

The Passive Revolution

FrigoDynamics® Hybrid Heat Exchanger Solutions
for Bridgelux® BXRA and VERO™ CoB LED Light Engines



zero noise level

no lifetime issues

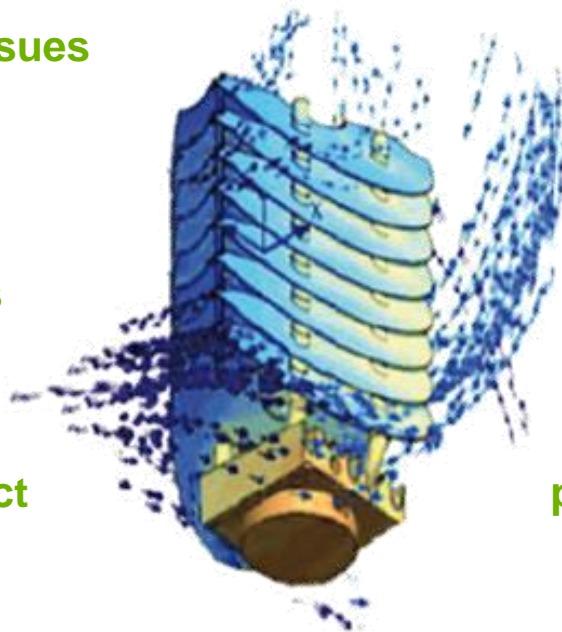
no CO₂ emission

cools all
lumen values

lighter than other
passive solutions

compact

performs in any
orientation



passive convection
natural airflow



DPMA geschützt
DPMA protected



Developed and designed in Germany

FrigoDynamics GmbH
Bahnhofstr. 16
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FrigoDynamics® Hybrid Heat Exchanger Solutions for Bridgelux® BXRA and VERO™ CoB LED Light Engines



Der SC Hybrid Wärmetauscher

besteht durch ein besonderes, patentiertes Design, nützt den Kamineffekt aus und maximiert dadurch die Kühlleistung. Die kompakte Auslegung ist ideal für Track/Spot Light Applikationen. Die Lösung arbeitet in alle Richtungen.

The SC Hybrid HX

has a unique, patented design utilizing the chimney effect, thus maximizing cooling performance. The compact shape allows it to fit in typical cylindrical track/spot light type applications. Performs in any orientation.

Échangeur de chaleur pour le Hybrid SC

une conception spéciale, brevetée, bénéficieront de l'effet de cheminée et cela maximise la performance de refroidissement. Le design compact est idéal pour les applications légères de piste/spot.

La solution fonctionne dans toutes les directions.

El SC Hybrid Intercambiador de calor

tiene un diseño único y patentado utilizando el efecto chimenea, lo que maximiza la refrigeración de rendimiento. La forma compacta permite encajar en pista/spot cilíndrica en aplicaciones típicas de luminarias. Funciona en cualquier dirección.

Lo SC Hybrid scambiatore di calore

un design speciale, brevettato, potranno beneficiare l'effetto camino e questo massimizza le prestazioni di raffreddamento. Il design compatto è ideale per applicazioni leggera traccia/spot. La soluzione funziona in tutte le direzioni.



BXRA



VERO™



The only viable high power cooling solutions which provably work much longer than the product they cool

FrigoDynamics® thermal solutions		2-Phase HX Dimensions mm inch		SC HPK-Fin™ 150			SC HPK-Fin™ 180			SC HPK-Fin™ 230		
				Ø100 H ~150 Ø3.93 H ~5.90			Ø100 H ~180 Ø3.93 H ~7.09			Ø100 H ~230 Ø3.93 H ~9.06		
T _c < 70°C T _c < 158°F	T _c < 75°C T _c < 167°F	T _c < 85°C T _c < 185°F	T _{ambient} C F	25° 77°	35° 95°	40° 104°	25° 77°	35° 95°	40° 104°	25° 77°	35° 95°	40° 104°
BXRA - RS @ 24.4V - 2100mA	51.2 W	up to 5300lm										
BXRA - RS @ 30.4V - 2800mA	85.1 W	up to 8500lm										
VERO 18 @ 31.5V - 1400mA	44.1 W	up to 4400lm										
VERO 18 @ 32.9V - 2100mA	69.1 W	up to 6300lm										
VERO 29 @ 38.5V - 1400mA	53.9 W	up to 6400lm										
VERO 29 @ 39.4V - 2100mA	82.7 W	up to 9200lm										
VERO 29 @ 40.9V - 2800mA	114.5 W	up to 11500lm										

Please [contact](#) us, should you have special requirements you do not see covered here.

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Product complies with EU Directive 2002/95/EC



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Der OC Hybrid Wärmetauscher

überzeugt durch sein flaches, patentiertes Design und eignet sich dadurch besonders für den Einsatz in abgehängten Decken, wenn der Einbauraum in der Vertikalen limitiert ist.

The OC Hybrid HX

the patented design gives it a low profile ideal for fitting in spaces that have height restrictions. The shape allows it to fit in typical recess downlight type applications.

OC Hybrid Échangeur de chaleur

avec ses plats, brevetés design et est donc idéal pour une utilisation dans les plafonds suspendus, si peu d'espace de l'installation à la verticale.

El OC Hybrid Intercambiador de calor

El diseño patentado da un bajo perfil ideal para encajar en espacios que tienen altura limitada, por tanto es ideal para su uso en los falsos techos para los downlight.

Lo OC Hybrid scambiatore di calore

con il suo piatto, design brevettato ed è quindi ideale per l'uso in soffitti sospesi, se limitato lo spazio di installazione in verticale



BXRA



VERO™



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FrigoDynamics® thermal solutions		2-Phase HX Dimensions mm inch		OC HPK-Fin™ 210			OC HPK-Fin™ 250			OC HPK-Fin™ 300		
				H55 x W120 x L210 H2.17 x W4.72 x L8.27			H55 x W120 x L250 H2.17 x W4.72 x L9.84			H55 x W120 x L300 H2.17 x W4.72 x L11.85		
T _c < 70°C T _c < 158°F	T _c < 75°C T _c < 167°F	T _c < 85°C T _c < 185°F	T _{ambient} C F	25° 77°	35° 95°	40° 104°	25° 77°	35° 95°	40° 104°	25° 77°	35° 95°	40° 104°
BXRA - RS @ 24.4V - 2100mA	51.2 W	up to 5300lm										
BXRA - RS @ 30.4V - 2800mA	85.1 W	up to 8500lm										
VERO 18 @ 31.5V - 1400mA	44.1 W	up to 4400lm										
VERO 18 @ 32.9V - 2100mA	69.1 W	up to 6300lm										
VERO 29 @ 38.5V - 1400mA	53.9 W	up to 6400lm										
VERO 29 @ 39.4V - 2100mA	82.7 W	up to 9200lm										
VERO 29 @ 40.9V - 2800mA	114.5 W	up to 11500lm										

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Der TC Hybrid Wärmetauscher

überzeugt durch sein flaches, patentiertes Design und eignet sich dadurch besonders für den Einsatz in abgehängten Decken, wenn der Einbauraum in der Vertikalen limitiert ist.

The TC Hybrid HX

the patented design gives it a low profile ideal for fitting in spaces that have height restrictions. The shape allows it to fit in typical recess downlight type applications.

TC Hybrid Échangeur de chaleur

avec ses plats, brevetés design et est donc idéal pour une utilisation dans les plafonds suspendus, si peu d'espace de l'installation à la verticale.

El TC Hybrid Intercambiador de calor

El diseño patentado da un bajo perfil ideal para encajar en espacios que tienen altura limitada, por tanto es ideal para su uso en los falsos techos para los downlight.

Lo TC Hybrid scambiatore di calore

con il suo piatto, design brevettato ed è quindi ideale per l'uso in soffitti sospesi, se limitato lo spazio di installazione in verticale



BXRA



VERO™



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				2-Phase HX Dimensions mm inch		TC HPK-Fin™ 110			TC HPK-Fin™ 160			TC HPK-Fin™ 210		
						H113 x W120 x L110 H4.46 x W4.72 x L4.34			H113 x W120 x L160 H4.46 x W4.72 x L4.58			H113 x W120 x L210 H4.46 x W4.72 x L8.29		
Tc < 70°C Tc < 158°F	Tc < 75°C Tc < 167°F	Tc < 85°C Tc < 185°F	Tambient C F	25° 77°	35° 95°	40° 104°	25° 77°	35° 95°	40° 104°	25° 77°	35° 95°	40° 104°		
BXRA - RS @ 24.4V - 2100mA	51.2 W	up to 5300lm												
BXRA - RS @ 30.4V - 2800mA	85.1 W	up to 8500lm												
VERO 18 @ 31.5V - 1400mA	44.1 W	up to 4400lm												
VERO 18 @ 32.9V - 2100mA	69.1 W	up to 6300lm												
VERO 29 @ 38.5V - 1400mA	53.9 W	up to 6400lm												
VERO 29 @ 39.4V - 2100mA	82.7 W	up to 9200lm												
VERO 29 @ 40.9V - 2800mA	114.5 W	up to 11500lm												

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Der HB Hybrid Wärmetauscher

besteht durch ein besonderes, patentiertes Design, nützt den Kamineffekt aus und maximiert dadurch die Kühlleistung. Die kompakte und sehr leichte Auslegung ist ideal für wirkliche High Power Applikationen. Die Lösung arbeitet in alle Richtungen.

The HB Hybrid HX

has a unique, patented design utilizing the chimney effect, thus maximizing cooling performance. The compact shape allows it to fit in typical cylindrical track/spot light type applications. Performs in any orientation.

El HB Hybrid Intercambiador de calor

tiene un diseño único y patentado utilizando el efecto chimenea, lo que maximiza la refrigeración de rendimiento. La forma compacta permite encajar en pista/spot cilíndrica en aplicaciones típicas de luminarias. Funciona en cualquier dirección.



VERO29



~ 870g
1.92 lbs

~ 1120g
2.47 lbs

~ 1410g
3.11 lbs



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FrigoDynamics® thermal solutions			2-Phase HX Dimensions mm inch	HB HPK-Fin™ 200			HB HPK-Fin™ 270			HB HPK-Fin™ 360		
				Ø 160 x H200 Ø 6.30 x H7.90			Ø 160 x H270 Ø 6.30 x H10.63			Ø 160 x H360 Ø 6.30 x H14.17		
Tc < 70°C Tc < 158°F	Tc < 75°C Tc < 167°F	Tc < 85°C Tc < 185°F	Tambient C F	25° 77°	35° 95°	40° 104°	25° 77°	35° 95°	40° 104°	35° 95°	45° 113°	55° 131°
VERO 18 @ 32.9V - 2100mA	69,1 W	up to 6300lm										
VERO 29 @ 38.5V - 1400mA	53,9 W	up to 6400lm										
VERO 29 @ 39,4V - 2100mA	82,7 W	up to 9200lm										
VERO 29 @ 40.9V - 2800mA	114,5 W	up to 11500lm										
VERO 29 @ 41.3V - 3150mA	130,1 W	up to 14670lm										

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