# Panther Sensitivity Chart

| Gas Type Name | Trade Name | Gas Group 1-5 | Chemical Formula | Molecular Weight | Response Factor (He = 1) | Minimum Sensitivity | | | | Calc. (C) or Tested (T) | Conductivity at 400 K mW/mK | Conductivity vs Air mW/mK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | ppm | cc/sec | mg/m³ | g/yr | | | |
| Air | | | | | | | | | | | 33.3 | 0 |
| GAS GROUP 1a | | | | 6.0 | 1 | 200 | 6.7E-06 | 49 | 0.052 | | | |
| GAS GROUP 1b | | | | 150.0 | 1 | 200 | 6.7E-06 | 1227 | 1.290 | | | |
| GAS GROUP 2a | | | | 15.0 | 2.5 | 400 | 1.3E-05 | 245 | 0.258 | | | |
| GAS GROUP 2b | | | | 84.0 | 2.5 | 400 | 1.3E-05 | 1374 | 1.445 | | | |
| GAS GROUP 3a | | | | 20.0 | 4 | 600 | 2.0E-05 | 491 | 0.516 | | | |
| GAS GROUP 3b | | | | 61.0 | 4 | 600 | 2.0E-05 | 1497 | 1.574 | | | |
| GAS GROUP 4a | | | | 26.0 | 8 | 1000 | 3.3E-05 | 1063 | 1.118 | | | |
| GAS GROUP 4b | | | | 48.0 | 8 | 1000 | 3.3E-05 | 1963 | 2.064 | | | |
| GAS GROUP 5 | | | | 36.0 | 16 | 3000 | 1.0E-04 | 4417 | 4.643 | | | |
| Helium | | 1 | He | 4.0 | 1.0 | 150 | 5.0E-06 | 25 | 0.026 | T | 190.6 | 157.3 |
| Hydrogen | | 1 | $H_2$ | 2.0 | 0.6 | 97 | 3.2E-06 | 8 | 0.008 | T | 230.4 | 197.1 |
| Sulfur hexafluoride | | 1 | $SF_6$ | 146.1 | 1.4 | 217 | 7.2E-06 | 1298 | 1.364 | C | 20.6 | -12.7 |
| Xenon | | 1 | Xe | 131.3 | 1.4 | 217 | 7.2E-06 | 1165 | 1.225 | T | 7.3 | -26 |
| m-Xylene | | 1 | $C_8H_{10}$ | 106.0 | 1.9 | 280 | 9.3E-06 | 1215 | 1.277 | C | 17.71 | -15.59 |
| Perfluorocyclobutane | C318 | 1 | $C_4F_8$ | 200.0 | 1.2 | 178 | 5.9E-06 | 1457 | 1.531 | C | 19.5 | -13.8 |
| Refrigerant R 448a | R448a | 1 | 26% $CH_2F_2$ · 26% $C_2HF_5$ · 21% $C_2H_2F_4$ · 7% $C_3H_2F_4$ · 7% $C_3H_2F_4$ · 20% $C_3H_2F_4$ | 189.9 | 1.9 | 285 | 9.5E-06 | 2214 | 2.327 | C | | |
| Halon 1301 | R13B1 | 1 | $CBrF_3$ | 148.9 | 1.2 | 180 | 6.0E-06 | 1096 | 1.152 | C | | |
| Toluene | | 2 | $C_7H_8$ | 92.0 | 2.1 | 321 | 1.1E-05 | 1209 | 1.271 | C | 19.3 | -14 |
| Ammonia | R717 | 2 | $NH_3$ | 17.0 | 2.9 | 428 | 1.4E-05 | 298 | 0.313 | C | 37.4 | 4.1 |
| Pentane | | 2 | $C_5H_{12}$ | 72.2 | 2.9 | 429 | 1.4E-05 | 1266 | 1.331 | C | 24.9 | -8.4 |
| Tetrafluoropropene | R1234yf | 2 | $C_3H_2F_4$ | 114.0 | 2.5 | 372 | 1.2E-05 | 1736 | 1.825 | T | | |
| Tetrafluoroethane | R134a | 2 | $C_2H_2F_4$ | 102.0 | 2.9 | 432 | 1.4E-05 | 1803 | 1.895 | T | 14 | -19.3 |
| Tetrafluoromethane | R14 | 2 | $CF_4$ | 88.0 | 2.2 | 337 | 1.1E-05 | 1212 | 1.274 | C | 24.1 | -9.2 |
| Refrigerant R 404a | R404a | 2 | 44±2% $C_2HF_5$ · 52±1% $C_2H_3F_3$ · 4±2% $C_2H_2F_4$ | 97.6 | 2.8 | 420 | 1.4E-05 | 1677 | 1.762 | C | | |
| Refrigerant R 407c | R407c | 2 | 23±2% $CH_2F_2$ · 25±2% $C_2HF_5$ · 52±2% $C_2H_2F_4$ | 86.2 | 3.2 | 480 | 1.6E-05 | 1692 | 1.779 | C | | |
| Refrigerant R 410a | R410a | 2 | 50% $CH_2F_2$ · 50% $CHF_2CF_3$ | 72.6 | 3.8 | 570 | 1.9E-05 | 1693 | 1.779 | C | | |
| Refrigerant R 449a | R449a | 2 | 24.3% $CH_2F_2$ · 24.7% $C_2HF_5$ · 25.7% $C_2H_2F_4$ · 25.3% $C_3H_2F_4$ | 87.2 | 2.2 | 327 | 1.1E-05 | 1166 | 1.226 | C | | |
| Krypton | | 2 | Kr | 83.8 | 2.3 | 345 | 1.2E-05 | 1182 | 1.243 | C | 12.3 | -21 |
| Methane | | 3 | $CH_4$ | 16.0 | 4.0 | 601 | 2.0E-05 | 394 | 0.415 | T | 49.1 | 15.8 |
| Isobutane | R600a | 3 | $C_4H_{10}$ | 58.1 | 3.8 | 577 | 1.9E-05 | 1372 | 1.442 | T | 27.9 | -5.4 |
| Isopropanol | | 3 | $C_3H_8O$ | 60.0 | 3.8 | 577 | 1.9E-05 | 1416 | 1.489 | C | | |
| Butane | | 3 | $C_4H_{10}$ | 58.1 | 4.6 | 683 | 2.3E-05 | 1624 | 1.708 | T | 28.4 | -4.9 |
| Isobutylene | | 3 | $C_4H_8$ | 55.1 | 3.6 | 536 | 1.8E-05 | 1209 | 1.271 | T | | |
| Sulfur dioxide | | 3 | $SO_2$ | 64.1 | 3.4 | 514 | 1.7E-05 | 1347 | 1.416 | C | 14.3 | -19 |
| Ethylene oxide | | 3 | $C_2H_4O$ | 54.0 | 4.8 | 718 | 2.4E-05 | 1585 | 1.666 | C | 25 | -8.3 |
| Argon | | 4 | Ar | 40.0 | 6.6 | 990 | 3.3E-05 | 1617 | 1.700 | T | 22.6 | -10.7 |
| Carbon dioxide | R774 | 4 | $CO_2$ | 44.0 | 5.6 | 836 | 2.8E-05 | 1506 | 1.583 | T | 25.1 | -8.2 |
| Propane | R290 | 4 | $C_3H_8$ | 44.1 | 6.1 | 917 | 3.1E-05 | 1654 | 1.739 | T | 30.6 | -2.7 |
| Nitrogen | | 4 | $N_2$ | 28.0 | 9.2 | 1377 | 4.6E-05 | 1578 | 1.659 | C | 32.3 | -1 |
| Nitrous oxide | | 4 | $N_2O$ | 44.0 | 7.3 | 1095 | 3.6E-05 | 1971 | 2.072 | T | 26 | -7.3 |
| Acetylene | | 4 | $C_2H_2$ | 26.0 | 6.9 | 1036 | 3.5E-05 | 1103 | 1.160 | C | 45.4 | 12.1 |
| Ethylene | | 4 | $C_2H_4$ | 28.1 | 9.3 | 1399 | 4.7E-05 | 1605 | 1.688 | C | 34.6 | 1.3 |
| Carbon monoxide | | 4 | CO | 28.0 | 9.2 | 1377 | 4.6E-05 | 1578 | 1.659 | C | 32.3 | -1 |
| Methanol | | 5 | $CH_4O$ | 32.0 | 22.6 | 3387 | 1.1E-04 | 4439 | 4.666 | C | 26.2 | -7.1 |
| Oxygen | | 5 | $O_2$ | 32.0 | 22.6 | 3387 | 1.1E-04 | 4433 | 4.660 | C | 33.7 | 0.4 |
| Nitric oxide | | 5 | NO | 30.0 | 13.2 | 1986 | 6.6E-05 | 2438 | 2.563 | C | 33.1 | -0.2 |


IO-004300-CD V4
March 2026