

RF microneedling devices compared

Nine RF microneedling devices side by side from their FDA filings: frequency, needles, depth range and cleared uses.

This guide lists what each manufacturer filed with the US FDA (510(k) summaries) and what the published literature reports. It is general information, not advice for any individual, and it does not rank devices. Which device, depth and energy suit a particular face is decided at an assessment with Dr Sin Yong, who performs every treatment personally at Wheelock Place, 501 Orchard Road, Singapore.

Key facts

Category	Fractional microneedle radiofrequency (RF microneedling)
Devices on this page	Secret RF / DUO, Virtue RF, Potenza, Morpheus8, Sylfirm X, Genius, Scarlet, Vivace, Infini
Frequencies filed	From 460 kHz (Genius) to 2 MHz (Secret RF, Sylfirm X); some offer more than one
Depth ranges filed	Mostly 0.5–3.5 mm or 0.5–4.0 mm; Sylfirm X starts at 0.3 mm
FDA wording	Electrocoagulation and haemostasis; wrinkle wording only for some modes; no acne-scar indication
Used here	Secret DUO (Secret RF plus 1540 nm fractional laser), performed by Dr Sin Yong

The devices, from their FDA filings

RF microneedling devices compared from their FDA 510(k) summaries

Device	Maker	RF type and frequency	Needles and tips	Depth range	FDA 510(k)
Secret RF / Secret DUO (used here)	ILOODA, Korea	Bipolar, 2 MHz	25- and 64-pin tips; DUO also lists 25PIN-S, 1PIN and 4PIN gold-plated cartridges	0.5–3.5 mm, 0.1 mm steps	K170325 (2017); DUO K202043 (2021)
Virtue RF	ShenB, Korea	Bipolar 0.5, 1 and 2 MHz; single-needle monopolar handpiece	36-, 12- and 1-needle arrays	Not stated in the summaries reviewed	K202415, K211562 (2021)
Potenza	Jeisys, Korea	Monopolar and bipolar, 1 and 2 MHz	Insulated and semi-insulated 16/25/49-pin tips; 21-pin Fusion tip; single-needle tips	0.5–4.0 mm, 0.25 mm steps	K192545 (2020); K231216 (2024)
Morpheus8	InMode, Israel	Bipolar, 1 MHz	12-, 24- and 40-pin tips	Maximum 4.0 mm in the FDA summary	K192695 (2019); K231790 (2023)
Sylfirm X	Viol, Korea	Bipolar, 2 MHz; continuous-wave and	18- and 25-pin tips	0.3–4.0 mm, 0.1 mm steps	K200185 (2020);

Device	Maker	RF type and frequency	Needles and tips	Depth range	FDA 510(k)
		pulsed-wave modes			K213612 (2022)
Genius	Lutronic, Korea	Bipolar, 460 kHz	49 needles, 200 µm	0.5–3.5 mm (K180945); maximum 4.0 mm (K253484)	K180945 (2018); K253484 (2026)
Scarlet SRF / Scarlet Pro	Viol, Korea	Bipolar	Gold-plated needles; Pro: insulated and non-insulated 25/49-pin tips	0.5–3.5 mm (SRF 0.25 mm steps; Pro 0.1 mm)	K180872 (2018); K253859 (2026)
Vivace	ShenB, Korea	Bipolar, 1 and 2 MHz	36 needles	0.5–3.5 mm, 0.1 mm steps	K193070 (2021)
Infini	Lutronic, Korea	Bipolar, 1 MHz	49 needles	0.5–3.5 mm	K121481 (2013)

How Dr Sin Yong uses RF microneedling

Secret RF (on the Secret DUO platform, now a CLASSYS platform; FDA filing by ILOODA) is the device used in his practice. Insulated needles release the energy at the tip and spare the surface, which is why it is often the first energy on Fitzpatrick IV–V skin and the choice for shallow rolling acne scars, pores and texture. Defined ice pick and boxcar scars are usually planned with S3 Resurfacing Lift (fractional CO₂ on DEKA Tetra Pro), and tethered rolling scars are released by subcision first. No number of sessions is promised in advance; the scar map and the response set it.

References

1. US FDA 510(k) summary K170325 — Secret RF (ILOODA Co., Ltd.), 2017: bipolar 2 MHz, needle depth 0.5–3.5 mm in 0.1 mm steps. [source](#)
2. US FDA 510(k) summary K202043 — Secret DUO (ILOODA Co., Ltd.), 2021. [source](#)
3. US FDA 510(k) summary K211562 — VirtueRF (ShenB Co., Ltd.), 2021: 0.5, 1 and 2 MHz; 36-, 12- and 1-needle arrays; Smart RF 1 MHz mode cleared for facial wrinkles, skin types I–V. [source](#)
4. US FDA 510(k) summary K192545 — Potenza (Jeisys Medical Inc.), 2020: monopolar and bipolar RF at 1 and 2 MHz. [source](#)
5. US FDA 510(k) summary K231216 — Potenza tips (Jeisys Medical Inc.), 2024: insulated and semi-insulated tips; depth 0.5–4.0 mm in 0.25 mm steps. [source](#)
6. US FDA 510(k) summary K192695 — Morpheus8 (InMode), 2019: bipolar 1 MHz; maximal treatment depth 4.0 mm. [source](#)
7. US FDA 510(k) summary K213612 — Sylfirm X (Viol Co., Ltd.), 2022: bipolar 2 MHz; continuous-wave and pulsed-wave modes; depth 0.3–4.0 mm in 0.1 mm steps. [source](#)
8. US FDA 510(k) summary K180945 — Genius (Lutronic), 2018: bipolar 460 kHz; 49 needles; depth 0.5–3.5 mm. [source](#)
9. US FDA 510(k) summary K180872 — Scarlet SRF (Viol Co., Ltd.), 2018: bipolar; gold-plated needles; depth 0.5–3.5 mm in 0.25 mm steps. [source](#)
10. US FDA 510(k) summary K193070 — Vivace (ShenB Co., Ltd.), 2021: bipolar 1 and 2 MHz; 36 needles; depth 0.5–3.5 mm in 0.1 mm steps. [source](#)
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19. Chandra S, et al. Physics of fractional microneedle radiofrequency. *J Cutan Aesthet Surg*. 2024;17:177. doi:10.25259/jcas_98_23 (PMID 39483649). source

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