



Annex B to Test Report TR- 713295509-02 | Revision 1

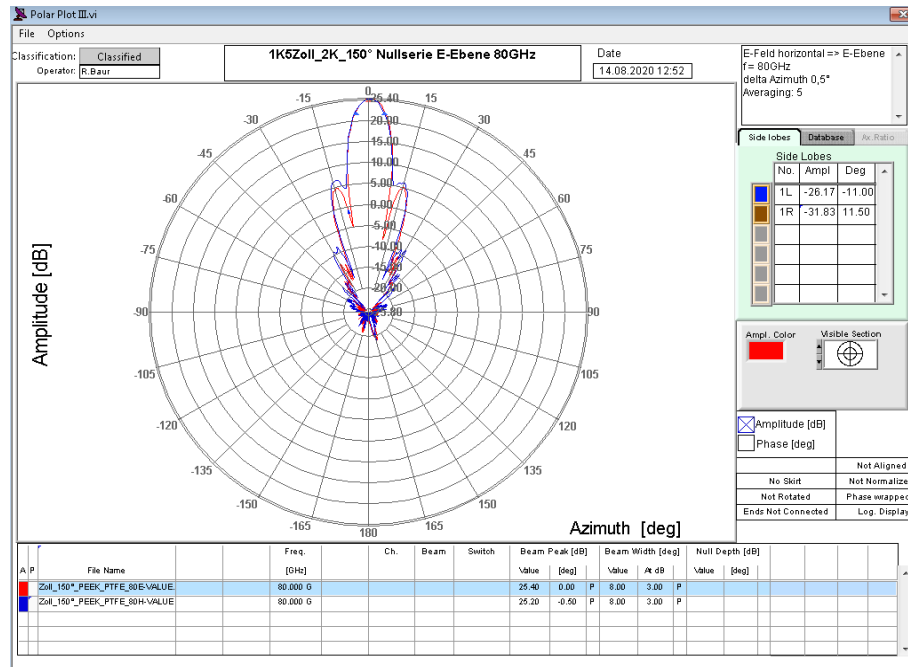
1 Antenna Diagrams provided by applicant

1.1 Antenna overview for open air environment applications

Version	Thread/Flange Size	Beam angle	Gain	Recommended measuring range up to	Use
LR510 Threaded connection antenna	G $\frac{3}{4}$ " $\frac{3}{4}$ " NPT	14°	18	10 m (32.81 ft)	Tank
	G1" 1" NPT	11°	21	20 m (65.62 ft)	Tank
	G1 $\frac{1}{2}$ " 1 $\frac{1}{2}$ NPT (+250 °C)	11°	21	30 m (98.42 ft)	Tank
	G1 $\frac{1}{2}$ " 1 $\frac{1}{2}$ NPT (+150 °C)	8°	24	30 m (98.42 ft)	Tank/Open Air
LR530 Flanged encapsulated PTFE antenna	DN 25, 1"	10°	23	20 m (65.62 ft)	Tank
	DN 50, 2"	5°	29	30 m (98.42 ft)	Tank/Open Air
	≥ DN 80, 3"	3°	33	120 m (393.7 ft)	Tank/Open Air
LR550 Polymeric horn antenna	DN 80	3°	33.5	120 m (393.7 ft)	Tank/Open Air
LR580 Lens antenna	≥ DN 80, 3"	4°	32	120 m (393.7 ft)	Tank/Open Air

1.2 LR510

1.2.1 Threaded Process Connection Antenna G 1 1/2"



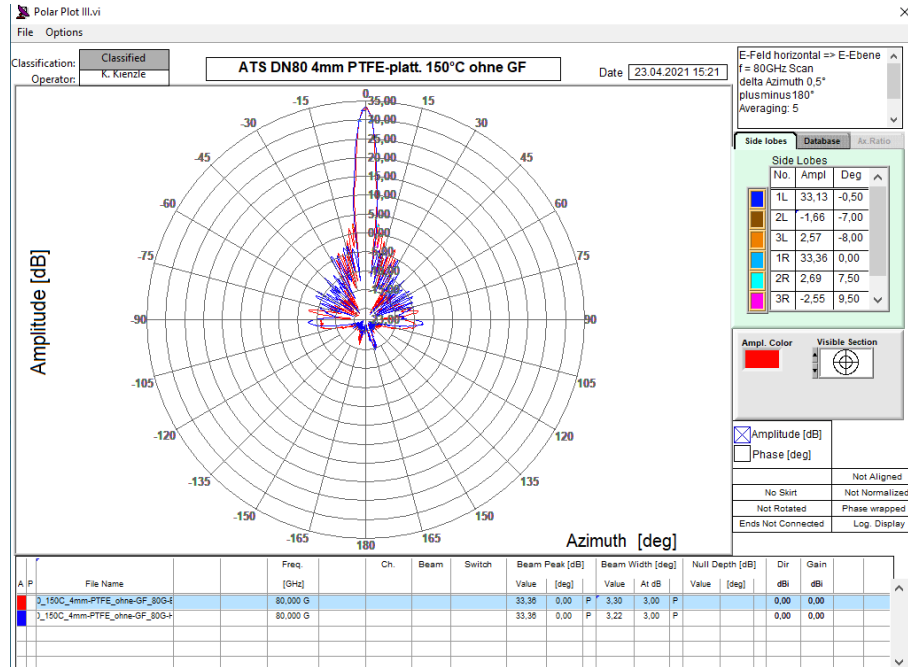
Requirements according to
 FCC 47 CFR 15.256(i) & 47 CFR 15.256(j) and RSS-211, section 5.2 (a) & (c)

Center frequency	80 GHz	Limit	Verdict
Antenna gain	25.3 dBi	---	---
Bandwidth	± 4 GHz	---	---
Half-power beamwidth (E-plane)	8.0°	≤ 8.0°	Pass
Half-power beamwidth (H-plane)	8.0°	≤ 8.0°	Pass
Side lobe gain >60° (E-plane)	-45.4 dB	≥ -38.0 dB	Pass
Side lobe gain >60° (H-plane)	-44.2 dB	≥ -38.0 dB	Pass



1.3 LR530

1.3.1 Flanged Process Connection Encapsulated PTFE Antenna DN80

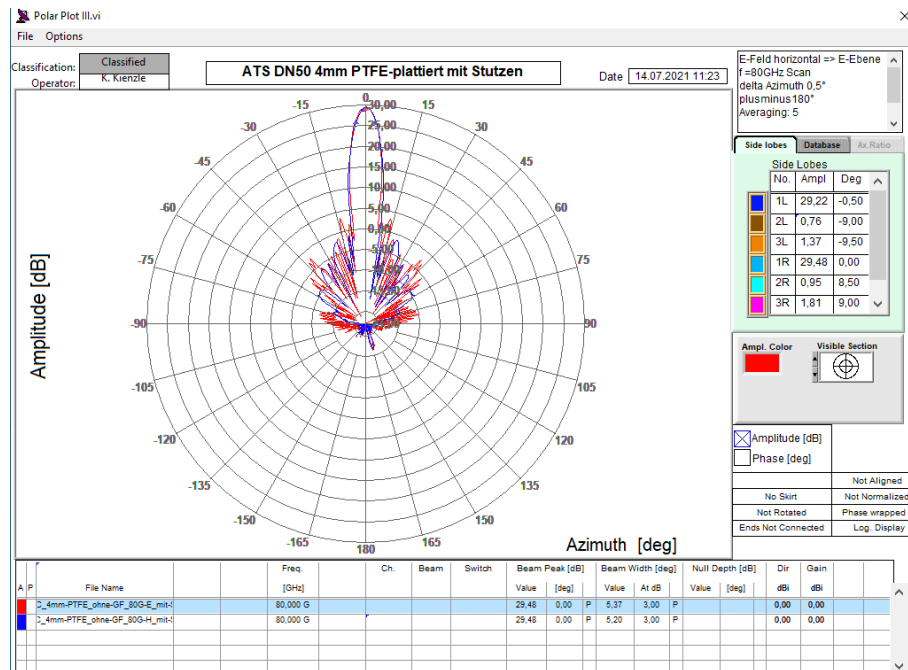


Requirements according to
FCC 47 CFR 15.256(i) & 47 CFR 15.256(j) and RSS-211, section 5.2 (a) & (c)

Center frequency	80 GHz	Limit	Verdict
Antenna gain	33.4 dBi	---	---
Bandwidth	± 4 GHz	---	---
Half-power beamwidth (E-plane)	3.3°	$\leq 8.0^\circ$	Pass
Half-power beamwidth (H-plane)	3.2°	$\leq 8.0^\circ$	Pass
Side lobe gain >60° (E-plane)	-41.4 dB	≥ -38.0 dB	Pass
Side lobe gain >60° (H-plane)	-41.4 dB	≥ -38.0 dB	Pass



1.3.2 Flanged Process Connection Encapsulated PTFE Antenna DN50



Requirements according to
 FCC 47 CFR 15.256(i) & 47 CFR 15.256(j) and RSS-211, section 5.2 (a) & (c)

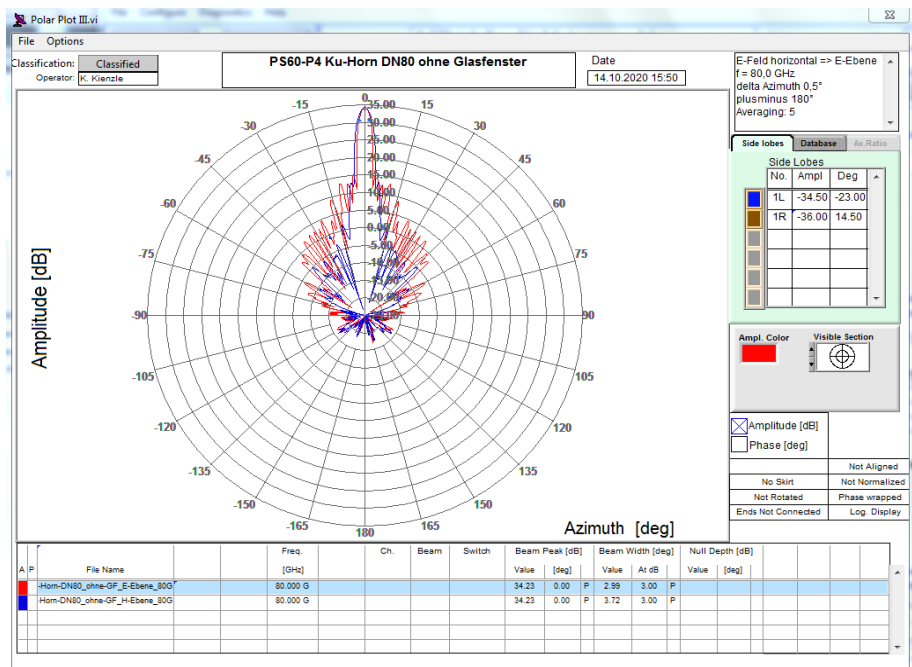
Center frequency	80 GHz	Limit	Verdict
Antenna gain	29.5 dBi	---	---
Bandwidth	± 4 GHz	---	---
Half-power beamwidth (E-plane)	5.4°	$\leq 8.0^\circ$	Pass
Half-power beamwidth (H-plane)	5.2°	$\leq 8.0^\circ$	Pass
Side lobe gain >60° (E-plane)	-41.5 dB	≥ -38.0 dB	Pass
Side lobe gain >60° (H-plane)	-39.5 dB	≥ -38.0 dB	Pass



Product Service

1.4 LR550

1.4.1 Polymeric Horn Process Connection

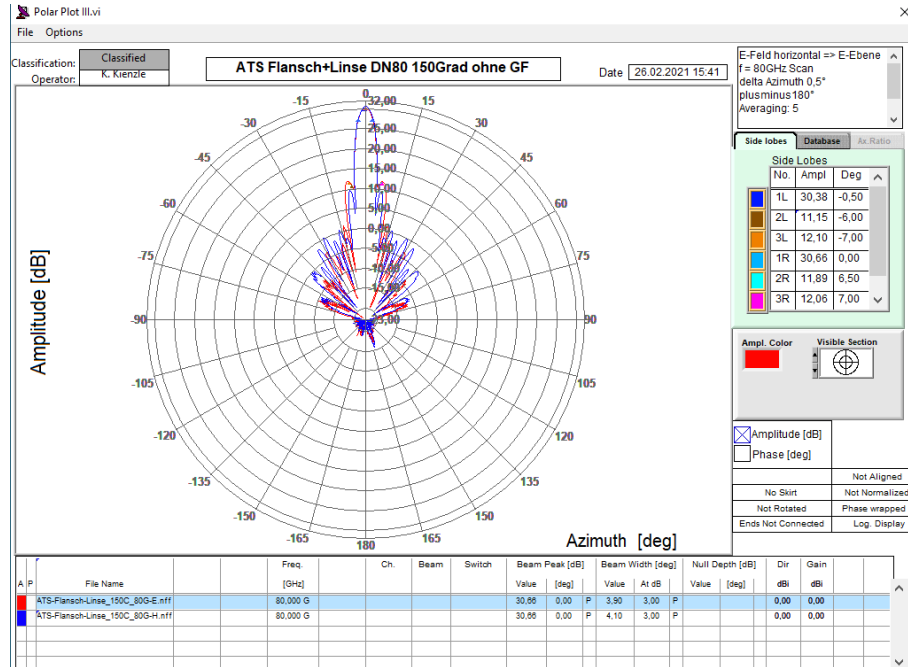


Center frequency	80 GHz	Limit	Verdict
Antenna gain	34.2 dBi	---	---
Bandwidth	± 4 GHz	---	---
Half-power beamwidth (E-plane)	3.0°	≤ 8.0°	Pass
Half-power beamwidth (H-plane)	3.7°	≤ 8.0°	Pass
Side lobe gain >60° (E-plane)	-42.2 dB	≥ -38.0 dB	Pass
Side lobe gain >60° (H-plane)	-47.2 dB	≥ -38.0 dB	Pass



1.5 LR580

1.5.1 Flanged Lens Antenna



Requirements according to
 FCC 47 CFR 15.256(i) & 47 CFR 15.256(j) and RSS-211, section 5.2 (a) & (c)

Center frequency	80 GHz	Limit	Verdict
Antenna gain	30.7 dBi	---	---
Bandwidth	± 4 GHz	---	---
Half-power beamwidth (E-plane)	3.9°	$\leq 8.0^\circ$	Pass
Half-power beamwidth (H-plane)	4.1°	$\leq 8.0^\circ$	Pass
Side lobe gain >60° (E-plane)	-41.2 dB	≥ -38.0 dB	Pass
Side lobe gain >60° (H-plane)	-41.2 dB	≥ -38.0 dB	Pass