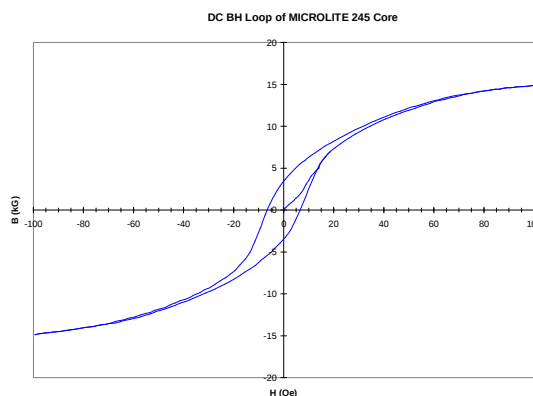


MICROLITE® Toroidal Cores are manufactured with Metglas® amorphous alloy 2605SA1 ribbon. Their unique combination of high saturation flux density and low loss make them the first choice for all energy storage applications, enabling the designer to achieve both size and system cost reduction.



## Applications

- SMPS output inductors
- Flyback transformers
- Differential input inductors
- PVC inductors
- VRM inductors

## Benefits

- High saturated flux density
- Significant size reduction
- Low core loss
- Extended bias capability
- Fewer turns due to higher permeability

### Physical Properties Metglas MICROLITE XP Cores

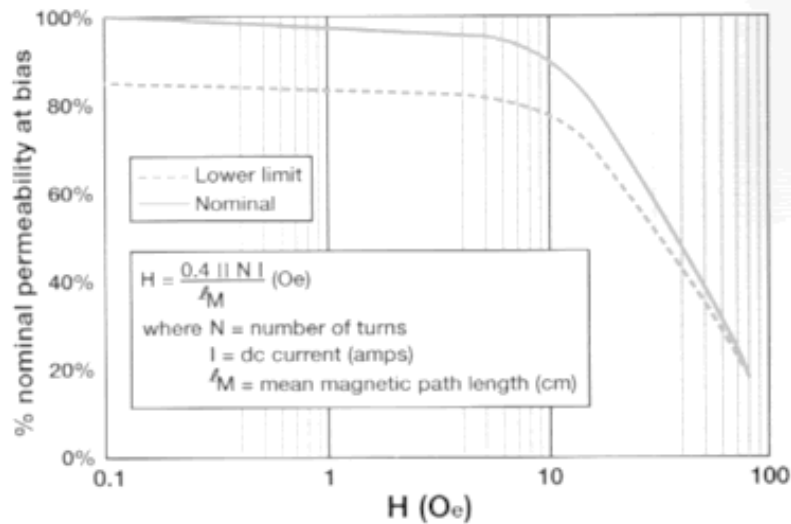
|                                           |      |
|-------------------------------------------|------|
| Ribbon Thickness (μm) .....               | 23   |
| Density (g/cm <sup>3</sup> ) .....        | 7.18 |
| Thermal Expansion (ppm/°C) .....          | 7.6  |
| Crystallization Temperature (°C) .....    | 508  |
| Curie Temperature (°C) .....              | 399  |
| Continuous Service Temperature (°C) ..... | 150  |

### Magnetic Properties Metglas MICROLITE XP Cores

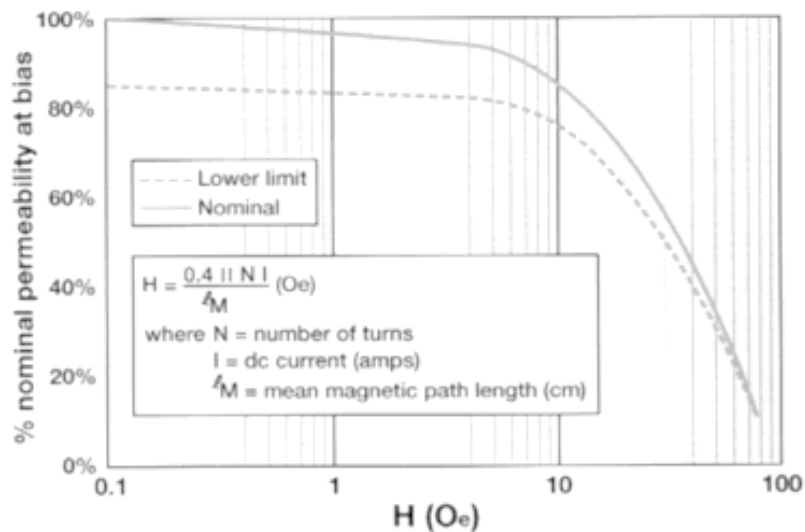
|                                             |         |
|---------------------------------------------|---------|
| Saturation Flux Density (T) .....           | 1.56    |
| Permeability (depending on core size) ..... | 245/270 |

## Percent Permeability vs. DC Bias @ 25°C

MICROLITE  $\mu = 245$

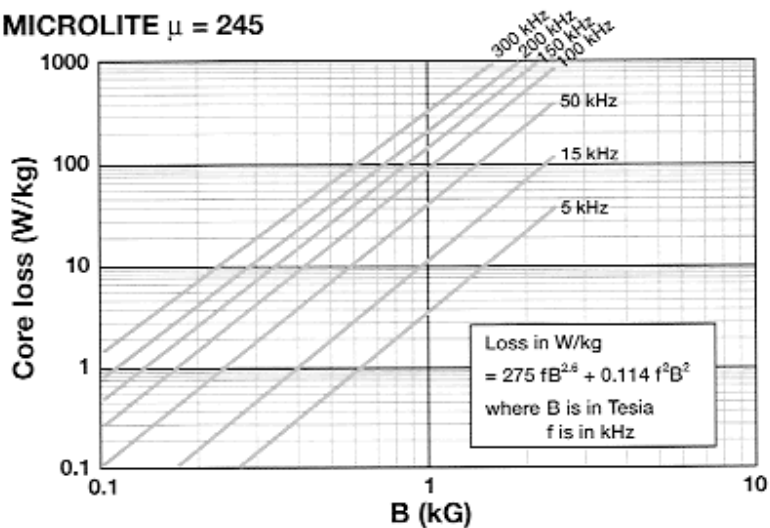


MICROLITE  $\mu = 270$

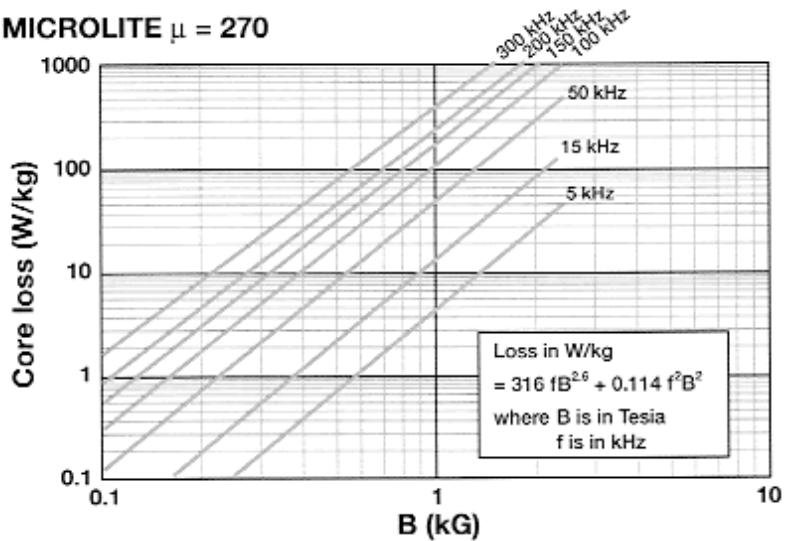


## Core Loss vs. Flux Density @ 25°C

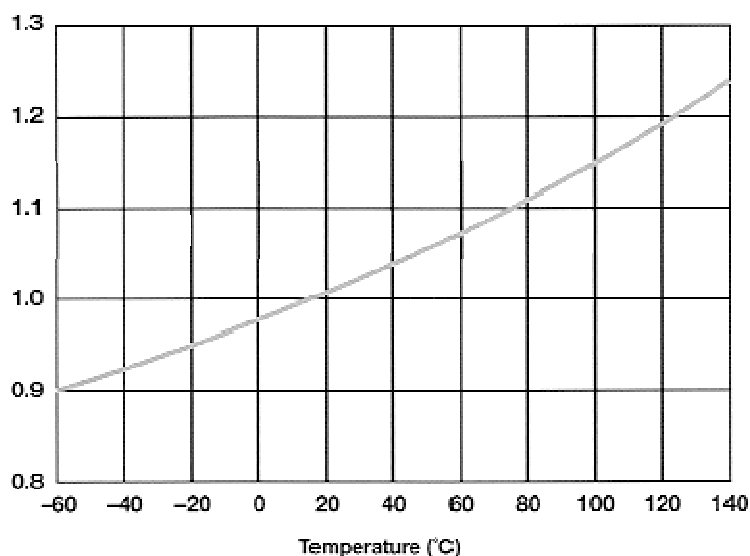
MICROLITE  $\mu = 245$



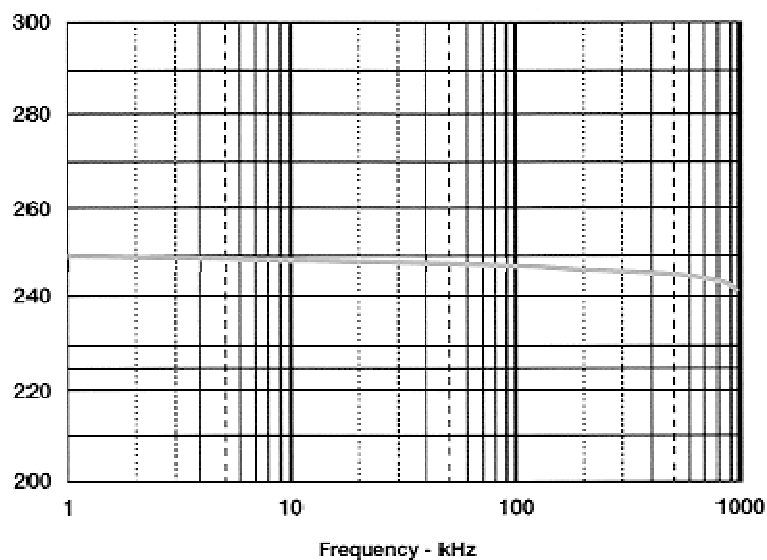
MICROLITE  $\mu = 270$

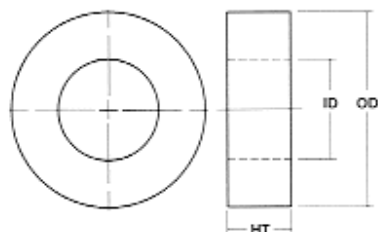


## Temperature Dependence of Inductance

MICROLITE  $\mu = 245$ 

## Permeability vs. Frequency





## Ordering Information

Example: **MP1710XDGC**

METGLAS Products  
Outside Diameter (OD)  
Height (HT)

Distributed Gap Core

| Box Type (X) | DuPont Material | UL File No. | Flam. Rating UL 94 | Elec. Rel. Temp. Rec. Index (UL746B) Temp. |
|--------------|-----------------|-------------|--------------------|--------------------------------------------|
| P            | Zytel® 70G33L   | E41938      | HB                 | 120                                        |
| L            | Zytel® FR50     | E41938      | V-0                | 130                                        |
| V            | Rymite® FR530L  | E68678      | V-0                | 150                                        |
| M            | Epoxy FRB34SD   | E206123     | —                  | —                                          |

Class B, F  
Encapsulated cores are available upon request.

| MICROLITE® Toroidal Cores |                |              |              |                        |                                   |                        |                                   |                                                  |              |                                       |
|---------------------------|----------------|--------------|--------------|------------------------|-----------------------------------|------------------------|-----------------------------------|--------------------------------------------------|--------------|---------------------------------------|
| Core No.                  | CORE DIMENSION |              |              | Performance Parameters |                                   |                        |                                   |                                                  |              |                                       |
|                           | O.D.Max (mm)   | I.D.Min (mm) | Ht. Max (mm) | Im (cm)                | A <sub>c</sub> (cm <sup>2</sup> ) | Vol (cm <sup>3</sup> ) | W <sub>a</sub> (cm <sup>2</sup> ) | W <sub>a</sub> A <sub>c</sub> (cm <sup>4</sup> ) | Initial Perm | A <sub>L</sub> * (nH/N <sup>2</sup> ) |
| MP1005MDGC                | 11.32          | 4.47         | 6.12         | 2.40                   | 0.10                              | 0.25                   | 0.16                              | 0.016                                            | 270          | 144.1                                 |
| MP1105MDGC                | 12.19          | 6.07         | 6.29         | 2.80                   | 0.10                              | 0.27                   | 0.29                              | 0.028                                            | 270          | 116.5                                 |
| MP1205MDGC                | 13.66          | 7.46         | 6.29         | 3.22                   | 0.09                              | 0.30                   | 0.44                              | 0.041                                            | 270          | 97.7                                  |
| MP1306MDGC                | 14.67          | 7.46         | 7.87         | 3.37                   | 0.15                              | 0.51                   | 0.44                              | 0.066                                            | 245          | 137.8                                 |
| MP1603MDGC                | 17.03          | 8.99         | 4.70         | 3.98                   | 0.09                              | 0.34                   | 0.63                              | 0.055                                            | 270          | 73.9                                  |
| MP1710MDGC                | 18.68          | 12.16        | 11.05        | 4.74                   | 0.20                              | 0.94                   | 1.16                              | 0.230                                            | 245          | 128.5                                 |
| MP2010MDGC                | 21.25          | 12.16        | 11.05        | 5.13                   | 0.30                              | 1.54                   | 1.16                              | 0.348                                            | 245          | 180.1                                 |
| MP2310MDGC                | 24.35          | 12.16        | 11.05        | 5.60                   | 0.43                              | 2.38                   | 1.16                              | 0.494                                            | 245          | 233.7                                 |
| MP2510MDGC                | 26.84          | 18.51        | 11.05        | 7.01                   | 0.27                              | 1.89                   | 2.69                              | 0.725                                            | 245          | 118.4                                 |
| MP2610MDGC                | 26.92          | 15.97        | 11.05        | 6.61                   | 0.37                              | 2.48                   | 2.00                              | 0.751                                            | 245          | 174.6                                 |
| MP3210MDGC                | 33.57          | 21.69        | 11.05        | 8.54                   | 0.41                              | 3.52                   | 3.69                              | 1.520                                            | 245          | 148.3                                 |
| MP3310MDGC                | 34.06          | 14.70        | 11.05        | 7.49                   | 0.71                              | 5.34                   | 1.70                              | 1.210                                            | 245          | 292.9                                 |
| MP3505MDGC                | 36.40          | 21.69        | 6.29         | 8.97                   | 0.26                              | 2.35                   | 3.69                              | 0.968                                            | 245          | 90.0                                  |
| MP3510MDGC                | 36.52          | 18.51        | 11.05        | 8.48                   | 0.66                              | 5.58                   | 2.69                              | 1.770                                            | 245          | 238.9                                 |
| MP3710MDGC                | 38.50          | 21.69        | 11.05        | 9.29                   | 0.61                              | 5.66                   | 3.69                              | 2.251                                            | 245          | 201.9                                 |
| MP4010MDGC                | 41.58          | 21.69        | 11.05        | 9.76                   | 0.73                              | 7.15                   | 3.69                              | 2.706                                            | 245          | 231.1                                 |
| MP4510MDGC                | 46.73          | 21.69        | 11.05        | 10.55                  | 0.94                              | 9.91                   | 3.69                              | 3.472                                            | 245          | 274.4                                 |
| MP7050MDGC                | 13.23          | 7.46         | 6.12         | 3.14                   | 0.08                              | 0.25                   | 0.44                              | 0.035                                            | 245          | 78.2                                  |
| MP7089MDGC                | 46.55          | 28.95        | 15.72        | 11.65                  | 0.94                              | 10.92                  | 6.58                              | 6.170                                            | 245          | 247.7                                 |
| MP7109MDGC                | 57.21          | 37.44        | 15.32        | 14.64                  | 1.03                              | 15.13                  | 11.01                             | 11.376                                           | 245          | 217.4                                 |
| MP7120MDGC                | 17.31          | 10.46        | 7.87         | 4.24                   | 0.14                              | 0.59                   | 0.86                              | 0.119                                            | 245          | 100.3                                 |
| MP7195MDGC                | 54.32          | 26.97        | 16.52        | 12.49                  | 1.60                              | 19.98                  | 5.71                              | 9.136                                            | 245          | 394.1                                 |
| MP7206MDGC                | 21.41          | 13.46        | 7.87         | 5.35                   | 0.17                              | 0.89                   | 1.42                              | 0.238                                            | 245          | 96.2                                  |
| MP7254MDGC                | 39.38          | 24.86        | 15.65        | 9.91                   | 0.75                              | 7.46                   | 4.85                              | 3.656                                            | 245          | 234.1                                 |
| MP7310MDGC                | 23.49          | 13.46        | 7.87         | 5.66                   | 0.22                              | 1.25                   | 1.42                              | 0.315                                            | 245          | 120.7                                 |
| MP7324MDGC                | 36.99          | 23.01        | 11.05        | 9.24                   | 0.49                              | 4.50                   | 4.16                              | 2.026                                            | 245          | 162.3                                 |
| MP7350MDGC                | 23.53          | 14.22        | 9.91         | 5.79                   | 0.27                              | 1.55                   | 1.59                              | 0.425                                            | 245          | 142.3                                 |
| MP7380MDGC                | 18.30          | 10.23        | 7.87         | 4.35                   | 0.17                              | 0.74                   | 0.82                              | 0.140                                            | 245          | 120.6                                 |
| MP7438MDGC                | 46.61          | 25.22        | 18.99        | 11.05                  | 1.43                              | 15.80                  | 4.99                              | 7.141                                            | 245          | 398.4                                 |
| MP7548MDGC                | 33.25          | 19.73        | 11.05        | 8.15                   | 0.47                              | 3.82                   | 3.06                              | 1.435                                            | 245          | 177.4                                 |
| MP7585MDGC                | 34.87          | 23.95        | 9.91         | 9.08                   | 0.32                              | 2.93                   | 4.50                              | 1.452                                            | 245          | 109.3                                 |
| MP7715MDGC                | 51.53          | 32.46        | 13.89        | 12.97                  | 0.89                              | 11.57                  | 8.27                              | 7.379                                            | 245          | 211.7                                 |
| MP7930MDGC                | 27.18          | 13.46        | 11.05        | 6.21                   | 0.48                              | 2.97                   | 1.42                              | 0.681                                            | 245          | 237.3                                 |

| MICROLITE® Toroidal Cores |                 |                 |                    |                        |                                      |                           |                                      |                                                     |                 |                                          |
|---------------------------|-----------------|-----------------|--------------------|------------------------|--------------------------------------|---------------------------|--------------------------------------|-----------------------------------------------------|-----------------|------------------------------------------|
| Core No.                  | CORE DIMENSION  |                 |                    | Performance Parameters |                                      |                           |                                      |                                                     |                 |                                          |
|                           | O.D.Max<br>(mm) | I.D.Min<br>(mm) | Ht.<br>Max<br>(mm) | l <sub>m</sub><br>(cm) | A <sub>c</sub><br>(cm <sup>2</sup> ) | Vol<br>(cm <sup>3</sup> ) | W <sub>a</sub><br>(cm <sup>2</sup> ) | W <sub>a</sub> A <sub>c</sub><br>(cm <sup>4</sup> ) | Initial<br>Perm | A <sub>L</sub> *<br>(nH/N <sup>2</sup> ) |
| MP1306LDGC                | 15.80           | 6.17            | 8.13               | 3.37                   | 0.15                                 | 0.51                      | 0.30                                 | 0.045                                               | 245             | 137.8                                    |
| MP1306PDGC                | 15.80           | 6.17            | 8.13               | 3.37                   | 0.15                                 | 0.51                      | 0.30                                 | 0.045                                               | 245             | 137.8                                    |
| MP1306VDGC                | 15.80           | 6.17            | 8.13               | 3.37                   | 0.15                                 | 0.51                      | 0.30                                 | 0.045                                               | 245             | 137.8                                    |
| MP1603LDGC                | 18.24           | 7.87            | 4.70               | 3.98                   | 0.09                                 | 0.34                      | 0.49                                 | 0.042                                               | 270             | 73.9                                     |
| MP1603PDGC                | 18.24           | 7.87            | 4.70               | 3.98                   | 0.09                                 | 0.34                      | 0.49                                 | 0.042                                               | 270             | 73.9                                     |
| MP1603VDGC                | 18.24           | 7.87            | 4.70               | 3.98                   | 0.09                                 | 0.34                      | 0.49                                 | 0.042                                               | 270             | 73.9                                     |
| MP1710LDGC                | 20.22           | 10.87           | 11.43              | 4.74                   | 0.20                                 | 0.94                      | 0.93                                 | 0.184                                               | 245             | 128.5                                    |
| MP1710PDGC                | 20.22           | 10.87           | 11.43              | 4.74                   | 0.20                                 | 0.94                      | 0.93                                 | 0.184                                               | 245             | 128.5                                    |
| MP1710VDGC                | 20.22           | 10.87           | 11.43              | 4.74                   | 0.20                                 | 0.94                      | 0.93                                 | 0.184                                               | 245             | 128.5                                    |
| MP2010LDGC                | 22.78           | 10.87           | 11.43              | 5.13                   | 0.30                                 | 1.54                      | 0.93                                 | 0.278                                               | 245             | 180.1                                    |
| MP2010PDGC                | 22.78           | 10.87           | 11.43              | 5.13                   | 0.30                                 | 1.54                      | 0.93                                 | 0.278                                               | 245             | 180.1                                    |
| MP2010VDGC                | 22.78           | 10.87           | 11.43              | 5.13                   | 0.30                                 | 1.54                      | 0.93                                 | 0.278                                               | 245             | 180.1                                    |
| MP2310LDGC                | 25.91           | 10.80           | 11.48              | 5.60                   | 0.43                                 | 2.38                      | 0.92                                 | 0.389                                               | 245             | 233.7                                    |
| MP2310PDGC                | 25.91           | 10.80           | 11.48              | 5.60                   | 0.43                                 | 2.38                      | 0.92                                 | 0.389                                               | 245             | 233.7                                    |
| MP2310VDGC                | 25.91           | 10.80           | 11.48              | 5.60                   | 0.43                                 | 2.38                      | 0.92                                 | 0.389                                               | 245             | 233.7                                    |
| MP2510LDGC                | 27.79           | 17.27           | 11.48              | 7.01                   | 0.27                                 | 1.89                      | 2.34                                 | 0.631                                               | 245             | 118.4                                    |
| MP2510PDGC                | 27.79           | 17.27           | 11.48              | 7.01                   | 0.27                                 | 1.89                      | 2.34                                 | 0.631                                               | 245             | 118.4                                    |
| MP2510VDGC                | 27.79           | 17.27           | 11.48              | 7.01                   | 0.27                                 | 1.89                      | 2.34                                 | 0.631                                               | 245             | 118.4                                    |
| MP2610LDGC                | 28.32           | 14.15           | 11.48              | 6.61                   | 0.37                                 | 2.48                      | 1.57                                 | 0.589                                               | 245             | 174.6                                    |
| MP2610PDGC                | 28.32           | 14.15           | 11.48              | 6.61                   | 0.37                                 | 2.48                      | 1.57                                 | 0.589                                               | 245             | 174.6                                    |
| MP2610VDGC                | 28.32           | 14.15           | 11.48              | 6.61                   | 0.37                                 | 2.48                      | 1.57                                 | 0.589                                               | 245             | 174.6                                    |
| MP3210LDGC                | 34.95           | 19.86           | 11.48              | 8.54                   | 0.41                                 | 3.52                      | 3.10                                 | 1.275                                               | 245             | 148.3                                    |
| MP3210PDGC                | 34.95           | 19.86           | 11.48              | 8.54                   | 0.41                                 | 3.52                      | 3.10                                 | 1.275                                               | 245             | 148.3                                    |
| MP3210VDGC                | 34.95           | 19.86           | 11.48              | 8.54                   | 0.41                                 | 3.52                      | 3.10                                 | 1.275                                               | 245             | 148.3                                    |
| MP3310LDGC                | 36.07           | 12.95           | 11.48              | 7.49                   | 0.71                                 | 5.34                      | 1.32                                 | 0.939                                               | 245             | 292.9                                    |
| MP3310PDGC                | 36.07           | 12.95           | 11.48              | 7.49                   | 0.71                                 | 5.34                      | 1.32                                 | 0.939                                               | 245             | 292.9                                    |
| MP3310VDGC                | 36.07           | 12.95           | 11.48              | 7.49                   | 0.71                                 | 5.34                      | 1.32                                 | 0.939                                               | 245             | 292.9                                    |
| MP3510LDGC                | 38.10           | 16.69           | 11.48              | 8.48                   | 0.66                                 | 5.58                      | 2.19                                 | 1.439                                               | 245             | 238.9                                    |
| MP3510PDGC                | 38.10           | 16.69           | 11.48              | 8.48                   | 0.66                                 | 5.58                      | 2.19                                 | 1.439                                               | 245             | 238.9                                    |
| MP3510VDGC                | 38.10           | 16.69           | 11.48              | 8.48                   | 0.66                                 | 5.58                      | 2.19                                 | 1.439                                               | 245             | 238.9                                    |
| MP4010LDGC                | 43.05           | 19.86           | 11.48              | 9.76                   | 0.73                                 | 7.15                      | 3.10                                 | 2.270                                               | 245             | 231.1                                    |
| MP4010PDGC                | 43.05           | 19.86           | 11.48              | 9.76                   | 0.73                                 | 7.15                      | 3.10                                 | 2.270                                               | 245             | 231.1                                    |
| MP4010VDGC                | 43.05           | 19.86           | 11.48              | 9.76                   | 0.73                                 | 7.15                      | 3.10                                 | 2.270                                               | 245             | 231.1                                    |
| MP4510LDGC                | 48.13           | 19.86           | 11.48              | 10.55                  | 0.94                                 | 9.91                      | 3.10                                 | 2.912                                               | 245             | 274.4                                    |
| MP4510PDGC                | 48.13           | 19.86           | 11.48              | 10.55                  | 0.94                                 | 9.91                      | 3.10                                 | 2.912                                               | 245             | 274.4                                    |
| MP4510VDGC                | 48.13           | 19.86           | 11.48              | 10.55                  | 0.94                                 | 9.91                      | 3.10                                 | 2.912                                               | 245             | 274.4                                    |

*Contact Information:*

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