Good People, Top-notch Products and Excellent Service

The GC Racer is a Fast Temperature Programmer. It overcomes the power limitations of conventional GC ovens by adding a second convection heater to the oven. The GC Racer is controlled by the "host" GC and can boost ramp rates up to 120 °C/min.

Advantages of the GC Racer

Saves Time Faster runs mean higher efficiency, quick turnaround and greater

profitability.

Chromatographic Integrity

Does not require specialized columns or interfaces to connect to

the injector and detector.

Easy to Implement Installs in minutes and uses standard columns from any vendor.

Fully Integrated

It is fully controlled by the GC keypad or operating software.

No operator training required.

Rugged Employs the same type of convective heater used in the GC oven.

Utility One system can be used for dual column GCs.

Versatile Can run on 110 - 240V, 50/60Hz and coupled with 110 - 240V

GCs.

Cost Effective One-fifth the purchase price compared to resistively heated

accessories and no expensive specialized columns.

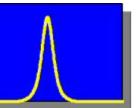
Learn more about the GC Racer's

• Performance Data: <u>Heating Power</u> > <u>Heating Performance</u> > <u>RT Precision</u> > <u>Fast Analysis</u>





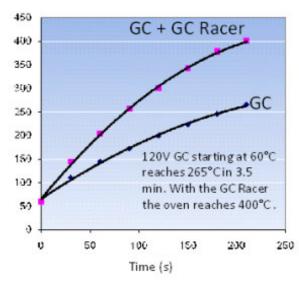
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Heating Power: The GC Racer can more than double the heating power of the GC. Power can be measured in Volt-Amps (VA). An Agilent GC oven runs on 120V, 13 amp = 1560VA. The GC Racer supplies 1800 VA (120V X 15 amp) additional power for a total of 3360VA heating power. By contrast a "fast-ramp" oven (240 V X 10 amp) = 2400VA.

Q: Why is the GC Racer better than a "fast oven"?

A: More heating power and you don't need 240V circuits.



GC Power Ratings with and without GC Racer

| | GC Oven | | | GC Racer | 90. | Total |
|-------|---------|---------------|-------|----------|---------------|---------------|
| Volts | Amps | Power (VA) | Volts | Amps | Power (VA) | Power (VA) |
| 120 | 13 | 1560 | 120 | 15 | 1800 | 3360 |
| 240 | 10 | 2400 | With | out GC R | lacer | 2400 |
| 240 | 10 | 2400 | 240 | 13 | 3120 | 5520 |

Learn more about the GC Racer's

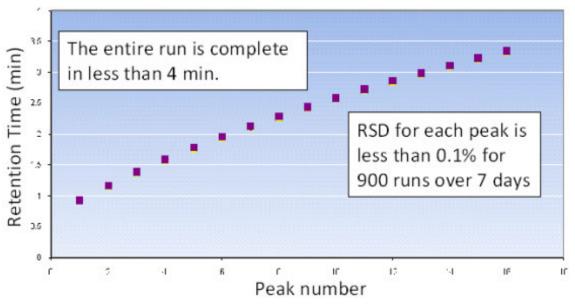




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ROI Calculator

Retention Time Precision for 900 runs over 7 days: The GC Racer performance can be evaluated by measuring the relative standard deviation (RSD) of the RT for each peak eluted at 70°C/min ramp rate. This graph plots the retention time for each peak from a sample containing 16 hydrocarbons from C10 – C25.



Temp Program: 50°C (0.33 min hold) 70°C/min to 300°C (hold 0.1 min)

Splitless injection with purge on at 0.66 min

Column: Rtx-5 15m 0.25mm X 0.25um

Inj = 300°C FID = 325°C

Learn more about the GC Racer's

• Performance Data: Heating Power > Heating Performance > Fast Analysis

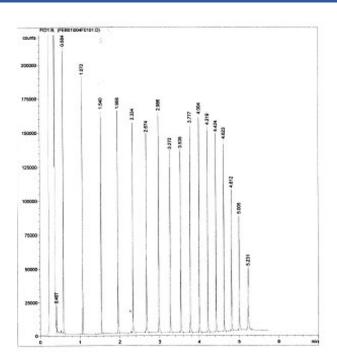




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FL PRO: Here's a chromatogram and report from a Fast GC separation of hydrocarbons ranging from C8 to C40. Run time was less than 6 min. Use the zoom feature on your browser to inspect the peaks closely.



| Sample Feme Acq. Operator | | BOOME | | 10.000 | Vial Inj | | 4 |
|---|--|--|---|---|--|---------|----|
| Acq. Method last changed Analysis Hetho | : 2/1/06 : d : C:\HPCH | EMV1/HETHOD | BY SERVE | M MecDone M | ild | . = . # | h1 |
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| | No. | eight Ferce | | | | | |
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| Sorted By | 2.0 | Signal | | | | | |
| Multiplier | - | 5.0100 | | | | | |
| Dilution | = = | 1,0000 | | | | | |
| Sample Amount | 1. | 20.01000 | 190 | SOT USE | i in a | alc.) | |
| | | | | | | | |
| Bignal 1: FID1 | 9, | | | | | | |
| | | Towns. | | 10-0- | 44.0 | | |
| Peak Settime 7 | | | mengh | Heir | | | |
| Peak SetTime T | Inini | counts's | [counts] | C. 2007 A | | | |
| | Inini | counts's | [counts] | C. 2007 A | | | |
| # Inla1 | [min] V 5.75e-3 | 8410,89160 | (counts) | 4 4.30 | 3536 | | |
| 0 (mln) 1 0.407 B | [min] V 5.75e-3 m 5.8te-3 | 00unts's 8410.89160 2.5158464 | 2,181554 2,16044 | 4 4.3 | 9536 2929 | | |
| # [mlm] 1 0.407 B 2 0.584 B | [min] V 5.75e-3 B 5.8te-3 | 8419.89160 7.5158464 | 2,18155e 2,16044e 3,90339e | 4 4.38 5 43.43 5 10.20 | 8536 2929 2199 | | |
| # [mlm] 1 0.407 B 2 0.584 B | [min] V 5.75e-3 B 5.8te-3 | 8419.89160 7.5158464 | 2.181554 2.160444 3.903394 1.649464 | 4 4.36 5 43.42 5 10.20 5 33.13 | 9536 9536 9539 9198 9743 | | |
| 8 (min) 1 0.407 5 2 0.584 5 3 1.972 5 4 1.540 9 5 1.958 9 | [min] 7 5.75e-3 8 5.81e-3 8 6.41e-3 9 7.46e-1 9 7.29e-1 | counts*s | 2.181554 2.160444 3.903394 3.649464 3.645874 | 6 4.36 5 43.43 5 19.20 5 33.13 5 33.00 | 5536 2929 5199 5743 | | |
| 8 (min) 1 0.407 B 2 0.584 B 3 1.072 B 4 1.540 P 6 2.334 B | [min] V 5.75e-3 8 5.81e-3 8 6.41e-3 9 7.46e-3 9 7.29e-1 9 7.91e-3 | 0410.89160 7.5158461 7.6501564 7.7211964 7.0099764 7.9122664 | 2.181554 2.160844 3.903394 2.649464 1.645874 1.563034 | 4 4.36 5 43.42 5 10.26 5 33.13 5 33.06 5 31.42 | 3536 2929 2199 3743 3529 2007 | | |
| # [mln] 1 0.407 B 2 0.584 B 3 1.072 B 4 1.540 P 5 1.968 P 6 2.334 B 7 2.674 V | [min] V 5.75e-3 8 5.81e-3 8 6.41e-3 9 7.46e-3 9 7.29e-1 9 7.91e-3 9 0.73e-3 | counts*s 3410.89160 7.51594e1 7.65015e4 7.72139e4 7.922264 8.18087e4 | 2.181554 2.160844 3.903394 1.649464 1.645874 1.563034 1.471864 | 4 4.36 5 43.42 5 10.26 5 33.13 5 33.06 5 31.42 6 29.56 | 8536 1929 1198 1743 1529 2007 1733 | | |
| # [min] 1 0.407 B 2 0.584 B 3 1.072 B 4 1.540 P 6 2.334 B 7 2.674 V 8 2.506 V | [min] 5.75e-3 8.5.8te-3 8.64te-3 9.7.46e-3 9.7.25e-3 9.7.91e-3 9.7.92e-3 | counts*s 8410.89160 7.5158468 7.6501564 7.7213964 7.0200764 8.1808764 8.2608264 | 2.181556 2.160646 3.903394 2.649866 3.645874 1.563034 1.471866 1.629836 | 4 4.36 5 43.45 5 10.26 5 33.15 5 33.06 5 31.45 6 29.56 6 32.76 | 3536 2929 2929 374.3 3529 2007 373.3 6299 | | |
| # [min] 1 0.407 B 2 0.584 B 3 1.672 B 4 1.540 P 5 1.968 P 6 2.334 B 7 2.674 V 9 3.272 D | [min] 7 5.75e-3 8 5.81e-3 8 6.41e-3 9 7.46e-3 9 7.29e-1 9 7.91e-3 9 7.92e-3 9 7.92e-3 9 7.92e-3 | counts's 8410.89160 7.5159461 7.6501564 7.7213964 7.8289764 8.1808764 8.1808764 8.266284 8.4294464 | [counts] 2.181554 2.160846 3.903394 1.649464 3.645874 1.363034 1.471864 1.248864 | 64 4.38 65 43.42 65 33.12 65 33.13 65 33.14 65 32.77 65 32.77 65 27.11 | 3536 2929 2929 3743 2529 2507 3733 6298 1526 | | |
| 8 [min] 1 0.407 5 2 0.584 8 3 1.912 9 4 1.540 9 6 1.960 9 6 2.334 8 7 2.674 V 8 2.966 V 9 3.272 9 10 3.535 8 | [min] 7 5.75e-3 8 5.81e-3 8 6.41e-3 9 7.46e-3 9 7.29e-1 9 7.91e-3 9 7.92e-3 0 3.00e-3 0 3.00e-3 | counts*s 8410.89160 7.5159468 7.6501568 7.7213964 7.9222664 8.1808764 8.2668264 8.4394464 8.6544064 | 2.181554 2.160444 3.903394 1.649464 1.563334 1.471864 1.629834 1.349854 1.356754 | 14 4.36 5 43.42 5 33.12 5 33.16 5 33.16 5 33.16 6 29.56 6 29.57 6 27.27 | 5536 2929 2198 5743 5529 2007 9733 6298 1526 7335 | | |
| 8 [min] 1 0.407 B 2 0.584 B 3 1.640 P 6 1.540 P 6 2.334 B 7 2.674 V 9 3.272 D 20 3.535 B 11 3.177 B | [min] V 5.75e-3 8 5.81e-3 8 6.41e-3 9 7.46e-3 9 7.29e-1 9 7.91e-3 0 7.92e-3 0 9.01e-3 0 3.92e-3 | counts's 3410.89160 7.5159461 7.6501564 7.921394 7.9222604 7.9222604 8.1808764 8.2668264 8.4294404 8.6228564 | 2.181554 2.16044 2.903394 1.6424G 1.563325 1.471864 1.62283 1.34888 1.32835 1.33835 1.33835 1.33835 | 64 4.36 5 43.42 5 19.20 5 33.00 5 31.42 5 29.56 5 27.11 5 27.21 5 27.22 | 2536 2529 2198 2743 2529 2507 2507 2529 2529 2526 2335 2547 | | |
| 8 [min] 1 0.407 B 2 0.584 B 3 1.042 B 4 1.540 P 6 1.960 P 6 2.304 R 7 2.674 V 8 2.965 V 9 3.272 D 10 3.535 D 11 3.777 D 12 4.004 B | [min] V 5.75e-3 0 5.81e-3 0 7.46e-3 0 7.29e-1 0 7.91e-3 0 7.92e-3 0 7.92e-3 0 3.92e-3 0 3.92e-3 0 3.92e-3 0 3.92e-3 | 0410.09160 7.5159404 7.6501504 7.0200704 7.0200704 8.1800704 8.2605204 8.0205504 8.0205504 | [counts] 2.181564 2.160444 3.903394 1.649464 1.649374 1.471864 1.471864 1.348884 1.356754 1.539574 1.609874 | 14 4.36 5 43.42 5 19.20 5 33.13 5 33.00 6 31.43 6 27.56 6 27.21 6 27.22 6 27.23 6 30.90 | 19536 1909 1190 1190 1190 1190 1190 1190 119 | | |
| 8 [min] 1 0.407 B 2 0.584 B 3 1.672 B 4 1.540 P 5 1.960 P 6 2.334 B 7 2.674 V 9 3.272 B 10 3.535 D 11 3.777 D 12 4.004 B 13 4.219 B | [min] 7 | 0410.89160 7.5159401 7.6501501 7.6501501 7.0213904 7.0202704 8.1505704 8.2565204 8.439404 8.624504 8.022504 8.8265904 | [counts] 2.181504 3.90339 1.649466 1.563034 1.47186 1.29834 1.356754 1.53957 1.603074 1.53957 | 64 4.34 6 43.42 5 30.25 5 33.10 5 33.06 5 31.42 6 27.21 6 27.21 6 27.21 6 30.91 6 30.61 | 10536 2929 5198 5743 3529 2007 9133 6299 5526 7334 7336 7367 7367 737 737 737 737 737 737 | | |
| 8 [min] 1 0.407 8 2 0.584 1.540 8 4 1.540 8 6 2.334 8 7 2.674 V 8 2.966 V 9 3.272 0 10 3.777 8 11 3.777 8 12 4.217 8 13 4.217 8 14 4.424 8 | [min] 7 5.75=3 8 5.81=3 9 7.46+3 9 7.46+3 9 7.25=3 0 7.91=3 0 7.91=3 0 3.94=3 0 3.94=3 0 3.94=3 0 3.94=3 0 3.94=3 0 3.95=3 0 3.95=3 0 3.95=3 | 00410.89160 7.5159401 7.6501504 7.0501504 7.0200704 8.1803704 8.2605204 8.2605204 8.2605204 8.2605204 8.2605204 8.2605204 8.2505204 8.2505204 8.2505204 | [counts] 2.18156 2.16044 3.90339 2.64946 1.64946 1.47186 1.47186 1.34885 1.34885 1.35857 1.60377 1.60377 1.60377 1.60347 | 64 4.36 65 43.46 65 33.16 65 33.16 65 33.16 65 33.14 65 27.26 65 27.26 65 27.26 65 30.96 65 30.96 66 29.66 | 3536 3929 3743 3529 2007 8733 6299 526 7335 7336 7336 7336 7336 7336 7336 733 | | |
| # [min] 1 0.407 8 2 0.584 8 3 1.012 8 4 1.540 P 5 1.540 P 6 2.334 P 7 2.674 V 8 2.986 V 9 3.272 8 20 3.535 8 11 3.777 8 22 4.004 8 33 4.210 8 34 4.424 F 5 4.623 8 | min 3,75e-3 5,61e-3 6,41e-3 6,75e-3 7,21e-3 7,21e-3 7,22e-3 0,02e-3 0,02e-3 0,02e-3 0,02e-3 0,02e-3 0,02e-3 0,02e-3 0,03e-3 0,03e-3 0,03e-3 0,03e-3 | 00000000000000000000000000000000000000 | [counts] 2.181554 2.160444 3.903394 1.563035 1.471864 1.22925 1.348884 1.336735 1.603070 1.523170 1.603070 1.643400 1.414800 | 44 4.38 65 43.42 65 33.20 65 33.10 65 33.14 65 32.77 65 27.21 65 27.21 65 27.21 65 30.61 65 30.61 65 39.44 | 5536 2929 5743 5529 2007 9733 1629 1526 7335 1647 2500 1602 1602 1602 1602 1602 | | |
| [| [min] W 5.75e-3 8 6.46e-3 9 7.46e-3 9 7.26e-3 0 7.3e-3 0 7.0e-3 | 00415.50 0410.89160 7.5159401 7.6501504 7.9122604 8.1808704 8.1808704 8.2668204 8.2668204 8.2668204 8.3268204 8.6268204 | [counts] 2.181564 2.16044 3.903394 3.64587 1.563034 1.47180 1.52983 1.34886 1.32673 1.53957 1.60307 1.66340 1.46940 1.41490 | 14 4.30 15 43.44 15 43.43 15 33.12 15 33.00 15 33.00 15 29.55 15 30.9 15 27.2 15 30.9 15 30.9 15 30.9 15 30.9 15 30.9 16 30. | 5536 2929 5743 5529 2007 37529 2007 37335 6447 2500 8847 2500 8847 2500 8847 2500 8847 2500 8847 2500 8847 2500 8847 2500 8847 2500 8847 2500 8847 2500 8847 2500 8847 2500 8847 2500 8847 2500 8847 8847 8847 8847 8847 8847 8847 88 | | |
| 8 [mla] 1 0.407 8 2 0.584 8 3 1.072 8 4 1.52 8 6 1.969 9 6 2.334 8 9 3.272 8 10 3.555 8 11 3.77 8 12 4.004 8 13 4.219 8 14 4.424 8 15 4.623 8 16 4.812 8 | [min] V 5.75e-3 8 6.45e-3 8 7.45e-3 9 7.26e-3 9 7.26e-3 9 7.26e-3 10 7. | 00000000000000000000000000000000000000 | 2.181564 2.160844 2.903399 2.649464 1.563329 1.471864 1.363729 1.347829 1.356729 1.523279 1.523279 1.603279 1.523279 1.603279 1.523279 1.603279 1.6 | 14 4.34 15 43.44 15 18.20 15 33.12 15 33.06 15 31.42 15 32.77 15 27.11 15 32.77 15 32.77 15 32.77 15 32.77 15 32.65 16 30.66 16 30.66 16 30.66 17 30.66 18 30.6 | 5536 2529 2529 2529 2529 2527 2527 2527 2527 | | |
| [| [min] V 5.75e-3 8 6.45e-3 8 7.45e-3 9 7.26e-3 9 7.26e-3 9 7.26e-3 10 7. | 00415.50 0410.89160 7.5159401 7.6501504 7.9122604 8.1808704 8.1808704 8.2668204 8.2668204 8.2668204 8.3268204 8.6268204 | [counts] 2.181564 2.16044 3.903394 3.64587 1.563034 1.47180 1.52983 1.34886 1.32673 1.53957 1.60307 1.66340 1.46940 1.41490 | 14 4.34 15 43.44 15 18.20 15 33.12 15 33.06 15 31.42 15 32.77 15 27.11 15 32.77 15 32.77 15 32.77 15 32.77 15 32.65 16 30.66 16 30.66 16 30.66 17 30.66 18 30.6 | 5536 2529 2529 2529 2529 2527 2527 2527 2527 | | |
| 8 [mla] 1 0.407 8 2 0.584 8 3 1.072 8 4 1.52 8 6 1.969 9 6 2.334 8 9 3.272 8 10 3.555 8 11 3.77 8 12 4.004 8 13 4.219 8 14 4.424 8 15 4.623 8 16 4.812 8 | [min] V 5.75e-3 8 6.45e-3 8 7.45e-3 9 7.26e-3 9 7.26e-3 9 7.26e-3 10 7. | 00000000000000000000000000000000000000 | [counts] 2.181564 2.16044 3.90339 1.64346 1.563333 1.47186 1.358759 1.348884 1.358759 1.60379 | 14 4.36 15 43.4 15 43.2 15 19.2 15 33.1 15 33.7 15 27.2 15 30.9 15 32.7 15 27.2 15 30.9 15 30.6 15 30.6 15 30.6 15 30.6 15 30.6 15 30.6 15 30.6 15 30.6 16 | 5536 2529 2529 2529 2529 2527 2527 2527 2527 | | |

Learn more about the GC Racer's

• Performance Data: Heating Power > Heating Performance > RT Precision





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Good People, Top-notch Products and Excellent Service

Interface: Our Fast GC Accessories interface with the host GC by sensing the current applied to the oven heater. A current transformer snaps around one of the heater wires of the GC. That's it! Simple, Easy, non-Intrusive.

The GC Racer applies a proportionate amount of current to the accessory heater whenever oven heater current is sensed. Both heaters work together to achieve fast temperature programming up to 120°C/min.



The GC Chaser
determines the end of
the temperature program
when the oven current is
stopped. The blower
turns on to start the fast
oven cool-down cycle
and stops automatically
when the oven reaches
the start temperature.





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