```
Unprotect[Integrate]; (* Core in yellow *)

∫ω_. 𝔼[L_] 𝕕(vs_List) :=

  Module[{n, L0, Q, Δ, G, Z0, Z, λ, DZ, DDZ, FZ,
    a, b},
   n = Length@vs; L0 = L /. ϵ → 0;
   Q = Table[(-∂vs⟦a⟧,vs⟦b⟧ L0) /. Thread[vs → 0] /.
      (p | x)__ → 0, {a, n}, {b, n}];
   If[(Δ = Det[Q]) == 0, Return@"Degenerate Q!"];
   Z = Z0 = CF@$π[L + vs.Q.vs / 2]; G = Inverse[Q];
   FixedPoint[(DZ = Table[∂vZ, {v, vs}];
      DDZ = Table[∂uDZ, {u, vs}];
      FZ = Sum[G⟦a, b⟧ (DDZ⟦a, b⟧ + DZ⟦a⟧ × DZ⟦b⟧),
        {a, n}, {b, n}] / 2;
      Z = CF[Z0 + ∫0λ $π[FZ] 𝕕λ]) &, Z];
   PowerExpand@Factor[ω Δ^-1/2] ×
    𝔼[CF[Z /. λ → 1 /. Thread[vs → 0]]]];

Protect[Integrate];
```