

## TLF-LED

- Ideal for installation in hospital operating rooms
- Integral LED luminaire with tunable color temperature @ 90 CRI
- Roomside accessible control enclosure
- Perforated face quickly removes by loosening quarter-turn fasteners
- Retainer cables prevent the perforated face from falling after removal
- Internal baffles to distribute air evenly over perforated face
- Compatible with 1" or 1½" T-bar ceiling grids



TLF-LED



hospitals

surgical

cleanrooms

research labs



See website for Specifications

### MODELS:

TLF-AA-LED / Aluminum  
TLF-SS-LED / 304 Stainless Steel

### FINISHES:

Standard Finish - #26 White  
Optional Finish - #04 Mill

### OVERVIEW

#### Vertical Laminar Flow Technology

TLF-LED laminar flow diffusers are the industry standard for unidirectional flow. When unidirectional flow is desired, typically in areas classified as ISO 1 to 5, TLF-LED is the choice.

TLF-LED diffusers can be used to create clean zones by positioning the diffuser directly over the area to be washed with clean air. Clean zones are typically used as process areas within a cleanroom.

TLF-LED diffusers are also used in most operating rooms as the center diffuser and many times these diffusers are surrounded by a linear air curtain. The vertical piston of air created by the TLF-LED is used to discharge clean air over the patient during surgery or surgical procedures.

The integration of high-output, high-efficiency LED lighting eliminates the need for specialized luminaires around the perimeter of the diffuser array. The integrated LED lighting improves lighting quality over the operating table or workspace with more direct lighting and less shadows. Eliminating the need for the perimeter lighting reduces installed components, enabling more flexibility for placement of diffusers and ceiling mounted equipment.

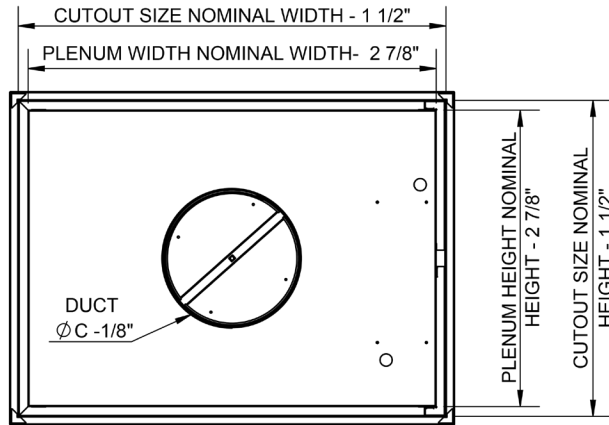
Unidirectional flow minimizes air induction, reducing the opportunity for contaminated air to be re-entrained and pollute a clean airstream.

The TLF-LED Series of laminar flow diffusers generates a low velocity, evenly distributed, downward moving "piston" of conditioned air.

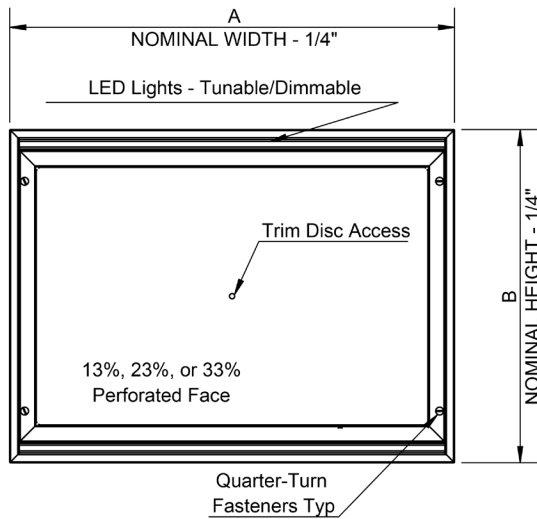
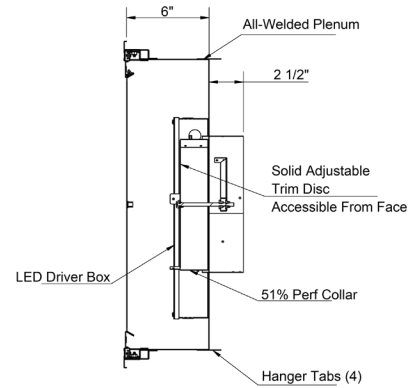
Installed over the operating table in a hospital operating room, TLF-LED diffusers help protect the patient from contaminated room secondary air. The only appreciable amount of room air entrainment occurs at the boundaries of the moving air mass, outside the confines of the operating table. As a result, the patient is effectively isolated from residual room air.

TLF-LED is especially effective in cooling areas with heavy, localized, internal loads, as in computer rooms. The column of air delivered by the TLF-LED cools the load source directly without generating high velocities in the occupied space.

TLF-LED UNIT DIMENSIONS



ALL COMPONENTS ARE ROOM SIDE ACCESSIBLE



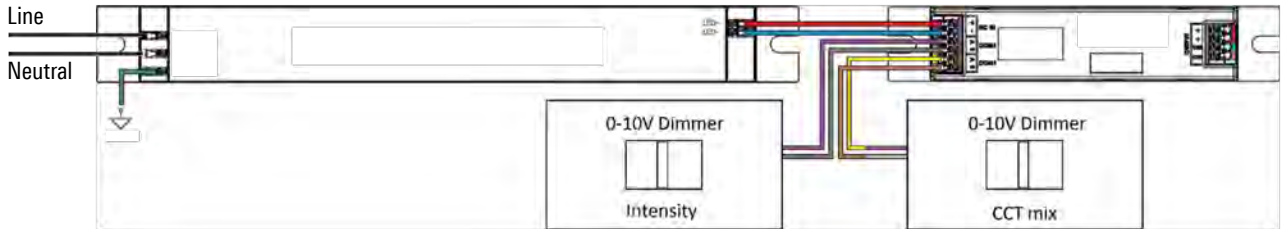
Note: LED Lights run parallel to width of diffuser.

| Module Size | A      | B      |
|-------------|--------|--------|
| 24 x 12     | 23 3/4 | 11 3/4 |
| 24 x 24     | 23 3/4 | 23 3/4 |
| 36 x 12     | 35 3/4 | 11 3/4 |
| 48 x 12     | 47 3/4 | 11 3/4 |
| 48 x 24     | 47 3/4 | 23 3/4 |
| 60 x 12     | 59 3/4 | 11 3/4 |
| 60 x 24     | 59 3/4 | 23 3/4 |

| Nominal Inlet Size | C      |
|--------------------|--------|
| 6                  | 5 7/8  |
| 8                  | 7 7/8  |
| 10                 | 9 7/8  |
| 12                 | 11 7/8 |

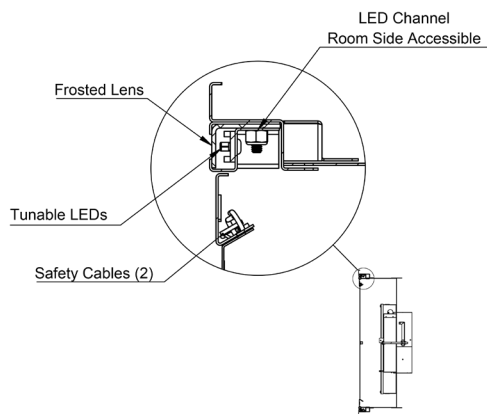
UNIT WIRING

Unit Wiring

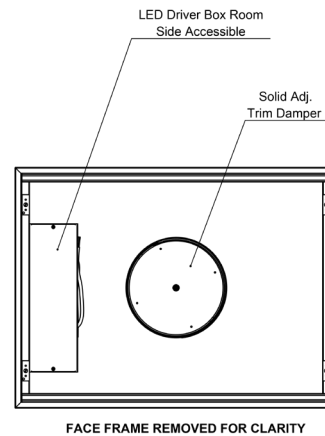


Note: Dimmers to be provided by others. Tunable White and Tunable Green to White configurations require dimmers for both intensity and color temperature.

Integrated LED Detail



Control Enclosure Access



## TLF-AA-LED AND TLF-SS-LED

| 7" Round Inlet   | Airflow (CFM)       | 100   | 120   | 140   | 160   | 180   | 220   | 240   | 260   | 300   |
|------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 48" x 12" Module | Total Pressure      | 0.035 | 0.050 | 0.068 | 0.090 | 0.114 | 0.170 | 0.200 | 0.235 | 0.313 |
|                  | NC (Noise Criteria) | 11    | 16    | 20    | 24    | 28    | 34    | 37    | 40    | 44    |
| 60" x 12" Module | Total Pressure      | 0.035 | 0.050 | 0.068 | 0.090 | 0.114 | 0.170 | 0.200 | 0.235 | 0.313 |
|                  | NC (Noise Criteria) | 11    | 16    | 20    | 24    | 28    | 34    | 37    | 40    | 44    |
| 24" x 24" Module | Total Pressure      | 0.035 | 0.050 | 0.068 | 0.090 | 0.114 | 0.170 | 0.200 | 0.235 | 0.313 |
|                  | NC (Noise Criteria) | 11    | 16    | 20    | 24    | 28    | 34    | 37    | 40    | 44    |
| 48" x 24" Module | Total Pressure      | 0.035 | 0.050 | 0.068 | 0.090 | 0.114 | 0.170 | 0.200 | 0.235 | 0.313 |
|                  | NC (Noise Criteria) | 11    | 16    | 20    | 24    | 28    | 33    | 36    | 39    | 43    |

| 8" Round Inlet   | Airflow (CFM)       | 100   | 120   | 140   | 160   | 180   | 220   | 240   | 260   | 300   |
|------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 48" x 24" Module | Total Pressure      | 0.020 | 0.027 | 0.038 | 0.050 | 0.062 | 0.090 | 0.113 | 0.130 | 0.175 |
|                  | NC (Noise Criteria) | -     | -     | 14    | 18    | 22    | 28    | 31    | 33    | 37    |
| 60" x 24" Module | Total Pressure      | 0.020 | 0.027 | 0.038 | 0.049 | 0.061 | 0.089 | 0.109 | 0.126 | 0.168 |
|                  | NC (Noise Criteria) | -     | -     | 14    | 18    | 22    | 28    | 31    | 33    | 37    |

| 10" Round Inlet  | Airflow (CFM)       | 215   | 240   | 265   | 295   | 320   | 345   | 400   | 425   | 515   |
|------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 48" x 24" Module | Total Pressure      | 0.043 | 0.053 | 0.065 | 0.080 | 0.094 | 0.110 | 0.147 | 0.166 | 0.244 |
|                  | NC (Noise Criteria) | 19    | 22    | 25    | 28    | 31    | 33    | 38    | 40    | 45    |
| 60" x 24" Module | Total Pressure      | 0.043 | 0.053 | 0.065 | 0.079 | 0.094 | 0.110 | 0.147 | 0.166 | 0.244 |
|                  | NC (Noise Criteria) | 19    | 22    | 25    | 28    | 31    | 33    | 38    | 40    | 45    |

| 12" Round Inlet  | Airflow (CFM)       | 215   | 240   | 265   | 295   | 320   | 345   | 400   | 425   | 515   |
|------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 48" x 24" Module | Total Pressure      | 0.023 | 0.029 | 0.035 | 0.043 | 0.051 | 0.059 | 0.080 | 0.090 | 0.132 |
|                  | NC (Noise Criteria) | 11    | 15    | 18    | 22    | 24    | 27    | 32    | 34    | 40    |
| 60" x 24" Module | Total Pressure      | 0.023 | 0.029 | 0.035 | 0.043 | 0.051 | 0.059 | 0.080 | 0.090 | 0.132 |
|                  | NC (Noise Criteria) | 11    | 15    | 18    | 22    | 24    | 27    | 32    | 34    | 40    |

- All data based on full open disc position
- NC values are based on a room absorption of 10 dB.
- Data obtained in accordance with ASHRAE Standard 70-2006 and ASHRAE Standard 113-2013
- See the section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for throw information