



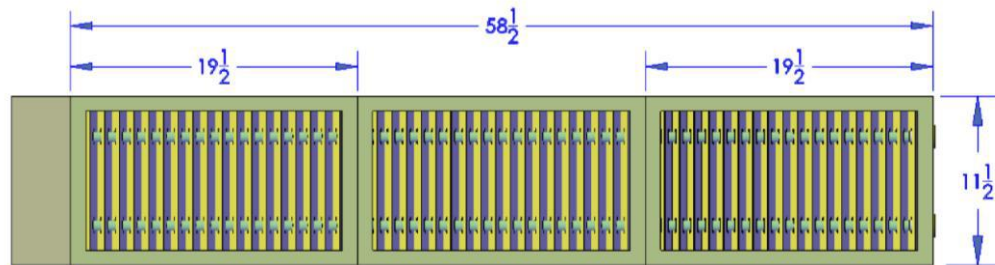
# 2008 PCP COMPOUND APPLICATIONS GUIDE

## INTRODUCTION

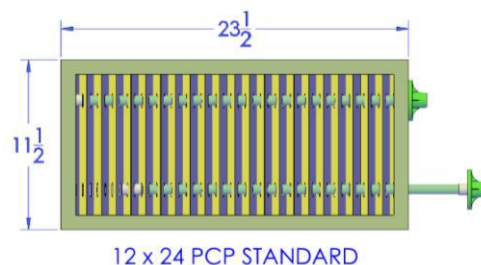
The Compound Populated Catalyst Panel (PCP Compound) is a combination of PCP Standard and Drop-In technologies. It may be used in conjunction with panels from either genre. This type of panel may be used in all air handlers with side load or front load access. It is used to reduce the levels of Volatile Organic Compounds (VOCs) and viable airborne biological contaminants in airstreams, such as Air Handling Units (AHUs), Roof-Top Units (RTUs) or in the ductwork. The PCP Compound is a “scalable” technology; it may be engineered for any size air stream using combinations of standard sizes, or by designing custom units for the non-standard pathways. All Pura Vida Air Systems products incorporate 3-step PCO technology: MERV Filtration, UVGI Lamps and Photocatalysis.

## DIMENSIONAL DATA

A PCP Compound is comprised of PCP Standards connected together with a ballast tray. For example, the drawing below shows three 12”x 20”x 6” PCP Standards clipped together and attached to the spacer/ballast tray. The designation for this style unit requires two numbers. The first is the height, either 12”, 16”, 20” or 24”. The second number is the nominal length of all PCP Standards built into the unit. A possible letter E located after the length number will designate an external ballast tray is needed. The unit below would be a PCP Compound 1260. The lamps (this example uses 59” lamps) are then inserted through the holes and attached to the ballast tray by Green sleeves. These are collars permanently mounted to the lamps.



The PCP Compound is comprised of PCP Standards. As with the Compounds, the Standard’s first dimension is the measurement of the panel across the lamps; the second measurement is along the lamps.



All PCP Compound units are 6” deep nominal; actual dimension is 5 13/16”. The catalyst is pleated at one pleat per inch. The lamps are spaced 6” from each other on all models, then centered over the width of the panel. The ballast tray is incorporated into the unit to house the ballasts internally and to protect the lamps from damage.



The table below contains all dimensional data for each of the PCP Compounds.

All PCP Compounds are rated at 500 fpm. As residence time is the most critical factor in designing a viable solution, do not exceed 500 fpm. Each panel has a 0.05” H<sub>2</sub>O pressure drop @ 500 FPM.

### Complete List of PCP Compounds by Pura Vida Air Systems

| PROPRIETARY AND CONFIDENTIAL |                    |                   |                      |               |  |       |             |              |            |           |                         |                        |                        |
|------------------------------|--------------------|-------------------|----------------------|---------------|--|-------|-------------|--------------|------------|-----------|-------------------------|------------------------|------------------------|
|                              | Height Designation | Width Designation | Built From Standards | Actual Height | Total Length with Ballast Tray and Bolted Frames | Lamps | Lamp Length | Amp per Lamp | Total Amps | UVC Watts | Approx Weight Gal. lbs. | Approx Weight SS. lbs. | Approx Weight AL. lbs. |
| 1212                         | 1                  | 12 12             | 12                   | 11.5          | 14,938   | 2     | 12"         | 0.224        | 0.45       | 7         | 7.348                   | 6.488                  | 5.286                  |
| 1216                         | 2                  | 12 16             | 16                   | 11.5          | 18,938   | 2     | 16"         | 0.296        | 0.59       | 9         | 8.224                   | 7.364                  | 6.162                  |
| 1220                         | 3                  | 12 20             | 20                   | 11.5          | 22,938   | 2     | 20"         | 0.367        | 0.73       | 15        | 9.099                   | 8.239                  | 7.038                  |
| 1221                         | 4                  | 12 21             | 21                   | 11.5          | 24,063   | 2     | 20"         | 0.367        | 0.73       | 15        | 9.335                   | 8.475                  | 7.273                  |
| 1224                         | 5                  | 12 24             | 24                   | 11.5          | 26,938   | 2     | 24"         | 0.519        | 1.04       | 18        | 9.975                   | 9.115                  | 7.913                  |
| 1228                         | 6                  | 12 28             | 16 12                | 11.5          | 30,438   | 2     | 28"         | 0.604        | 1.21       | 21        | 12.327                  | 11.030                 | 9.218                  |
| 1232                         | 7                  | 12 32             | 22 9                 | 11.5          | 34,438   | 2     | 31"         | 0.659        | 1.32       | 24        | 13.203                  | 11.906                 | 10.093                 |
| 1233                         | 8                  | 12 33             | 24 9                 | 11.5          | 35,938   | 2     | 31"         | 0.659        | 1.32       | 24        | 13.489                  | 12.192                 | 10.379                 |
| 1236                         | 9                  | 12 36             | 24 12                | 11.5          | 38,438   | 2     | 36"         | 0.752        | 1.50       | 27        | 14.078                  | 12.781                 | 10.969                 |
| 1237                         | 10                 | 12 37             | 24 13                | 11.5          | 39,688   | 2     | 36"         | 0.752        | 1.50       | 27        | 14.331                  | 13.034                 | 11.221                 |
| 1240                         | 11                 | 12 40             | 20 20                | 11.5          | 42,438   | 2     | 40"         | 0.844        | 1.69       | 30        | 14.954                  | 13.657                 | 11.845                 |
| 1241                         | 12                 | 12 41             | 21 20                | 11.5          | 43,563   | 2     | 40"         | 0.844        | 1.69       | 30        | 15.190                  | 13.892                 | 12.080                 |
| 1244                         | 13                 | 12 44             | 24 20                | 11.5          | 46,438   | 2     | 44"         | 0.908        | 1.82       | 32        | 15.829                  | 14.532                 | 12.720                 |
| 1245                         | 14                 | 12 45             | 24 21                | 11.5          | 47,563   | 2     | 44"         | 0.908        | 1.82       | 32        | 16.065                  | 14.768                 | 12.956                 |
| 1246                         | 15                 | 12 46             | 24 22                | 11.5          | 48,938   | 2     | 44"         | 0.908        | 1.82       | 32        | 16.334                  | 15.037                 | 13.225                 |
| 1248                         | 16                 | 12 48             | 24 24                | 11.5          | 50,438   | 2     | 48"         | 0.981        | 1.96       | 36        | 16.705                  | 15.408                 | 13.596                 |
| 1252                         | 17                 | 12 52             | 24 16 12             | 11.5          | 53,938   | 2     | 51.5"       | 1.033        | 2.07       | 38.5      | 19.057                  | 17.323                 | 14.900                 |
| 1253                         | 18                 | 12 53             | 24 20 9              | 11.5          | 55,438   | 2     | 51.5"       | 1.033        | 2.07       | 38.5      | 19.343                  | 17.609                 | 15.186                 |
| 1256                         | 19                 | 12 56             | 24 22 9              | 11.5          | 57,938   | 2     | 55"         | 1.105        | 2.21       | 41        | 19.933                  | 18.199                 | 15.776                 |
| 1257                         | 20                 | 12 57             | 24 24 9              | 11.5          | 59,438   | 2     | 55"         | 1.105        | 2.21       | 41        | 20.219                  | 18.485                 | 16.062                 |
| 1259                         | 21                 | 12 59             | 21 21 17             | 11.5          | 61,688   | 2     | 59"         | 1.17         | 2.34       | 44        | 20.690                  | 18.956                 | 16.533                 |
| 1260                         | 22                 | 12 60             | 24 24 12             | 11.5          | 61,938   | 2     | 59"         | 1.17         | 2.34       | 44        | 20.808                  | 19.074                 | 16.652                 |
| 1261                         | 23                 | 12 61             | 24 24 14a            | 11.5          | 63,438   | 2     | 59"         | 1.17         | 2.34       | 44        | 21.095                  | 19.360                 | 16.938                 |
| 1262                         | 24                 | 12 62             | 24 24 14b            | 11.5          | 64,188   | 2     | 59"         | 1.17         | 2.34       | 44        | 21.280                  | 19.546                 | 17.123                 |
| 1612                         | 25                 | 16 12             | 12                   | 15.5          | 14,938   | 3     | 12"         | 0.224        | 0.67       | 7         | 9.753                   | 8.556                  | 6.883                  |
| 1616                         | 26                 | 16 16             | 16                   | 15.5          | 18,938   | 3     | 16"         | 0.296        | 0.89       | 9         | 10.741                  | 9.544                  | 7.871                  |
| 1620                         | 27                 | 16 20             | 20                   | 15.5          | 22,938   | 3     | 20"         | 0.367        | 1.10       | 15        | 11.730                  | 10.532                 | 8.860                  |
| 1621                         | 28                 | 16 21             | 21                   | 15.5          | 24,063   | 3     | 20"         | 0.367        | 1.10       | 15        | 11.994                  | 10.796                 | 9.124                  |
| 1624                         | 29                 | 16 24             | 24                   | 15.5          | 26,938   | 3     | 24"         | 0.519        | 1.56       | 18        | 12.718                  | 11.521                 | 9.848                  |
| 1628                         | 30                 | 16 28             | 16 12                | 15.5          | 30,438   | 3     | 28"         | 0.604        | 1.81       | 21        | 15.855                  | 14.030                 | 11.482                 |
| 1632                         | 31                 | 16 32             | 22 9                 | 15.5          | 34,438   | 3     | 31"         | 0.659        | 1.98       | 24        | 16.843                  | 15.019                 | 12.470                 |
| 1633                         | 32                 | 16 33             | 24 9                 | 15.5          | 35,938   | 3     | 31"         | 0.659        | 1.98       | 24        | 17.157                  | 15.333                 | 12.784                 |
| 1636                         | 33                 | 16 36             | 24 12                | 15.5          | 38,438   | 3     | 36"         | 0.752        | 2.26       | 27        | 17.831                  | 16.007                 | 13.458                 |
| 1637                         | 34                 | 16 37             | 24 13                | 15.5          | 39,688   | 3     | 36"         | 0.752        | 2.26       | 27        | 18.112                  | 16.288                 | 13.739                 |
| 1640                         | 35                 | 16 40             | 20 20                | 15.5          | 42,438   | 3     | 40"         | 0.844        | 2.53       | 30        | 18.820                  | 16.995                 | 14.447                 |
| 1641                         | 36                 | 16 41             | 21 20                | 15.5          | 43,563   | 3     | 40"         | 0.844        | 2.53       | 30        | 19.084                  | 17.259                 | 14.711                 |
| 1644                         | 37                 | 16 44             | 24 20                | 15.5          | 46,438   | 3     | 44"         | 0.908        | 2.72       | 32        | 19.808                  | 17.984                 | 15.435                 |
| 1645                         | 38                 | 16 45             | 24 21                | 15.5          | 47,563   | 3     | 44"         | 0.908        | 2.72       | 32        | 20.072                  | 18.248                 | 15.699                 |
| 1646                         | 39                 | 16 46             | 24 22                | 15.5          | 48,938   | 3     | 44"         | 0.908        | 2.72       | 32        | 20.370                  | 18.545                 | 15.996                 |
| 1648                         | 40                 | 16 48             | 24 24                | 15.5          | 50,438   | 3     | 48"         | 0.981        | 2.94       | 36        | 20.797                  | 18.972                 | 16.424                 |
| 1652                         | 41                 | 16 52             | 24 16 12             | 15.5          | 53,938   | 3     | 51.5"       | 1.033        | 3.10       | 38.5      | 23.933                  | 21.482                 | 18.057                 |
| 1653                         | 42                 | 16 53             | 24 20 9              | 15.5          | 55,438   | 3     | 51.5"       | 1.033        | 3.10       | 38.5      | 24.247                  | 21.796                 | 18.371                 |
| 1656                         | 43                 | 16 56             | 24 22 9              | 15.5          | 57,938   | 3     | 55"         | 1.105        | 3.32       | 41        | 24.922                  | 22.470                 | 19.045                 |
| 1657                         | 44                 | 16 57             | 24 24 9              | 15.5          | 59,438   | 3     | 55"         | 1.105        | 3.32       | 41        | 25.236                  | 22.784                 | 19.360                 |
| 1659                         | 45                 | 16 59             | 21 21 17             | 15.5          | 61,688   | 3     | 59"         | 1.17         | 3.51       | 44        | 25.764                  | 23.312                 | 19.887                 |
| 1660                         | 46                 | 16 60             | 24 24 12             | 15.5          | 61,938   | 3     | 59"         | 1.17         | 3.51       | 44        | 25.910                  | 23.458                 | 20.034                 |
| 1661                         | 47                 | 16 61             | 24 24 14a            | 15.5          | 63,438   | 3     | 59"         | 1.17         | 3.51       | 44        | 26.224                  | 23.773                 | 20.348                 |
| 1662                         | 48                 | 16 62             | 24 24 14b            | 15.5          | 64,188   | 3     | 59"         | 1.17         | 3.51       | 44        | 26.438                  | 23.986                 | 20.562                 |
| 1728                         | 49                 | 17 28             | 25                   | 17            | 28,000   | 3     | 24"         | 0.519        | 1.56       | 18        | 14,000                  | 12,392                 | 10,142                 |
| 2012                         | 50                 | 20 12             | 12                   | 19.5          | 14,938   | 3     | 12"         | 0.224        | 0.67       | 7         | 11,014                  | 9,556                  | 7,518                  |
| 2016                         | 51                 | 20 16             | 16                   | 19.5          | 18,938   | 3     | 16"         | 0.296        | 0.89       | 9         | 12,115                  | 10,657                 | 8,619                  |
| 2020                         | 52                 | 20 20             | 20                   | 19.5          | 22,938   | 3     | 20"         | 0.367        | 1.10       | 15        | 13,217                  | 11,758                 | 9,721                  |
| 2021                         | 53                 | 20 21             | 21                   | 19.5          | 24,063   | 3     | 20"         | 0.367        | 1.10       | 15        | 13,509                  | 12,050                 | 10,013                 |
| 2024                         | 54                 | 20 24             | 24                   | 19.5          | 26,938   | 3     | 24"         | 0.519        | 1.56       | 18        | 14,318                  | 12,859                 | 10,822                 |
| 2028                         | 55                 | 20 28             | 16 12                | 19.5          | 30,438   | 3     | 28"         | 0.604        | 1.81       | 21        | 17,970                  | 15,770                 | 12,698                 |
| 2032                         | 56                 | 20 32             | 22 9                 | 19.5          | 34,438   | 3     | 31"         | 0.659        | 1.98       | 24        | 19,071                  | 16,872                 | 13,799                 |
| 2033                         | 57                 | 20 33             | 24 9                 | 19.5          | 35,938   | 3     | 31"         | 0.659        | 1.98       | 24        | 19,414                  | 17,214                 | 14,141                 |
| 2036                         | 58                 | 20 36             | 24 12                | 19.5          | 38,438   | 3     | 36"         | 0.752        | 2.26       | 27        | 20,173                  | 17,973                 | 14,900                 |
| 2037                         | 59                 | 20 37             | 24 13                | 19.5          | 39,688   | 3     | 36"         | 0.752        | 2.26       | 27        | 20,481                  | 18,282                 | 15,209                 |
| 2040                         | 60                 | 20 40             | 20 20                | 19.5          | 42,438   | 3     | 40"         | 0.844        | 2.53       | 30        | 21,274                  | 19,074                 | 16,001                 |
| 2041                         | 61                 | 20 41             | 21 20                | 19.5          | 43,563   | 3     | 40"         | 0.844        | 2.53       | 30        | 21,566                  | 19,366                 | 16,293                 |
| 2044                         | 62                 | 20 44             | 24 20                | 19.5          | 46,438   | 3     | 44"         | 0.908        | 2.72       | 32        | 22,375                  | 20,175                 | 17,103                 |
| 2045                         | 63                 | 20 45             | 24 21                | 19.5          | 47,563   | 3     | 44"         | 0.908        | 2.72       | 32        | 22,667                  | 20,468                 | 17,395                 |
| 2046                         | 64                 | 20 46             | 24 22                | 19.5          | 48,938   | 3     | 44"         | 0.908        | 2.72       | 32        | 22,993                  | 20,793                 | 17,720                 |
| 2048                         | 65                 | 20 48             | 24 24                | 19.5          | 50,438   | 3     | 48"         | 0.981        | 2.94       | 36        | 23,476                  | 21,277                 | 18,204                 |
| 2052                         | 66                 | 20 52             | 24 16 12             | 19.5          | 53,938   | 3     | 51.5"       | 1.033        | 3.10       | 38.5      | 27,128                  | 24,188                 | 20,080                 |
| 2053                         | 67                 | 20 53             | 24 20 9              | 19.5          | 55,438   | 3     | 51.5"       | 1.033        | 3.10       | 38.5      | 27,471                  | 24,530                 | 20,422                 |
| 2056                         | 68                 | 20 56             | 24 22 9              | 19.5          | 57,438   | 3     | 55"         | 1.105        | 3.32       | 41        | 28,230                  | 25,289                 | 21,181                 |
| 2057                         | 69                 | 20 57             | 24 24 9              | 19.5          | 59,438   | 3     | 55"         | 1.105        | 3.32       | 41        | 28,572                  | 25,631                 | 21,523                 |
| 2059                         | 70                 | 20 59             | 21 21 17             | 19.5          | 61,688   | 3     | 59"         | 1.17         | 3.51       | 44        | 29,156                  | 26,216                 | 22,107                 |
| 2060                         | 71                 | 20 60             | 24 24 12             | 19.5          | 61,938   | 3     | 59"         | 1.17         | 3.51       | 44        | 29,331                  | 26,390                 | 22,282                 |
| 2061                         | 72                 | 20 61             | 24 24 14a            | 19.5          | 63,438   | 3     | 59"         | 1.17         | 3.51       | 44        | 29,673                  | 26,733                 | 22,624                 |
| 2062                         | 73                 | 20 62             | 24 24 14b            | 19.5          | 64,188   | 3     | 59"         | 1.17         | 3.51       | 44        | 29,915                  | 26,974                 | 22,866                 |

|      |    |       |           |      |        |   |       |       |      |      |        |        |        |
|------|----|-------|-----------|------|--------|---|-------|-------|------|------|--------|--------|--------|
| 2412 | 74 | 24 12 | 12        | 23.5 | 14,938 | 4 | 12"   | 0.224 | 0.90 | 7    | 13,285 | 11,527 | 9,071  |
| 2416 | 75 | 24 16 | 16        | 23.5 | 18,938 | 4 | 16"   | 0.296 | 1.18 | 9    | 14,499 | 12,741 | 10,285 |
| 2420 | 76 | 24 20 | 20        | 23.5 | 22,938 | 4 | 20"   | 0.367 | 1.47 | 15   | 15,713 | 13,955 | 11,500 |
| 2421 | 77 | 24 21 | 21        | 23.5 | 24,063 | 4 | 20"   | 0.367 | 1.47 | 15   | 16,033 | 14,275 | 11,820 |
| 2424 | 78 | 24 24 | 24        | 23.5 | 26,938 | 4 | 24"   | 0.519 | 2.08 | 18   | 16,927 | 15,169 | 12,714 |
| 2426 | 79 | 24 28 | 16 12     | 23.5 | 30,438 | 4 | 28"   | 0.604 | 2.42 | 21   | 21,229 | 18,578 | 14,875 |
| 2432 | 80 | 24 32 | 22 9      | 23.5 | 34,438 | 4 | 31"   | 0.659 | 2.64 | 24   | 22,443 | 19,792 | 16,089 |
| 2433 | 81 | 24 33 | 24 9      | 23.5 | 35,938 | 4 | 31"   | 0.659 | 2.64 | 24   | 22,814 | 20,163 | 16,460 |
| 2436 | 82 | 24 36 | 24 12     | 23.5 | 38,438 | 4 | 36"   | 0.752 | 3.01 | 27   | 23,657 | 21,006 | 17,303 |
| 2437 | 83 | 24 37 | 24 13     | 23.5 | 39,688 | 4 | 36"   | 0.752 | 3.01 | 27   | 23,994 | 21,343 | 17,640 |
| 2440 | 84 | 24 40 | 20 20     | 23.5 | 42,438 | 4 | 40"   | 0.844 | 3.38 | 30   | 24,871 | 22,220 | 18,517 |
| 2441 | 85 | 24 41 | 21 20     | 23.5 | 43,563 | 4 | 40"   | 0.844 | 3.38 | 30   | 25,192 | 22,541 | 18,838 |
| 2444 | 86 | 24 44 | 24 20     | 23.5 | 46,438 | 4 | 44"   | 0.908 | 3.63 | 32   | 26,085 | 23,434 | 19,731 |
| 2445 | 87 | 24 45 | 24 21     | 23.5 | 47,563 | 4 | 44"   | 0.908 | 3.63 | 32   | 26,406 | 23,755 | 20,052 |
| 2446 | 88 | 24 46 | 24 22     | 23.5 | 48,938 | 4 | 44"   | 0.908 | 3.63 | 32   | 26,759 | 24,109 | 20,405 |
| 2448 | 89 | 24 48 | 24 24     | 23.5 | 50,438 | 4 | 48"   | 0.981 | 3.92 | 36   | 27,299 | 24,649 | 20,945 |
| 2452 | 90 | 24 52 | 24 16 12  | 23.5 | 53,938 | 4 | 51.5" | 1.033 | 4.13 | 38.5 | 31,601 | 28,057 | 23,107 |
| 2453 | 91 | 24 53 | 24 20 9   | 23.5 | 55,438 | 4 | 51.5" | 1.033 | 4.13 | 38.5 | 31,972 | 28,428 | 23,477 |
| 2456 | 92 | 24 56 | 24 22 9   | 23.5 | 57,938 | 4 | 55"   | 1.105 | 4.42 | 41   | 32,815 | 29,272 | 24,321 |
| 2457 | 93 | 24 57 | 24 24 9   | 23.5 | 59,438 | 4 | 55"   | 1.105 | 4.42 | 41   | 33,186 | 29,642 | 24,691 |
| 2459 | 94 | 24 59 | 21 21 17  | 23.5 | 61,688 | 4 | 59"   | 1.17  | 4.68 | 44   | 33,827 | 30,283 | 25,332 |
| 2460 | 95 | 24 60 | 24 24 12  | 23.5 | 61,938 | 4 | 59"   | 1.17  | 4.68 | 44   | 34,030 | 30,486 | 25,535 |
| 2461 | 96 | 24 61 | 24 24 14a | 23.5 | 63,438 | 4 | 59"   | 1.17  | 4.68 | 44   | 34,400 | 30,856 | 25,905 |
| 2462 | 97 | 24 62 | 24 24 14b | 23.5 | 64,188 | 4 | 59"   | 1.17  | 4.68 | 44   | 34,670 | 31,126 | 26,175 |

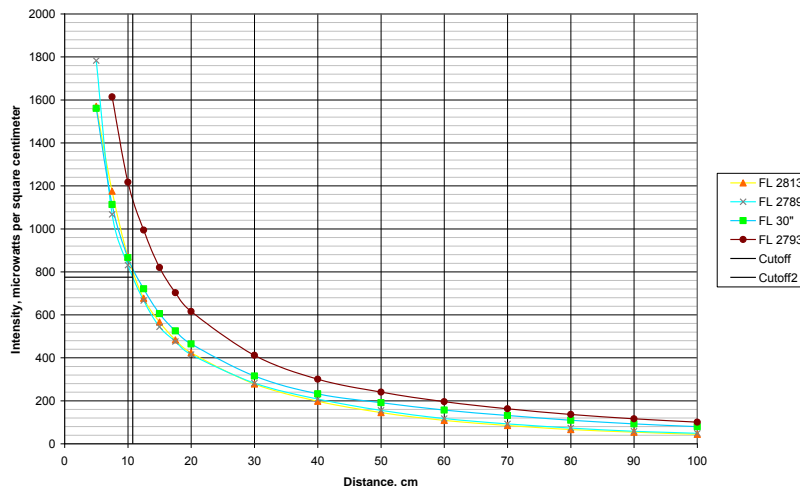
## HOW TO SIZE PCP COMPOUND UNITS

The Compound unit will fill “blocks” of space in an air stream. Consider an AHU with a cross-section of 50” by 95” and one side access. One column of 2445’s and one column of 2444’s would fit with need of a 1” spacer. Four 2444’s could also be used, but would require a 2.5” spacer. Many different arrays can be built from the above list. We design first by filling the cross-section, then find multiples of the same compound, or at least the same lamp size. Contact Pura Vida Air Systems to help design your array.

## LAMPS

**Pura Vida Air Systems lamps do not produce ozone!** The lamps provide a minimum intensity of 775 microwatts/cm<sup>2</sup> (5 milliwatts per square inch) at 10.77 centimeters (4.24”) to activate the catalyst effectively. To maintain tested performance, lamps may not be substituted with another manufacturer’s products. These lamps provide UV-C wavelengths @ 254 nm. All lamps must be replaced at 12000 hrs (16 months continuous use) to maintain intensity requirements. Pura Vida Air Systems lamps contain trace amounts of mercury, encapsulated within the lamp and sealed with a Teflon coating, therefore reducing risk to the consumer or ecosphere.

Intensity over Distance



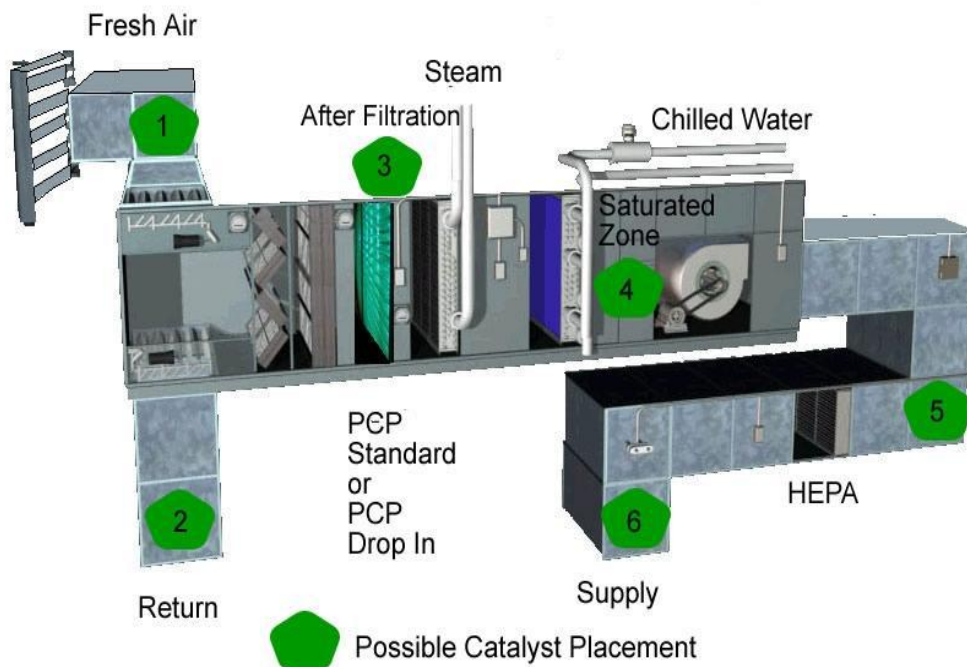
## POWER

Ballasts are matched to the specific length of lamp. To maintain tested performance, ballasts may not be substituted with another manufacturer's products. The ballasts must be specified as 120v, 60 Hz: contact the factory for other voltage/frequency requirements. The ballast operating temperature range is -20°F to 158°F. Power is delivered from Compound to Compound by a metal conduit running through the catalyst panels.

## SAFETY

Pura Vida Air Systems includes a safety door switch on all portable units and may provide a Current Killbox (CKB) on duct/AHU units. This CKB kills power to the lamps when the pressure difference between airstream and atmosphere drops below 0.15 inches H<sub>2</sub>O. It also includes provisions for a door switch circuit that will kill power to the lamps if certain doors are opened.

### Where does Pura Vida Air Systems fit into an air stream?





| Objective   | Location | Solution   |
|---|----------|--|
| Reduce contaminants before entering the AHU   | 1        | <ul style="list-style-type: none"> <li>• Example – fresh air intake located near heliport</li> <li>• Recommended for general IAQ to reduce TVOC and viable biologics entering unit</li> <li>• Note: metal pre-filter required</li> </ul>   |
| Reduce contaminants leaving particular areas or offices from mixing into air stream   | 2        | <ul style="list-style-type: none"> <li>• Example – Funeral home body prep; coroner’s office; branch on common return with contamination problems (must have filtration upstream)</li> </ul>  |
| Reduce contaminants entering unit in mixed air stream after filter bank <b>(possible filter damage may occur – contact Pura Vida Air Systems for options)</b> | 3        | <ul style="list-style-type: none"> <li>• Reduces viable biologics and particulate load</li> <li>• Renders captured contaminants non-viable</li> <li>• This placement is preferred when typical RH is 15% or more</li> </ul>  |
| Reduce risk of viable biohazards entering supply duct by prohibiting biologics and mold from accumulating on the cooling coil <b>(recommended)</b>            | 4        | <ul style="list-style-type: none"> <li>• Example – Accessory filter section to bathe coils in UV-C light</li> <li>• These units are a cost-effective solution if the end user is requesting UV-C lamps since PCP Compound units will reduce biolevels as well as prohibit buildup on surfaces</li> <li>• This location is preferred when typical upstream RH is below 15%</li> </ul> |
| Lengthen HEPA life by reducing load of contaminant upstream of HEPA   | 5        | <ul style="list-style-type: none"> <li>• Reduces viable biologics and particulate load</li> <li>• Typical applications include clean rooms and operating suites</li> <li>• Renders captured contaminants non-viable</li> </ul>   |
| Reduce contaminants before entering the supply distribution   | 6        | <ul style="list-style-type: none"> <li>• Ideal for Pura Vida Air Systems PCP Compounds, 2008LB or 2008DT</li> </ul>  |

**Caution: Equipment Damage Hazard. Ultraviolet light can cause color shift or surface degradation and sometimes structural degradation of non-metallic components, including filtration media! Pura Vida Air Systems provides UV shielding; contact your local rep.**

**SPECIFICATION INSERT EXAMPLE AND AIR HANDLING UNIT SCHEDULE**

**2.7.3 Air Treatment System**

System shall be a factory-fabricated and tested three-part integral assembly for treatment of air by: (1) particulate filtration using minimum MERV-13 rating per ASHRAE 52.1; (2) ultraviolet C-band germicidal irradiation (UVGI); and (3) photocatalytic oxidation (PCO). Particulate filters shall be located upstream of and adjacent to the UVGI lamps and PCO filters in the air handling unit's airstream. System shall be Pura Vida Air Systems.

**2.7.3.1 Particulate Filters**

Units shall be listed according to requirements of UL 900, except high efficiency particulate air filters of 99.97 percent efficiency by the DOP Test method shall be as listed under the Label Service and shall meet the requirements of UL 586. Cartridge type particulate air filters shall be minimum 6 inches in depth, sectional, replaceable dry media type of the size indicated and shall have a MERV of 13 when tested according to ASHRAE 52.2. Initial resistance at 500 fpm shall not exceed 0.56 inches, water gauge. Filters shall be UL class 1. Media shall be pleated microglass paper media with corrugated aluminum separators, sealed inside the filter cell to form a totally rigid filter assembly. Fluctuations in filter face velocity or turbulent airflow will have no effect on filter integrity or performance. Each filter shall be installed with an extended surface pleated media panel filter as a prefilter in a factory preassembled side access housing, or a factory-made sectional frame bank, as indicated.

**2.7.3.2 VOC/Biological Filters**

VOC/biological filters shall be photocatalytic oxidation (PCO) type using a titanium dioxide (TiO<sub>2</sub>) catalyst. PCO filters shall be comprised of pleated media panels in the air stream, with ultraviolet C-band lamps placed through the panels to ensure proper spacing for adequate photon activation. PCO shall be located in an accessory section adjacent downstream from the particulate filter section. Holding frames for 24x24 and 24x12 inch panels shall be provided by the PCO manufacturer. Ballasts for UVC lamps shall be located out of the airstream in recessed framing channels or on the exterior of the air handling unit in NEMA enclosures.

**2.7.3.3 Controls**

Ultraviolet lamp ballasts shall be monitored by current switch sensors located with the ballasts in the accessory section or associated NEMA enclosure of the air handling unit that provide a signal to the Owner's EMCS. Access doors shall be monitored by pressure sensitive micro-switches that shall de-energize the UV lamps when the door is not fully closed, and shall provide an alarm signal to the Owner's EMCS.

| SINGLE-DUCT VAV AIR HANDLING UNIT SCHEDULE |                   |         |                |                   |               |      |             |             |                   |                    |          |          |                  |                   |          |         |          |             |                           |                      |                    |                  |       |                          |       |               |
|--|-------------------|---------|----------------|-------------------|---------------|------|-------------|-------------|-------------------|--------------------|----------|----------|------------------|-------------------|----------|---------|----------|-------------|---------------------------|----------------------|--------------------|------------------|-------|--------------------------|-------|---------------|
| PLAN MARK                                  | DEFINITION        | ZONE    | DESIGN         |                   |               |      |             |             | COOLING COIL DATA |                    |          |          |                  |                   |          |         |          |             | AIR TREATMENT SYSTEM DATA |                      |                    |                  |       |                          | NOTES |               |
|  |                   |         | AIR FLOW (CFM) | OUTSIDE AIR (CFM) | ESP (IN W.G.) | HPM  | OPAKE (HPM) | MOORE (CFM) | VOLUME/HP (CFM)   | PRESSURE (IN W.G.) | BAT (IN) | LAT (IN) | SEN. LOAD (TONS) | TOTAL LOAD (TONS) | TEMP (F) | ENT (F) | UNIT (F) | WALL P. (F) | TYPE                      | RESISTANCE (IN W.G.) | PG. INF. (IN W.G.) | THICK. (IN W.G.) | TYPE  | TREATMENT METHOD         |       | PHOTON SOURCE |
| AHU-1                                      | BUILDING EXTERIOR | WEST    | 12480          | 4385              | 2.50          | 1879 | 18.78       | 20          | 480/2/50          | 0.30               | 78       | 55       | 389.1            | 611.1             | 101.2    | 44      | 56       | 15.0        | SWIRLBOX                  | MERV 13              | 0.56               | 1.40             | PANEL | PHOTOCATALYTIC OXIDATION | UVC   | 0.10          |
| AHU-2                                      | BUILDING EXTERIOR | CENTRAL | 14780          | 1900              | 2.50          | 1554 | 13.28       | 20          | 480/2/50          | 0.30               | 78       | 55       | 322.7            | 494.4             | 82.4     | 44      | 56       | 15.0        | SWIRLBOX                  | MERV 13              | 0.56               | 1.40             | PANEL | PHOTOCATALYTIC OXIDATION | UVC   | 0.10          |
| AHU-3                                      | BUILDING EXTERIOR | EAST    | 5680           | 2080              | 2.50          | 1491 | 14.32       | 20          | 480/2/50          | 0.30               | 78       | 55       | 363.0            | 564.6             | 74.1     | 44      | 56       | 15.0        | SWIRLBOX                  | MERV 13              | 0.56               | 1.40             | PANEL | PHOTOCATALYTIC OXIDATION | UVC   | 0.10          |



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