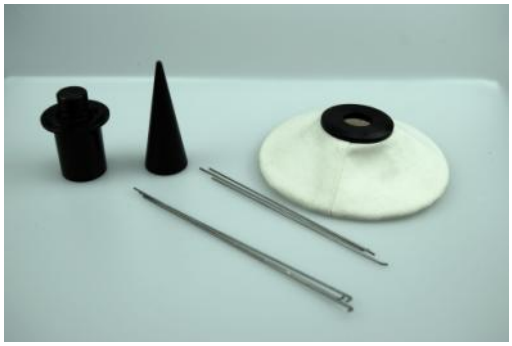
Inserting a ¼“filter is the same as inserting a ½“filter

(1/4“filter shown).

The filter itself is a bit conical. Insert it with the labeled end first to the very end of the acoustical coupler.

The ½” filter does not have the grey bottom closure .

OPS-35 Roof Top Install & Bird Spikes

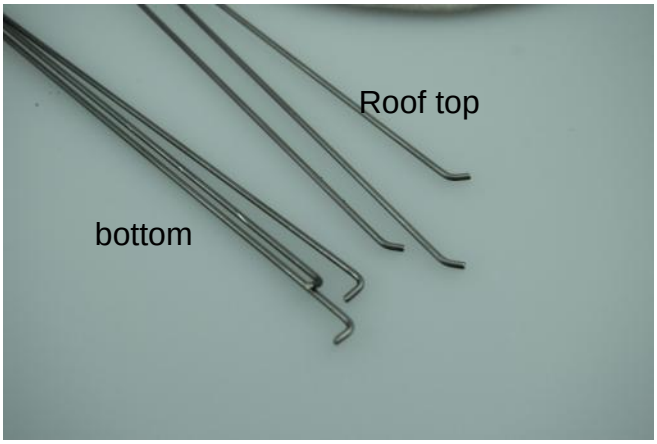


The roof top can be installed with or without bird spikes.

Install shown is with bird spikes

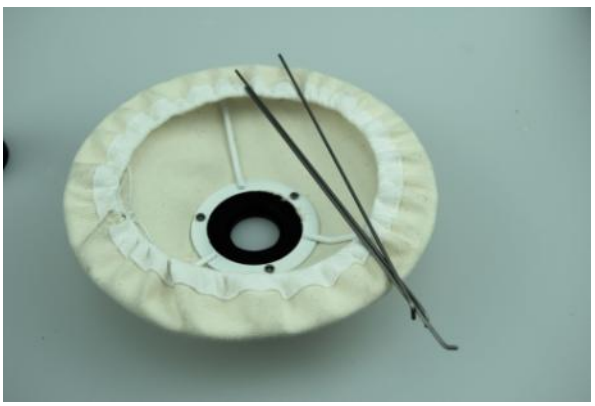
The spikes are precut for insertion. 3 spikes for the top and 3 spikes for the bottom. All spikes are cranked for secure installation.

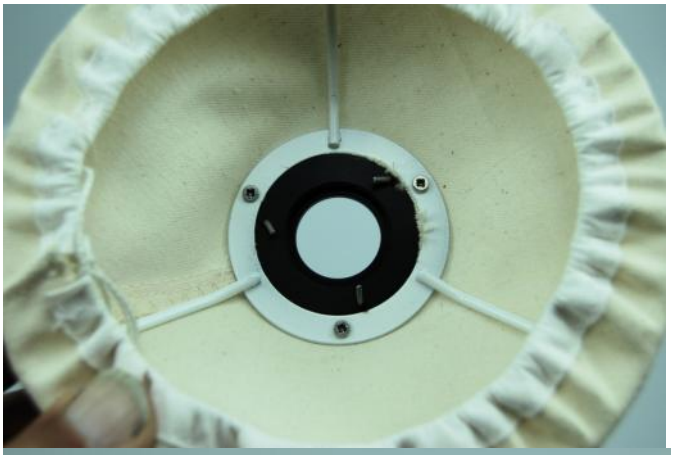
3 spikes are 90deg (right angle cranked). These are for bottom holder. The other 3 spikes are for roof top installation.

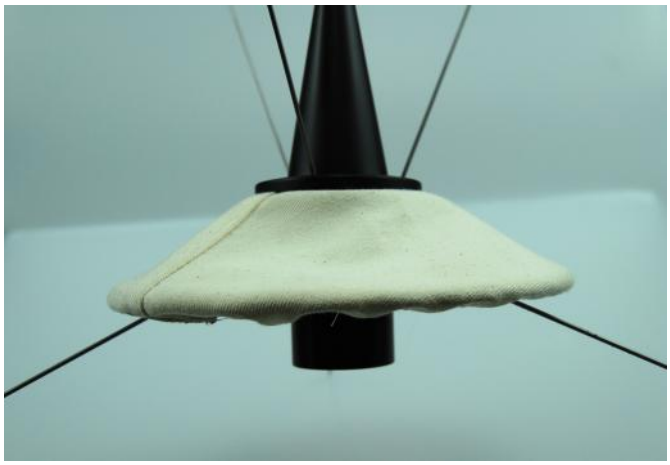


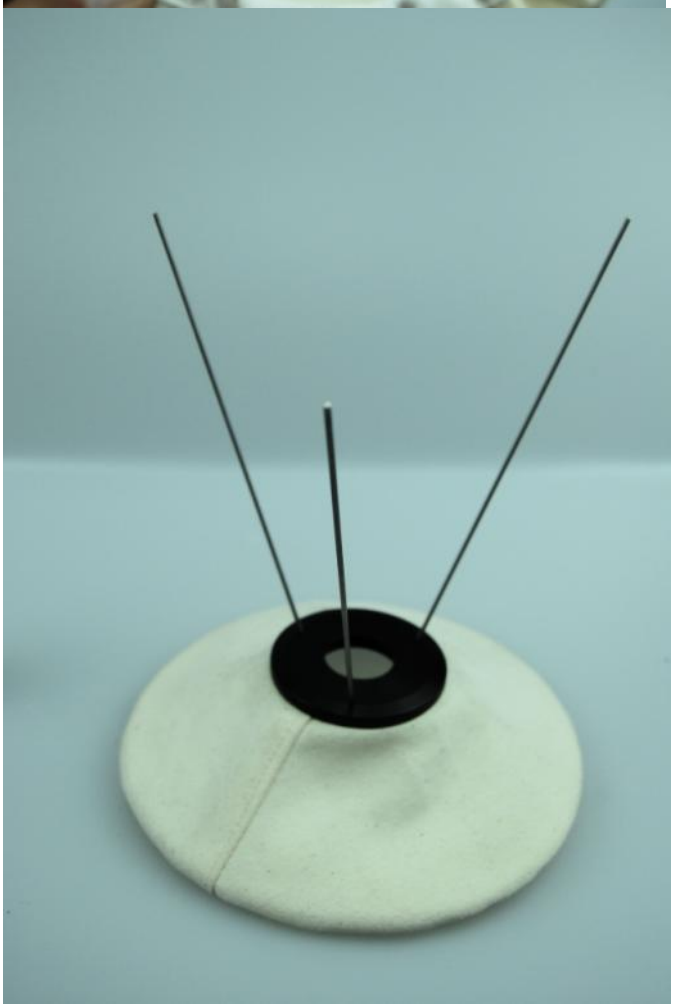
Insert the spikes into the predrilled holes of the bottom holder like shown.

Do the same with the umbrella (roof top) spikes









The spikes are securely installed when the bottom holder, the umbrella and weather tip are screwed together (top right picture).
There is no need to add glue or epoxy.
The cranked ends cannot travel out of the install position even under extreme weather conditions.

iSEMcon will pre-install the spikes before shipping upon request only. This service is provided at no additional cost.

OPS-35 Safe install

Heavy weather conditions require safety precautions.

The OPS35 outdoor protection system should be additionally secured if stormy weather conditions are possible.

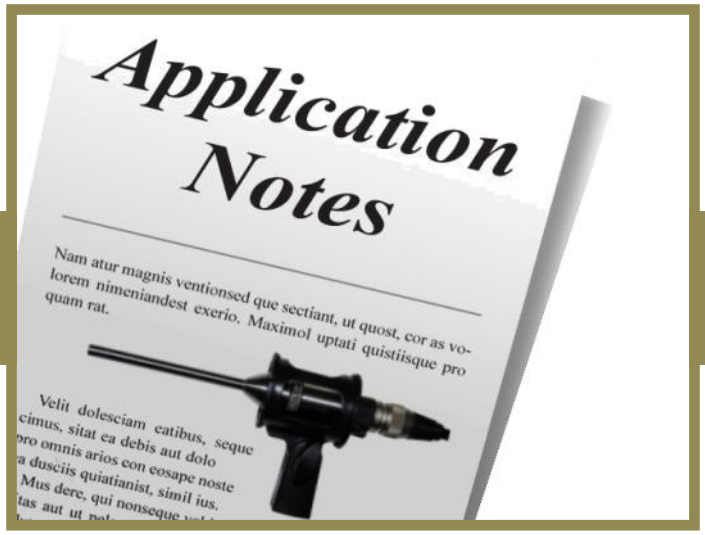
An installed OPS35 mounted with anti-bird spikes can cause injury when not secured properly.

iSEMcon recommends the use of a safety line (security rope) to secure the OPS-35 install.

An optional safety mounting kit is available for purchase.

The use of a security line is not necessary when 2 clamps are used for installation (e.g. wall mount).

APPLICATION NOTES

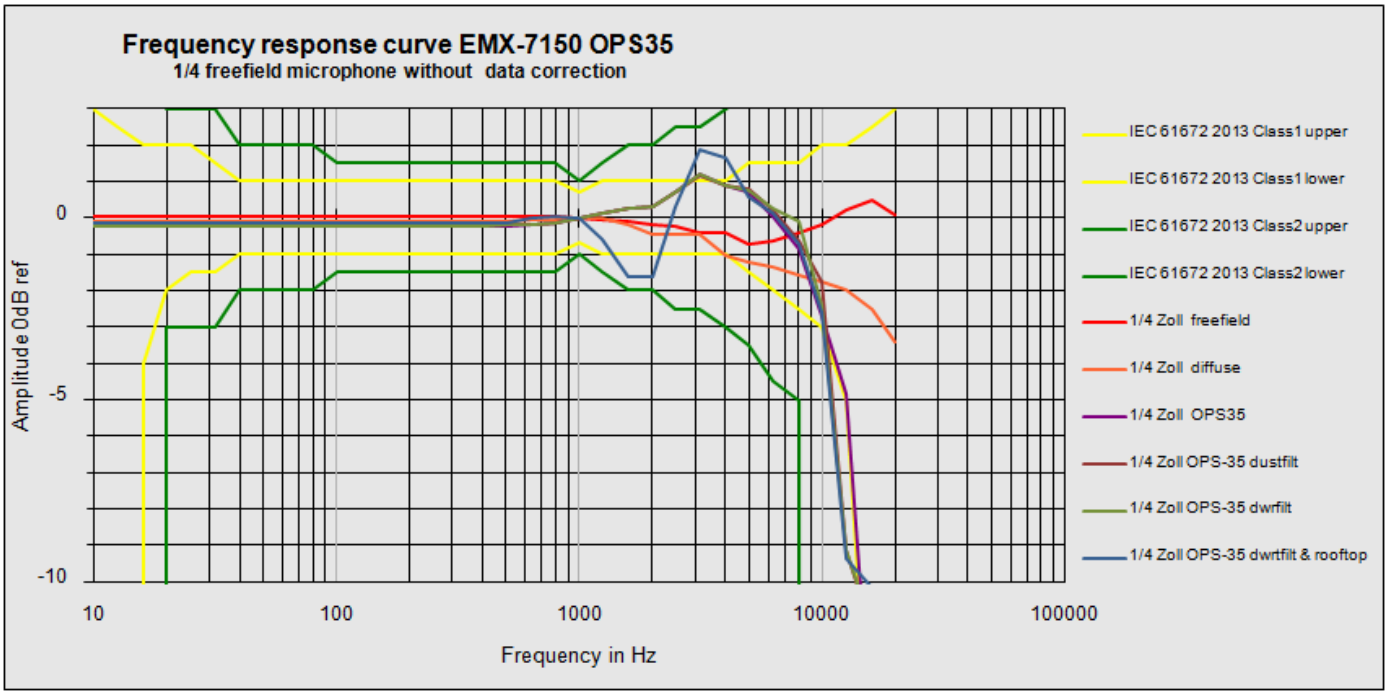


We offer OPS-35 calibration files at no additional cost. Feel free to visit our download server for cal-file download or use the links on the next page.

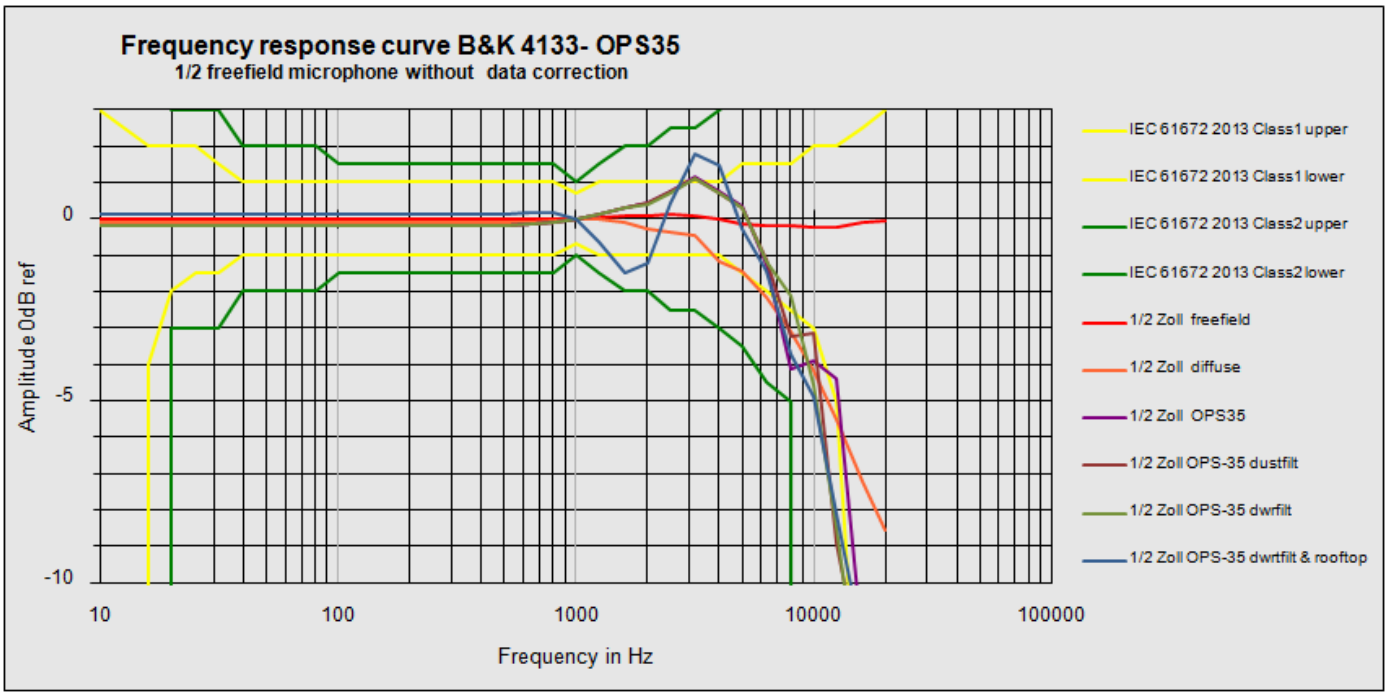
We have standard files for ¼" and ½" microphones and different OPS35 configurations. Those are in txt-file format.

The following pictures show the frequency response files for a typical ¼" and ½" freefield microphone when installed inside the OPS35 outdoor protection system. The major frequency roll-off at higher frequencies is a result of the 90 degree turn of the freefield mic with the mic facing the "clouds". This is also known as the diffusefield approximation of a freefield microphone (as per B&K literature).

1/4" Microphone



1/2 " Microphone



Note: IEC limit curves shown are for freefield equalized microphones. Additional tolerance correction for directional response will apply.
See: IEC 61672-1 section 5.4 table 2 – acceptance limits of deviations of directional response from design goal, IEC 61672-1 Section 5.3 Corrections to indicated levels sub section 5.3.3 windscreens

OPS-35 DOWNLOADS

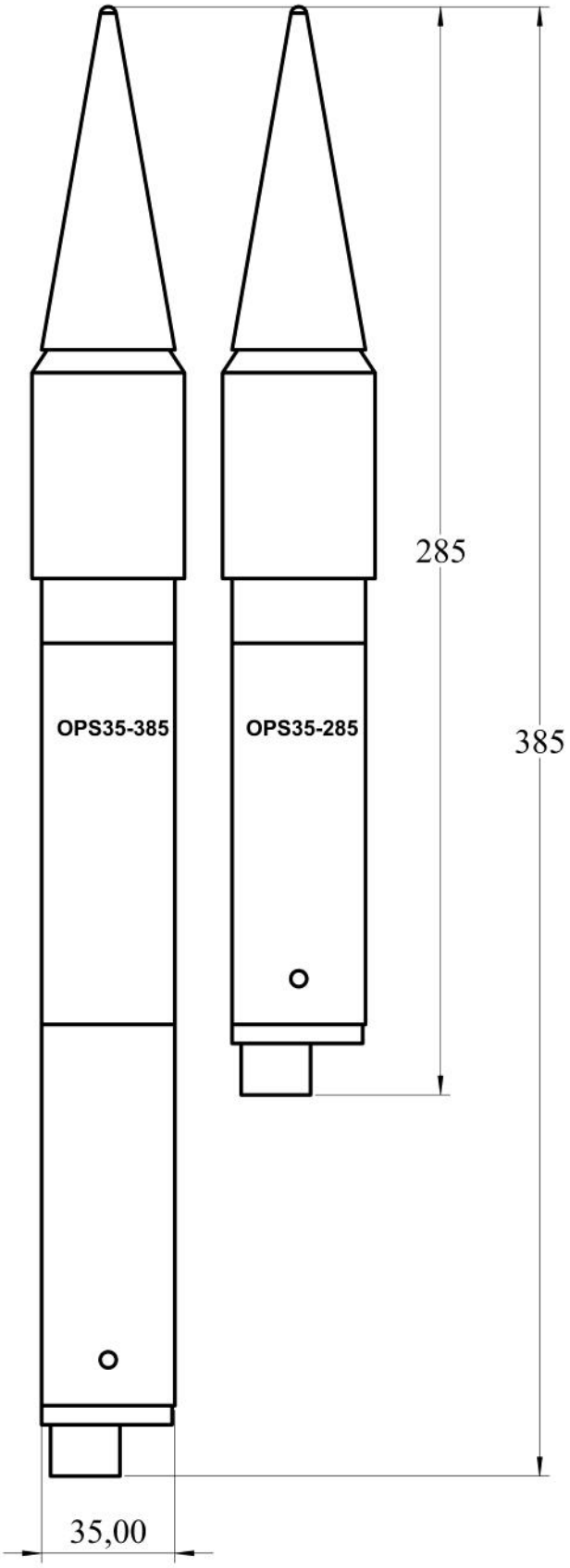
OPS35-285 Mechanics

OPS35-385 Mechanics

OPS35 Full Featured

click on pictogram for download! *1

Need customization—ask us!!!



*1 (probably not working with APPLE® mobile devices.)

OPS-35 CALIBRATION DATA

Please use the link that fits your configuration best. We offer calibration files for 1/4” and 1/2” microphones installed in different OPS35 configurations. The cal files are relative to the 90deg microphone response without OPS-35 use.

click on pictogram for download! *1

OPS 35-1/4” cal

OPS 35-1/2” cal

OPS 35-1/4” FLT100 cal

OPS 35-1/2” FLT100 cal

OPS 35-1/4” FLTdwr cal

OPS 35-1/2” FLTdwr cal

Full featured OPS35

OPS 35-1/4” RT150 FLTdwr

OPS 35-1/2” RT150 FLTdwr

CALIBRATION DATA FILE FORMAT

Data file format stored as #####.txt

Human readable ASCII file (text-file).
Standard delimiter is “.”.

Freefield response data:

;comment lines
;
;

10	-0.76
11.2	-0.43
12.5	-0.33
14	-0.19
.....	
16000	1.3
18000	1.56
20000	1.4

^ frequency (Hz) ^amplitude response (dB)

iSEMcon’s Safety clause

Safety clause and unauthorized applications

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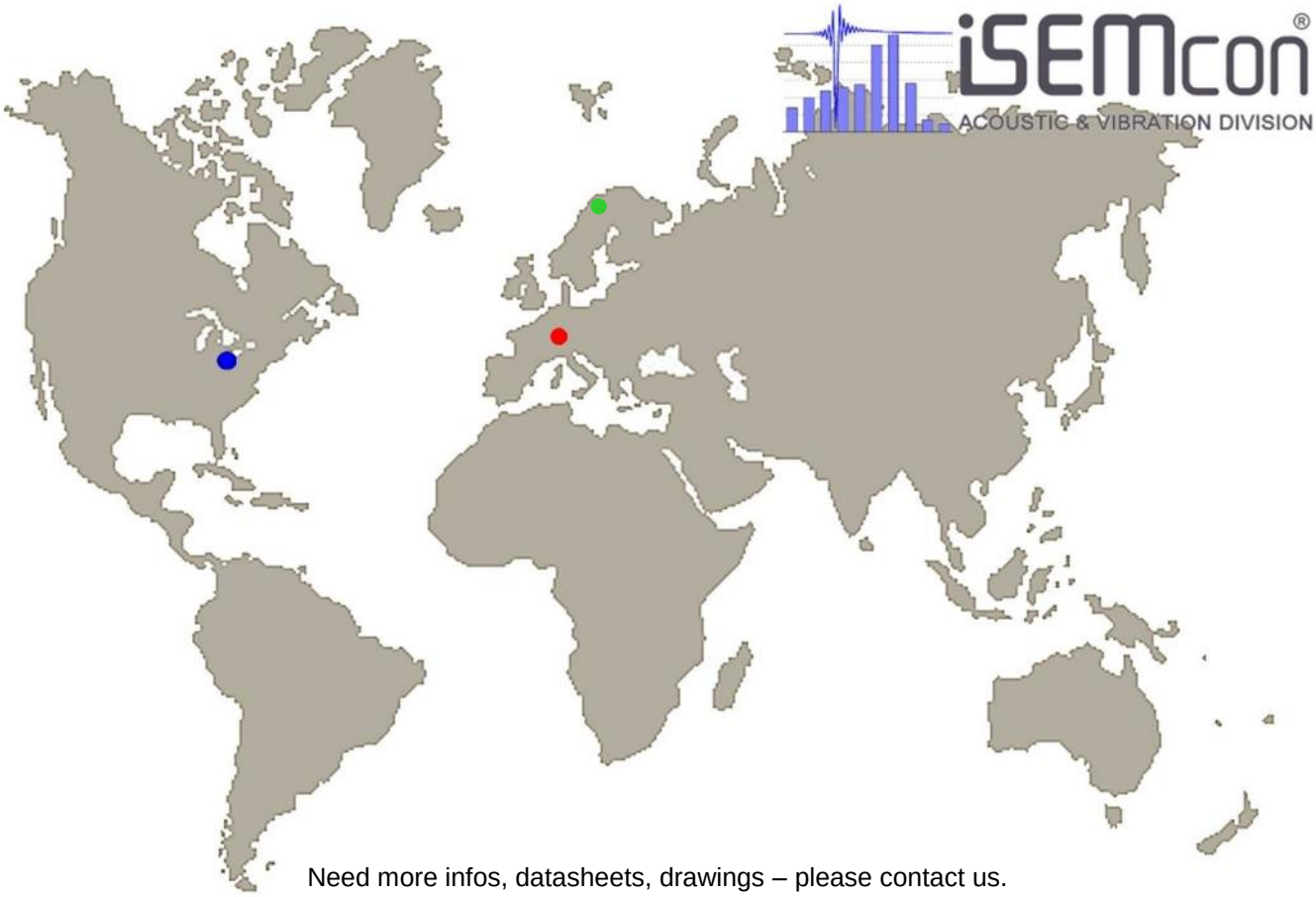
iSEMcon GmbH
iSEMcon LLC
(June 2nd 2010)



Need more infos, datasheets, drawings – please contact us.

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