|  |  |  |
| --- | --- | --- |
| LMS100 Engine Performance Metrics | Air Standard Assumption | |
| Thermal efficiency | 0.5938 |
| Heat Rate (kJ/kWh) | 6062.40 |
| Specific Work (kW/(kg/s)) | 748.25 |
| Turbine exhaust temperature（°C） | 374.72 |
| Cold Air Standard Assumption | |
| Thermal efficiency | 0.6144 |
| Heat Rate (kJ/kWh) | 5859.24 |
| Specific Work (kW/(kg/s)) | 671.46 |
| Turbine exhaust temperature（°C） | 294.64 |

LMS100 Engine Performance Metrics

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Stage | P(Bar)  Air Standard | P(Bar) Cold Air Standard | T(K)  Air Standard | T(K)  Cold Air Standard | s(kJ/kmol) Air Standard | s(kJ/kmol) Cold Air Standard |
| 2 | 101.3 | 101.3 | 288.15 | 288.15 | 1000 | 1000 |
| 23 | 405.2 | 405.2 | 426.87 | 428.31 | 1000 | 1000 |
| 25 | 405.2 | 405.2 | 288.15 | 288.15 | 988.48 | 988.47 |
| 3 | 4.25e3 | 4.25e3 | 557.77 | 564.42 | 988.48 | 988.47 |
| 41 | 4.25e3 | 4.25e3 | 1.65e3 | 1.65e3 | 1.02e3 | 1.02e3 |
| 50 | 4.25e3 | 4.25e3 | 647.87 | 567.79 | 1.02e3 | 1.02e3 |

* We set the value of s at stage 2 to be 1000 arbitrarily.

LMS100 Engine Performance Metrics

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Stage | P(Bar)  4B | P(Bar)  7B | T(K)  4B | T(K)  7B | s(kJ/kmol) 4B | s(kJ/kmol) 7B |
| 2 | 101.3 | 101.3 | 288.15 | 288.15 | 0 | 6．69 |
| 23 | 405.2 | 405.2 | 445.40 | 445.09 | 0.0435 | 6.73 |
| 25 | 380.89 | 380.89 | 308.15 | 308.15 | -0.3128 | 6.38 |
| 3 | 4255 | 4255 | 658.55 | 647.73 | -0.2387 | 6.80 |
| 41 | 3999 | 3999 | 1653 | 1653 | 0.8508 | 7.97 |
| 46 | 1621 | 1699 | 1364 | 1393 | 0.8760 | 7.99 |
| 48 | 1000 | 1091 | 1229.6 | 1272 | 0.8915 | 8.01 |
| 50 | 101.3 | 101.3 | 728.69 | 760.44 | 0.9590 | 8.08 |

S2 of part 2 b is set to be 0 arbitrarily, s of part 7B is absolute s.

|  |  |  |
| --- | --- | --- |
| LMS 100 | 4b | |
| Thermal efficiency | 48.67% |
| Heat Rate (kJ/kWh) | 7396.083338 (kJ/kWh) |
| Specific Work (kW/(kg/s)) | 566.628506 (kW/(kg/s)) |
| Turbine exhaust temperature（°C） | 455.536926 (。C) |
| 7b | |
| Thermal efficiency | 47.420880 % |
| Heat Rate (kJ/kWh) | 7591.592507 (kJ/kWh) |
| Specific Work (kW/(kg/s)) | 615.946321 (kW/(kg/s)) |
| Turbine exhaust temperature（°C） | 487.285899 (。C) |