# APPENDIX 12-5

## LIDAR INSTALLATION REPORT

# Metrologic Lab

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PREPARED by

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# Works journal

Gannow met mast installation | Version 1.0

PREPARED FOR:

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## Works log



| Works completed | Date | Reference No. | Document version |
|---|---|---|---|
| Installation of met mast | 29/07/2022 | DS3793 | 1.0 |
| | | | |

## Scheduled maintenance

We recommend that all SLX temporary met masts are serviced annually prior each winter season and following any major storms.

| Works completed | Date | Reference No. | Document version |
|---|---|---|---|
| Met mast maintenance visit | | | |

# Installation

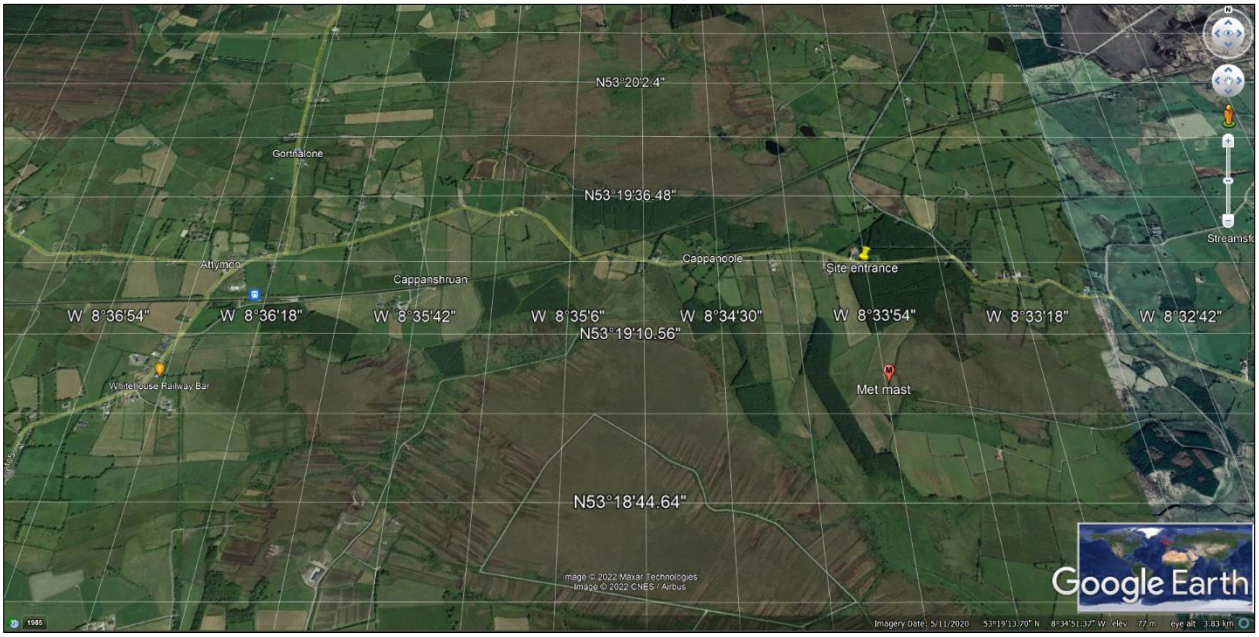


## Site location, entrance and access details

Site is in located near Galway. Not far from M6 motorway and east from Galway city.

| Site contact/detail | Information |
|---|---|
| Site manager | Daniel Forde |
| Phone number | |
| Email | |

| Entrance coordinates | |
|---|---|
| Latitude / Longitude (degrees, min, sec) | |
| 53°19'23.00"N | 8°33'55.00"W |
| Latitude / Longitude (decimal) | |
| 53.323056° N | 8.565278° W |



## Mast location and site description



<table>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>  </td><td>
<table>
<tr><td colspan="2">Latitude / Longitude (degrees, min, sec)</td></tr>
<tr><td>53°19'02.0"N</td><td>8°33'53.3"W</td></tr>
<tr><td colspan="2">Latitude / Longitude (decimal)</td></tr>
<tr><td>53.317222° N</td><td>8.564806° W</td></tr>
<tr><td colspan="2">Irish Grid</td></tr>
<tr><td>N/A</td><td>N/A</td></tr>
<tr><td colspan="2">ITM</td></tr>
<tr><td>N/A</td><td>N/A</td></tr>
<tr><td colspan="2">Elevation a.s.l. (m): 78.00</td></tr>
</table>
</td><td>  </td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
</table>

Site is in non-forestry area with grassland on the top of the mountain.

## Structure details



| Type | Face width, mm | Leg diameter, mm | Section length, m |
|---|---|---|---|
| Lattice | 380 | 33 | 2.5 |

| Height, m | Diameter / Face width, mm |
|---|---|
| 80 | 60.3 |
| 76 | 380 |
| 65 | 380 |
| 61 | 380 |
| 50 | 380 |
| 46 | 380 |
| 35 | 380 |
| 10 | 380 |
| 5 | 380 |
| 0 | 380 |

| Anchor lane No | Orientation | 1st point radius, m | 2nd point radius, m | 3rd point radius, m | 4th point radius, m | 5th point radius, m |
|---|---|---|---|---|---|---|
| 1 | 45° | 21 | 42 | 56 | N/A | N/A |
| 2 | 165° | 21 | 42 | 56 | N/A | N/A |
| 3 | 285° | 21 | 42 | 56 | N/A | N/A |
| Guy level, m | | 7.5, 15, 22.5, 30 | 37.5, 45, 52.5, 60 | 67.5, 72.5, 77.5 | N/A | N/A |

## Sensor #1 details

| Type | Length, mm | Diameter ø, mm | Upstand height, mm | Upstand diameter ø, mm | Orientation, ° | Structure width, mm | Installation Date |
|---|---|---|---|---|---|---|---|
| Boom | 1250 | 33 | 660 | 33 | 315 | 60 | 29/07/2022 |

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | North Point Orientation, ° | Installation Date |
|---|---|---|---|---|---|---|---|
| V1 | Anemo meter | Thies | 4.3351.10.000 | 01222756 | 80.020 | N/A | 29/07/2022 |

| Calibration certificate number | Calibration date | Slope value on calibration certificate | Offset value on calibration certificate | Slope value applied | Offset value applied | Installation Date |
|---|---|---|---|---|---|---|
| 220094 | 17/01/2022 | 0.045849 | 0.248808 | 0.045849 | 0.248808 | 29/07/2022 |

## Sensor #2 details

| Type | Length, mm | Diameter ø, mm | Upstand height, mm | Upstand diameter ø, mm | Orientation, ° | Structure width, mm | Installation Date |
|---|---|---|---|---|---|---|---|
| Boom | 1250 | 33 | 660 | 33 | 135 | 60 | 29/07/2022 |

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | North Point Orientation, ° | Installation Date |
|---|---|---|---|---|---|---|---|
| V2 | Anemo meter | Thies | 4.3351.10.000 | 01222757 | 80.020 | N/A | 29/07/2022 |

| Calibration certificate number | Calibration date | Slope value on calibration certificate | Offset value on calibration certificate | Slope value applied | Offset value applied | Installation Date |
|---|---|---|---|---|---|---|
| 220095 | 17/01/2022 | 0.045813 | 0.246001 | 0.045813 | 0.246001 | 29/07/2022 |

All sensor heights provided, are taken from the top of the mast foundation frame

## Sensor #3 details

| Type | Length, mm | Diameter ø, mm | Upstand height, mm | Upstand diameter ø, mm | Orientation, ° | Structure width, mm | Installation Date |
|---|---|---|---|---|---|---|---|
| Boom | 1900 | 33 | 875 | 33 | 315 | 380 | 29/07/2022 |

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | North Point Orientation, ° | Installation Date |
|---|---|---|---|---|---|---|---|
| V3 | Anemo meter | Thies | 4.3351.10.000 | 01222758 | 65.040 | N/A | 29/07/2022 |

| Calibration certificate number | Calibration date | Slope value on calibration certificate | Offset value on calibration certificate | Slope value applied | Offset value applied | Installation Date |
|---|---|---|---|---|---|---|
| 220096 | 17/01/2022 | 0.045723 | 0.270756 | 0.045723 | 0.270756 | 29/07/2022 |

## Sensor #4 details

| Type | Length, mm | Diameter ø, mm | Upstand height, mm | Upstand diameter ø, mm | Orientation, ° | Structure width, mm | Installation Date |
|---|---|---|---|---|---|---|---|
| Boom | 1900 | 33 | 875 | 33 | 135 | 380 | 29/07/2022 |

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | North Point Orientation, ° | Installation Date |
|---|---|---|---|---|---|---|---|
| V4 | Anemo meter | Thies | 4.3351.10.000 | 01222759 | 64.580 | N/A | 29/07/2022 |

| Calibration certificate number | Calibration date | Slope value on calibration certificate | Offset value on calibration certificate | Slope value applied | Offset value applied | Installation Date |
|---|---|---|---|---|---|---|
| 220097 | 17/01/2022 | 0.045827 | 0.245785 | 0.045827 | 0.245785 | 29/07/2022 |

All sensor heights provided, are taken from the top of the mast foundation frame

## Sensor #5 details

| Type | Length, mm | Diameter ø, mm | Upstand height, mm | Upstand diameter ø, mm | Orientation, ° | Structure width, mm | Installation Date |
|---|---|---|---|---|---|---|---|
| Boom | 1900 | 33 | 875 | 33 | 315 | 380 | 29/07/2022 |

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | North Point Orientation, ° | Installation Date |
|---|---|---|---|---|---|---|---|
| V5 | Anemo meter | Thies | 4.3351.10.000 | 01222760 | 50.050 | N/A | 29/07/2022 |

| Calibration certificate number | Calibration date | Slope value on calibration certificate | Offset value on calibration certificate | Slope value applied | Offset value applied | Installation Date |
|---|---|---|---|---|---|---|
| 220098 | 17/01/2022 | 0.045892 | 0.23457 | 0.045892 | 0.23457 | 29/07/2022 |

## Sensor #6 details

| Type | Length, mm | Diameter ø, mm | Upstand height, mm | Upstand diameter ø, mm | Orientation, ° | Structure width, mm | Installation Date |
|---|---|---|---|---|---|---|---|
| Boom | 1900 | 33 | 875 | 33 | 135 | 380 | 29/07/2022 |

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | North Point Orientation, ° | Installation Date |
|---|---|---|---|---|---|---|---|
| V6 | Anemo meter | Thies | 4.3351.10.000 | 01222761 | 49.870 | N/A | 29/07/2022 |

| Calibration certificate number | Calibration date | Slope value on calibration certificate | Offset value on calibration certificate | Slope value applied | Offset value applied | Installation Date |
|---|---|---|---|---|---|---|
| 220099 | 17/01/2022 | 0.045790 | 0.249276 | 0.045790 | 0.249276 | 29/07/2022 |



All sensor heights provided, are taken from the top of the mast foundation frame

## Sensor #7 details

| Type | Length, mm | Diameter ø, mm | Upstand height, mm | Upstand diameter ø, mm | Orientation, ° | Structure width, mm | Installation Date |
|---|---|---|---|---|---|---|---|
| Boom | 1900 | 33 | 875 | 33 | 315 | 380 | 29/07/2022 |

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | North Point Orientation, ° | Installation Date |
|---|---|---|---|---|---|---|---|
| V7 | Anemo meter | Thies | 4.3351.10.000 | 01222762 | 35.130 | N/A | 29/07/2022 |

| Calibration certificate number | Calibration date | Slope value on calibration certificate | Offset value on calibration certificate | Slope value applied | Offset value applied | Installation Date |
|---|---|---|---|---|---|---|
| 220100 | 17/01/2022 | 0.045841 | 0.240612 | 0.045841 | 0.240612 | 29/07/2022 |

## Sensor #8 details

| Type | Length, mm | Diameter ø, mm | Upstand height, mm | Upstand diameter ø, mm | Orientation, ° | Structure width, mm | Installation Date |
|---|---|---|---|---|---|---|---|
| Boom | 1900 | 33 | 440 | 33 | 315 | 380 | 29/07/2022 |

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | North Point Orientation, ° | Installation Date |
|---|---|---|---|---|---|---|---|
| V8 | Anemo meter | Comptus | A75-104 | 970-5617 | 10.030 | N/A | 29/07/2022 |

| Calibration certificate number | Calibration date | Slope value on calibration certificate | Offset value on calibration certificate | Slope value applied | Offset value applied | Installation Date |
|---|---|---|---|---|---|---|
| 21.US2.10190 | 14/01/2022 | 0.75610 | 0.31761 | 0.75610 | 0.31761 | 29/07/2022 |



All sensor heights provided, are taken from the top of the mast foundation frame

## Sensor #9 details

| Type | Length, mm | Diameter ø, mm | Upstand height, mm | Upstand diameter ø, mm | Orientation, ° | Structure width, mm | Installation Date |
|---|---|---|---|---|---|---|---|
| Boom | 1900 | 33 | 870 | 33 | 315 | 380 | 29/07/2022 |

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | North Point Orientation, ° | Installation Date |
|---|---|---|---|---|---|---|---|
| D1 | Wind vane | Thies | 4.3129.10.701 | 10211903 | 75.940 | 135 | 29/07/2022 |

| Calibration certificate number | Calibration date | Slope value on calibration certificate | Offset value on calibration certificate | Slope value applied | Offset value applied | Installation Date |
|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

## Sensor #10 details

| Type | Length, mm | Diameter ø, mm | Upstand height, mm | Upstand diameter ø, mm | Orientation, ° | Structure width, mm | Installation Date |
|---|---|---|---|---|---|---|---|
| Boom | 1900 | 33 | 870 | 33 | 315 | 380 | 29/07/2022 |

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | North Point Orientation, ° | Installation Date |
|---|---|---|---|---|---|---|---|
| D2 | Wind vane | Thies | 4.3129.10.701 | 10211904 | 60.960 | 135 | 29/07/2022 |

| Calibration certificate number | Calibration date | Slope value on calibration certificate | Offset value on calibration certificate | Slope value applied | Offset value applied | Installation Date |
|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |



All sensor heights provided, are taken from the top of the mast foundation frame

## Sensor #11 details

| Type | Length, mm | Diameter ø, mm | Upstand height, mm | Upstand diameter ø, mm | Orientation, ° | Structure width, mm | Installation Date |
|---|---|---|---|---|---|---|---|
| Boom | 1900 | 33 | 870 | 33 | 315 | 380 | 29/07/2022 |

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | North Point Orientation, ° | Installation Date |
|---|---|---|---|---|---|---|---|
| D3 | Wind vane | Thies | 4.3129.10.701 | 10211905 | 45.950 | 135 | 29/07/2022 |

| Calibration certificate number | Calibration date | Slope value on calibration certificate | Offset value on calibration certificate | Slope value applied | Offset value applied | Installation Date |
|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

## Sensor #12 details

| Type | Length, mm | Diameter ø, mm | Upstand height, mm | Upstand diameter ø, mm | Orientation, ° | Structure width, mm | Installation Date |
|---|---|---|---|---|---|---|---|
| Bracket | N/A | N/A | N/A | N/A | 315 | 380 | 29/07/2022 |

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | North Point Orientation, ° | Installation Date |
|---|---|---|---|---|---|---|---|
| TRH1 | Temp/RH | Galltec+Mela | KPC1.S/6-ME | 250592 | 4.900 | N/A | 29/07/2022 |

| Calibration certificate number | Calibration date | Slope value on calibration certificate | Offset value on calibration certificate | Slope value applied | Offset value applied | Installation Date |
|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |



All sensor heights provided, are taken from the top of the mast foundation frame

## Sensor #13 details



| Type | Length, mm | Diameter ø, mm | Upstand height, mm | Upstand diameter ø, mm | Orientation, ° | Structure width, mm | Installation Date |
|---|---|---|---|---|---|---|---|
| Inside logger enclosure | N/A | N/A | N/A | N/A | N/A | 380 | 29/07/2022 |

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | North Point Orientation, ° | Installation Date |
|---|---|---|---|---|---|---|---|
| P1 | Pressure | Ammonit | AB60 | B22-0031 | 2.000 | N/A | 29/07/2022 |

| Calibration certificate number | Calibration date | Slope value on calibration certificate | Offset value on calibration certificate | Slope value applied | Offset value applied | Installation Date |
|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A | N/A |

## Data acquisition system details

| ID | Type | Manufacturer | Model | Serial number | Installation height, m | Installation Date |
|---|---|---|---|---|---|---|
| Gannow | Data logger | Ammonit | M40Plus | D220018 | 1.500 | 29/07/2022 |
| Gannow | Modem | N/A | PHS-8 | N/A | 1.500 | 29/07/2022 |
| Gannow | Solar charger | Steca | PR1010 | N/A | 1.500 | 29/07/2022 |
| Gannow | Battery | N/A | 12 V 80Ah | N/A | 1.500 | 29/07/2022 |
| Gannow | PV panel | N/A | 150W | N/A | 1.500 | 29/07/2022 |
| Gannow | SIM card | N/A | N/A | 89441000302853664209 | 1.500 | 29/07/2022 |

All sensor heights provided, are taken from the top of the mast foundation frame